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As confidentially submitted to the Securities and Exchange Commission on November 8, 2021.
This draft registration statement has not been publicly filed with the Securities and Exchange Commission and all information herein remains strictly confidential.

Registration No. 333-

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM S-1
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933

NEUMORA THERAPEUTICS, INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware	2834	84-4367680
(State or Other Jurisdiction of Incorporation or Organization)	(Primary Standard Industrial Classification Code Number)	(I.R.S. Employer Identification Number)

65 Grove Street
Watertown, Massachusetts 02472
(857) 760-0900
(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

Paul Berns
Chief Executive Officer
Neumora Therapeutics, Inc.
65 Grove Street
Watertown, Massachusetts 02472
(857) 760-0900
(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent For Service)

Copies to:

Brian J. Cuneo **Phillip S. Stoup** **Latham & Watkins LLP** **140 Scott Drive** **Menlo Park, California 94025** **(650) 328-4600**	**Tamara L. Tompkins** **General Counsel and Corporate Secretary** **Neumora Therapeutics, Inc.** **65 Grove Street** **Watertown, Massachusetts 02472** **(857) 760-0900**	**Charles S. Kim** **Kristin VanderPas** **Dave Peinsipp** **Denny Won** **Cooley LLP** **4401 Eastgate Mall** **San Diego, California 92121** **(858) 550-6000**

Approximate date of commencement of proposed sale to the public: As soon as practicable after the effective date of this Registration Statement.

If any of the securities being registered on this form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, check the following box. ☐

If this form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

If this form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☐	Accelerated filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act. ☐

CALCULATION OF REGISTRATION FEE

Title of each class of securities to be registered	Proposed maximum aggregate offering price(1)	Amount of registration fee(2)
Common Stock, $0.001 par value per share	$	$

(1) Estimated solely for the purpose of calculating the amount of the registration fee in accordance with Rule 457(o) under the Securities Act of 1933, as amended. Includes the aggregate offering price of additional shares that the underwriters have the option to purchase.
(2) Calculated pursuant to Rule 457(o) based on an estimate of the proposed maximum aggregate offering price.

The Registrant hereby amends this registration statement on such date or dates as may be necessary to delay its effective date until the registrant shall file a further amendment which specifically states that this registration statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933, or until the registration statement shall become effective on such date as the Securities and Exchange Commission, acting pursuant to said Section 8(a), may determine.

Explanatory Note:

Pursuant to the applicable provisions of the Fixing America's Surface Transportation Act, we are omitting our consolidated financial statements for each of the six months ended June 30, 2020 and 2021 because they relate to historical periods that we believe will not be required to be included in the prospectus at the time of the contemplated offering. We intend to amend this registration statement to include all financial information required by Regulation S-X at the date of such amendment before distributing a preliminary prospectus to investors. In addition, we have omitted the compensation disclosure for the year ended December 31, 2020 on the basis that the registration statement will be publicly filed no earlier than January 1, 2022, at which time compensation disclosure for the year ended December 31, 2021 will be required.

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The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and we are not soliciting offers to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION, DATED , 2022

Shares

Common Stock

This is an initial public offering of shares of common stock of Neumora Therapeutics, Inc.

We are offering shares of our common stock. Prior to this offering, there has been no public market for our common stock. It is currently estimated that the initial public offering price per share will be between $ and $ per share of common stock. We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "NMRA."

We are an emerging growth company under the federal securities laws and, as such, have elected to comply with certain reduced public company reporting requirements.

Investing in our common stock involves a high degree of risk. See the section titled "Risk Factors" beginning on page 14.

	Per Share	Total
Initial public offering price	$	$
Underwriting discounts and commissions(1)	$	$
Proceeds, before expenses, to us	$	$

(1) See the section titled "Underwriting" for additional information regarding the estimated underwriting discounts and commissions and estimated offering expenses.

We have granted the underwriters an option for a period of 30 days to purchase up to an additional shares of our common stock.

The underwriters expect to deliver the shares against payment in New York, New York on , 2022.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the accuracy or adequacy of this prospectus. Any representation to the contrary is a criminal offense.

J.P. Morgan **BofA Securities** **Credit Suisse** **Stifel** **Guggenheim Securities**

, 2022

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We have not, and the underwriters have not, authorized anyone to provide you any information or to make any representations other than those contained in this prospectus or in any free writing prospectus prepared by or on behalf of us or to which we have referred you. Neither we nor the underwriters take responsibility for, or provide any assurance as to the reliability of, any other information others may give you. This prospectus is an offer to sell only the shares offered hereby, and only under circumstances and in jurisdictions where it is lawful to do so. We are not, and the underwriters are not, making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted. The information contained in this prospectus is accurate only as of the date of this prospectus, regardless of the time of delivery of this prospectus or any sale of the shares of our common stock. Our business, financial condition, results of operations and prospects may have changed since that date.

For investors outside the United States: We have not, and the underwriters have not, done anything that would permit this offering or the possession or distribution of this prospectus or any free writing prospectus in connection with this offering in any jurisdiction where action for that purpose is required, other than in the United States. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, the offering of the shares of common stock and the distribution of this prospectus outside the United States. See the section titled "Underwriting."

In this prospectus, “Neumora Therapeutics,” “Neumora,” the “company,” “we,” “us” and “our” refer to Neumora Therapeutics, Inc. and, where appropriate, our subsidiaries.

“NEUMORA,” the Neumora logos and other trade names, trademarks or service marks of Neumora appearing in this prospectus are the property of Neumora. Other trade names, trademarks or service marks appearing in this prospectus are the property of their respective holders. Solely for convenience, trade names, trademarks and service marks referred to in this prospectus appear without the ®, ™ and SM symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trade names, trademarks and service marks.

Through and including , 2022 (the 25th day after the date of this prospectus), all dealers that buy, sell or trade shares of our common stock, whether or not participating in this offering, may be required to deliver a prospectus. This delivery requirement is in addition to the obligation of dealers to deliver a prospectus when acting as underwriters and with respect to their unsold allotments or subscriptions.

PROSPECTUS SUMMARY

This summary highlights information contained elsewhere in this prospectus. This summary may not contain all of the information that you should consider before deciding to invest in our common stock. You should read this entire prospectus carefully, including the sections titled "Risk Factors," "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Business," and our audited consolidated financial statements and unaudited condensed consolidated financial statements and related notes included elsewhere in this prospectus before making an investment decision. Some of the statements in this prospectus are forward-looking statements. See the section titled "Special Note Regarding Forward-Looking Statements."

Our Mission

We are in the midst of a global brain disease crisis that is having a profound, enduring impact on patients, their families and society. Neuropsychiatric disorders and neurodegenerative diseases affect approximately 1.5 billion individuals globally, are typically chronic and progressive in nature and are associated with significant disability and a reduced quality of life. Over $110 billion is estimated to have been spent on neuroscience research and development since 2019 in the United States alone, representing approximately 33% of all disease-specific spending. However, only approximately 12% of all new therapies approved during that time period have been for the treatment of brain diseases. We believe the relative lack of progress and innovation within the broader central nervous system (CNS) landscape is due in large part to the complex, heterogeneous nature of such diseases, which makes defining patient populations and matching them with appropriate therapies challenging. As a result, patients, families and communities affected by brain diseases have been left behind.

The time has come to take a fundamentally different approach to the way treatments for brain diseases are developed. We founded Neumora to pioneer a new era of "precision neuroscience" medicines using our proprietary approach that leverages recent advances in data science and artificial intelligence and machine learning (AI/ML) technology to cut through the heterogeneity inherent in brain disease. By approaching patient enrichment and clinical development strategies through this lens, we aim to match the right patient populations to the right targeted therapeutics, thereby driving innovation and the potential for clinical success in this field and, ultimately, providing better therapies to patients. Our goal is to build a global, fully integrated precision neuroscience company that is purpose-built at scale to achieve our ambitious mission of conquering one of the greatest medical challenges of our generation.

Overview

We are a clinical-stage biotechnology company pioneering a precision medicine approach for brain diseases through the integration of data science and neuroscience. High failure rates have plagued neuroscience drug development for decades, contributing to a lack of targeted, effective medicines for brain diseases. Our approach aims to redefine neuroscience research and development by applying proprietary AI/ML methods to multimodal patient datasets in order to match defined patient populations with targeted therapeutics designed to address the underlying drivers of their disease. We believe our precision neuroscience approach will help us to cut through patient heterogeneity to increase the probability of clinical success and improve patient outcomes. Through our internal discovery efforts and business development activities, we have rapidly scaled a pipeline currently consisting of eight clinical and preclinical precision neuroscience programs targeting a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases. Our team unites some of the world's leading data scientists, neuroscience drug developers and company builders to usher in a new era of precision neuroscience and to accelerate development of novel therapies for patients and families affected by brain diseases.

Patients with common neuropsychiatric disorders and neurodegenerative diseases, such as depression, schizophrenia, Parkinson's disease and Alzheimer's disease, can present with diverse symptoms and have

multiple underlying disease drivers. However, despite the inherent heterogeneity of these disorders, patients are diagnosed based on broad disease classifications defined by subjective clinical symptoms rather than by specific underlying genetics and biological mechanisms. As a result, clinical development in neuroscience to date has taken a "one-size-fits-all" based approach, where the inability to enrich for homogeneous cohorts of patients has led to a lower rate of clinical success.

Recent advancements in oncology provide a relevant analog for the impact of applying data-driven, precision medicine approaches to improve patient outcomes. For decades, cancers were classified based primarily on the affected organs, as researchers did not have the tools or technologies to develop effective treatments targeting the biological drivers of these malignancies. However, through the clinical implementation of biopsies, high-throughput sequencing and the advancement in data science tools, the oncology field developed the ability to define cancers more precisely based on the rich insights generated from these data. Our goal is to extend a similar data-driven, precision approach for the treatment of brain diseases that leverages recent advancements in data science techniques to gain insight into the complex drivers of brain disease.

Our Precision Neuroscience Approach

We are taking a data-driven precision neuroscience approach to match the right patients to the right targeted therapeutics. Our platform is powered by advanced proprietary AI/ML methods that integrate and analyze datapoints from individual patients across multiple modalities of data to create what we refer to as "Data Biopsy Signatures," which represent maps of underlying disease mechanisms. Our platform then leverages these Data Biopsy Signatures to inform clinically relevant homogeneous patient populations, which we refer to as "Precision Phenotypes." These Precision Phenotypes serve as guides to match the right patients to the right targeted therapeutic. We believe we are the only company applying this approach, which has the potential to redefine neuroscience research and development, thereby increasing the probability of clinical success and creating more therapeutics that drive patient impact to address the global brain crisis.

Our precision neuroscience approach has four key components:

(1) **Inputs**: Multimodal patient datasets collected from public, partnered and internally generated proprietary sources, currently encompassing a library of billions of datapoints across five data modalities: genetic, imaging, EEG, digital and clinical, which we collect and ingest, or "onboard";

(2) **Infrastructur**e: A data science platform that leverages proprietary AI/ML methods supported by a robust technology stack to organize, optimize, process and analyze the onboarded data;

(3) **Integration**: The application of our proprietary AI/ML methods to transform the rich multimodal patient datapoints drawn from our library into Data Biopsy Signatures that inform Precision Phenotypes; and

(4) **Output**: Therapeutic applications that leverage insights from our Precision Phenotypes to develop precision therapeutics that are targeted for distinct populations of patients who are more likely to respond.

We plan to generate therapeutic applications to match the right patients to the right targeted therapeutics in three different ways: (i) by creating a drug signature for an existing program, which we refer to as a "pharmacological fingerprint," that can inform or align to a Precision Phenotype; (ii) by identifying novel targets through insights generated from our Precision Phenotypes, thus creating new programs; or (iii) by leveraging insights generated from our Precision Phenotypes to create new business development opportunities. As the last step in our precision development process, we intend to use the insights from Precision Phenotypes to inform the design of our clinical trials.

Our approach has been created through the tight integration of our data science and neuroscience expertise and our proprietary platform is protected by a broad and multi-faceted intellectual property portfolio. We believe our approach yields a powerful data flywheel of learning that positions us to generate a proprietary and dynamic

"encyclopedia" of Precision Phenotypes across a broad range of neuropsychiatric disorders and neurodegenerative diseases in a repeatable and scalable manner to guide the development of novel precision therapeutics.

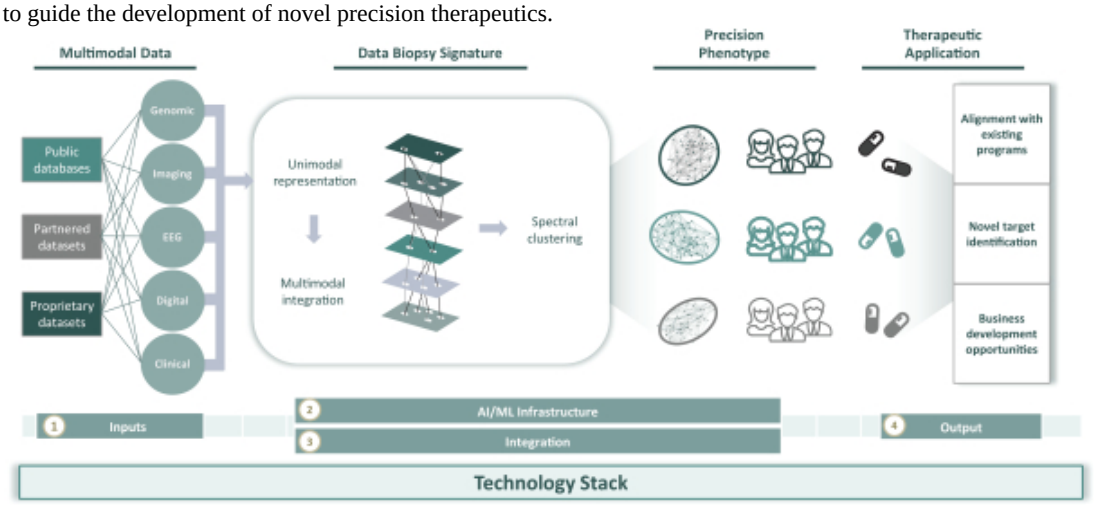


Figure 1: Neumora precision neuroscience approach

Our Precision Neuroscience Pipeline

We are building a broad pipeline of novel precision medicine candidates for neuropsychiatric disorders and neurodegenerative diseases, each with a targeted approach to development. Our precision neuroscience approach is flexible, and we are able to apply it in a modular fashion, which allows us to tailor our approach to internal or external programs at any stage of development. Today, our disclosed pipeline comprises eight programs, with two in clinical development, one in investigational new drug (IND)-enabling studies and five in the discovery stage, as summarized below:

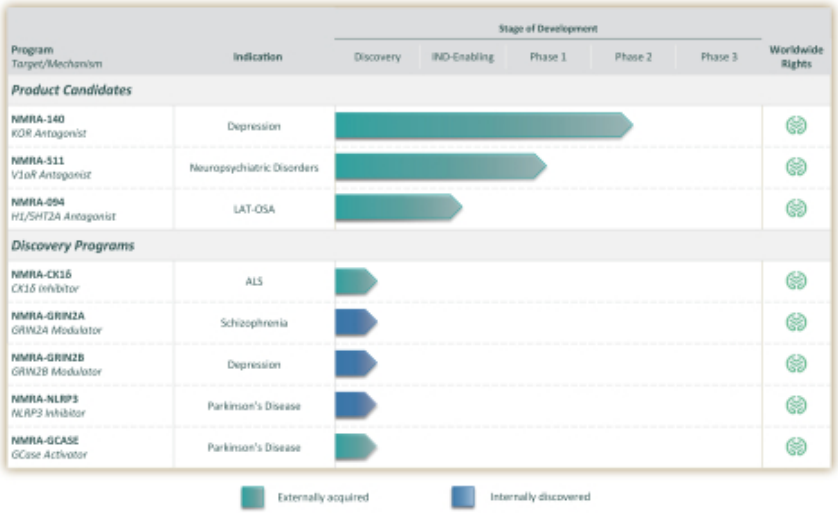


Figure 2: Neumora precision neuroscience pipeline

NMRA-140 is an investigational antagonist of the kappa opioid receptor (KOR) in development for the treatment of major depressive disorder (MDD), which is a chronic neuropsychiatric disorder with significant unmet need given that nearly 70% of MDD patients fail to achieve remission with first-line treatment. The KOR/dynorphin system is a well-characterized pathway known to modulate depressive-like states. We believe that defining a precision subset of patients with MDD will identify those more likely to respond to a KOR antagonist. When we acquired BlackThorn Therapeutics, Inc. (BlackThorn) in September 2020, BlackThorn had initiated a Phase 2a clinical trial of BTRX-335140, now known as NMRA-140, in adult patients with MDD. This Phase 2a clinical trial was initiated as a double-blind, placebo-controlled, randomized trial of NMRA-140 in 120 patients. We subsequently modified the trial to generate more unique data by increasing the target enrollment to 180 patients and added additional digital instrumentation to further augment and support our precision neuroscience approach. We have also created our OPKR1 (the gene encoding KOR) genetic-prediction model, which we intend to apply to peripheral DNA samples collected from patients enrolled in the trial. We plan to leverage the genetic, digital and clinical data generated from this trial to support future clinical development of NMRA-140. We anticipate topline results from the current trial will be available in .

NMRA-511 is an investigational antagonist of vasopressin 1a receptor (V1aR). Vasopressin plays a role in the regulation of aggression, affiliation, stress and anxiety response. Based on our encouraging preclinical findings in non-human primates as well as preclinical and clinical results from third parties, we believe V1aR has the potential to be a promising novel target for multiple neuropsychiatric disorders across the spectrum of anxiety, aggression and stress. Given the pan-diagnostic potential of this target, our approach is to quantify the neural signature that is reactive to a V1aR antagonist, which will define the pharmacological fingerprint. Our Phase 1b clinical trial is designed to generate a pharmacological fingerprint for NMRA-511 that could be aligned with a Precision Phenotype generated from multimodal patient datasets related to anxiety, post-traumatic stress and other multiple neuropsychiatric disorders. We anticipate topline results from the Phase 1b data generation clinical trial will be available in .

NMRA-094 is an investigational dual antagonist of H1/5-HT2A receptors that we are developing for the treatment of low arousal threshold-obstructive sleep apnea (LAT-OSA). Approximately 40% of obstructive sleep apnea (OSA) patients have a phenotype of excessive sleep fragmentation, which is characterized by numerous brief arousals and awakenings that disrupt restorative sleep due to interruptions in airflow. Sleep fragmentation is associated with increased risk of cardiovascular disease and all-cause mortality. Histamine and 5-HT are two critical arousal mechanisms in the CNS, and their antagonism is believed to reduce sleep fragmentation. Patients with excessive sleep fragmentation have a low arousal threshold (LAT), which can be quantified by polysomnographic measures. We will identify a Precision Phenotype of the LAT-OSA population through multimodal clinical measures, including polysomnography in our Phase 1 clinical trials for NMRA-094. NMRA-094 is currently in IND-enabling studies to support a Phase 1 clinical trial that we expect to initiate for NMRA-094 in LAT-OSA.

NMRA-CK1d is a CK1d inhibitor program that we intend to develop for amyotrophic lateral sclerosis (ALS). CK1d is a kinase that has been identified as a proximal upstream regulator of TDP-43 phosphorylation, a key driver of TDP-43-driven pathology in approximately 95% of sporadic ALS cases. There is also genetic evidence linking TDP-43 to both familial and sporadic ALS. We are generating Precision Phenotypes for ALS from our integrated multimodal datasets and are in the process of creating a pharmacological fingerprint for our NMRA-CK1d program, which we will then align with a Precision Phenotype for future development. Our NMRA-CK1d program is in the discovery phase of development, and we may seek to identify other potential Precision Phenotypes associated with TDP-43-driven pathologies beyond ALS.

NMRA-GRIN2A is a GRIN2A positive allosteric modulator program designed to be selective for the GluN2A receptor subunit of the N-methyl-D-aspartate (NMDA) receptor that we intend to develop for the treatment of schizophrenia. Recent breakthroughs in psychiatric genetic studies have provided genetic evidence

in support of the role of GRIN2A in schizophrenia. Furthermore, human studies suggest NMDA receptor antagonists (e.g., ketamine) lead to a schizophrenia-like syndrome, which provides compelling evidence for this target. We are generating Precision Phenotypes for schizophrenia from our integrated multimodal datasets and are in the process of creating a pharmacological fingerprint for our NMRA-GRIN2A program, which we will then align with a Precision Phenotype for future development. Our NMRA-GRIN2A program is in the discovery phase of development.

NMRA-GRIN2B is a GRIN2B negative allosteric modulator program designed to be selective for the GluN2B receptor subunit of the NMDA receptor that we intend to develop for subpopulations of patients with MDD. Non-selective antagonism of the NMDA receptor is a clinically validated approach for a subpopulation of MDD, as evidenced by the approval of SPRAVATO (esketamine). Previous GRIN2B-selective approaches have inferred the same clinical efficacy as non-selective agents, but with less risk of dissociative side effects. We are generating Precision Phenotypes for MDD from our integrated multimodal datasets which we will then align with the pharmacological fingerprint for our NMRA-GRIN2B program to define a Precision Phenotype for future development. Our NMRA-GRIN2B program is in the discovery phase of development.

NMRA-NLRP3 is an inhibitor program focused on targeting the NLRP3 inflammasome for the treatment of certain neurodegenerative conditions. The NLRP3 inflammasome can be activated in brain microglia and other cell types by a range of proteins linked to neurodegeneration, including alpha-synuclein, which suggests the inflammasome may have a mechanistic role in Parkinson's disease (PD). We are generating Precision Phenotypes for PD from our integrated multimodal datasets, which we will then align with the pharmacological fingerprint for our NMRA-NLRP3 program to define a Precision Phenotype for future development. Our NMRA-NLRP3 program is in the discovery phase of development.

NMRA-GCase is an activator program focused on elevating the activity of the enzyme glucocerebrocidase (GCase) that we intend to develop for the treatment of PD. Mutations in the GBA gene, which codes for the enzyme GCase, are the single largest genetic risk factor for PD. GCase deficiencies lead to lysosomal storage disorders, and a subgroup of patients with PD have lysosomal dysfunction. Leveraging the work from our NMRA-NLRP3 program, we are generating Precision Phenotypes for PD from our integrated multimodal datasets, which we will then align with the pharmacological fingerprint for our NMRA-GCase program to define a Precision Phenotype for future development. Our NMRA-GCase program is in the discovery phase of development.

Our Team and Investors

Our people are the backbone of the company and our most important asset. We have assembled a diverse team of experienced company builders, leading neuroscience drug developers and data scientists, complemented by world-class scientific and technical advisors and a board of directors and investors. This group shares a long-term vision to position us to execute on our mission to build a "precision neuroscience" company that is fundamentally shifting the approach to discovering and developing therapeutics for brain diseases.

- **Experienced Company Builders.** We have multiple individuals with experience building disruptive biotechnology companies. Our Co-Founder, Chief Executive Officer and Chairman of our board of directors, Paul Berns, is a Managing Director at ARCH Venture Partners and was previously the President, Chief Executive Officer and Chairman of the Board of Anacor Pharmaceuticals, acquired by Pfizer in 2016. Our President and Chief Operating Officer, Lori Lyons-Williams, previously served as Chief Commercial Officer at Dermira, acquired by Eli Lilly in 2020. Carol Suh, our Co-Founder and Vice President of Business Development, is a Partner at ARCH Venture Partners and has built a number of biotechnology companies. Dr. Joshua Pinto serves as our Chief Financial Officer and has, from his time as an investment banker, experience advising leading biotechnology companies across their life cycles at Credit Suisse.

- **Leading Neuroscience Drug Developers.** Our scientific leadership team includes world-class scientists with extensive neuroscience drug development experience. Dr. John Dunlop, our Chief Scientific Officer, previously served as Vice President at Amgen Inc. (Amgen), where he led the neuroscience research program, and prior to that was the Vice President and Head of Neuroscience at AstraZeneca and Pfizer. Our Chief Medical Officer, Dr. Jane Tiller held several positions at Bristol Myers Squibb including Vice President of Global Medical for Neuroscience, Virology & Immunoscience. Prior to that, Dr. Tiller served as Vice President of Neuroscience and Pain at Cephalon. Dr. Nick Brandon, our Chief Research Officer, previously served as Chief Scientist of AstraZeneca's Neuroscience Innovative Medicines and Early Development Division, as well as Head of Psychiatry and Behavioral Disorders in Pfizer's Neuroscience Research Unit.
- **Expert Data Scientists.** Our Chief Data Sciences Officer, Dr. John Reynders, leads our team of data scientists. Dr. Reynders is an experienced data scientist with over two decades of experience in computational science and its integration in the drug development process. He has served as Vice President of Data Science, Genomics and Bioinformatics at Alexion Pharmaceuticals, Founding Chief Information Officer at Moderna Therapeutics and Head of Neuroscience Biomarkers and Integrative Solutions at Johnson & Johnson. Our Vice President, Head of Data Sciences, Dr. Andrew Jaffe, is a leader in the field of computational neurogenetics and was previously an associate professor at Johns Hopkins University.
- **Scientific and Technical Advisory Boards.** We have built a scientific advisory board with research and drug development expertise spanning molecular genetics, neurobiology, molecular cell biology, neural circuitry, medicinal chemistry, translational medicine and the development of statistical methodologies across a broad spectrum of neuropsychiatric disorders and neurodegenerative diseases. We have also established a technical advisory board with expertise that includes computational and cognitive neuroscience, brain behavior mapping, the identification of biomarkers and treatment response, and the application of data science, AI/ML and digital tools to the development and delivery of therapeutics.
- **Board of Directors and Investors with Shared Long-Term Vision.** Our board of directors is comprised of renowned company builders, operators, leaders, scientists, drug developers and investors with experience across a diverse array of companies. We have raised over $500 million of capital as of September 30, 2021. We are supported by a group of leading institutional investors and our strategic collaborator, Amgen, who share our vision of building a groundbreaking, precision neuroscience company.

Our Strategy

We are taking a fundamentally different approach to the way treatments for brain diseases are developed across neuropsychiatric disorders and neurodegenerative diseases. Our mission is to usher in a new era of precision neuroscience to transform care for patients and families affected by these diseases. The key components of our business strategy to deliver on our mission are to:

- **Build a leading global precision neuroscience company to revolutionize the treatment of brain diseases.**
- **Create a dynamic encyclopedia of Precision Phenotypes across neuropsychiatric disorders and neurodegenerative diseases, which will serve as a proprietary roadmap for therapeutic application.**
- **Build an industry-leading pipeline of precision neuroscience therapeutics.**
- **Continually evaluate strategic external opportunities to maximize our patient impact.**

- **Further enhance our intellectual property portfolio to protect our precision neuroscience platform by covering our molecules, AI/ML methods and Precision Phenotypes.**

Our company has been purpose-built at scale to achieve our ambitious mission of changing the paradigm for developing treatments for diseases of the brain. We intend to continue to invest at scale in our platform, our people and our programs to achieve our goal of building a global, fully integrated precision neuroscience company.

Risks Associated with Our Business

Our business is subject to a number of risks of which you should be aware before making a decision to invest in our common stock. These risks are more fully described in the section titled "Risk Factors" immediately following this prospectus summary. These risks include, among others, the following:

- We are a clinical-stage biotechnology company and have incurred significant losses since our inception, and we expect to incur losses for the foreseeable future. We have no products approved for commercial sale and may never achieve or maintain profitability.
- Our substantial contingent consideration and related obligations from our acquisitions of assets and license and collaboration agreements may result in dilution to our stockholders, may be a drain on our cash resources, or may cause us to incur debt obligations to satisfy the payment obligations.
- Our limited operating history may make it difficult to evaluate our prospects and likelihood of success.
- Even if this offering is successful, we will require additional funding in order to finance operations. If we are unable to raise capital when needed, or on acceptable terms, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.
- If we are unable to successfully identify, develop and commercialize any product candidates, or experience significant delays in doing so, our business, financial condition and results of operations will be materially adversely affected.
- We were founded with a mission to pioneer a new era of precision medicines for the treatment of neuropsychiatric disorders and neurodegenerative diseases, a field that has seen very limited success in drug development. The ability to successfully develop drugs in this field is extremely difficult and is subject to a number of unique challenges.
- Our precision neuroscience platform is based on a novel approach and unique technologies that collectively are unproven and may never prove to be successful or only provide varying degrees of success, including the ability to consistently identify and match target or distinct patient populations with precision medicines.
- We have invested and expect to continue to invest in acquiring product candidates, technologies and assets, as well as research and development efforts that further enhance our product pipeline and precision neuroscience platform. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.
- We have experienced rapid growth since our inception in November 2019, and expect to continue to grow in the future. If we fail to effectively manage our growth, we may not be able to execute on our business objectives.
- Our ability to develop data driven, precision neuroscience platform and products and our future growth depends on attracting, hiring and retaining our key personnel and recruiting additional qualified personnel.

- We may not realize the benefits of technologies that we have acquired, or will acquire in the future, or other strategic transactions that we have or will consummate.
- We operate in highly competitive and rapidly changing industries, which may result in others discovering, developing or commercializing competing products before or more successfully than we do.
- Preclinical and clinical drug development is a lengthy and expensive process, with an uncertain outcome. Our preclinical and clinical programs have and may experience delays or may never advance, which would adversely affect ability to obtain regulatory approvals or commercialize our product candidates on a timely basis or at all, which could have an adverse effect on our business.
- The development and commercialization of drug products is subject to extensive regulation, and the regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time-consuming, and inherently unpredictable. If we are ultimately unable to obtain regulatory approval for our product candidates on a timely basis or at all, our business will be substantially harmed.
- We depend on intellectual property licensed from third parties and we are party to in-license agreements under which we acquired rights to use, develop, manufacture and/or commercialize certain of our proprietary technologies and product candidates. If we breach our obligations under these agreements or if any of these agreements is terminated, or otherwise experience disruptions to our business relationships with our licensors, we may be required to pay damages, lose our rights to such intellectual property and technology, or both, which would harm our business.

Corporate and Other Information

We were founded in November 2019 as a Delaware corporation under the name RBNC Therapeutics, Inc. We changed our name to Neumora Therapeutics, Inc. in October 2021. Our principal executive offices are located at 65 Grove Street, Watertown, Massachusetts 02472, and our telephone number is (857) 760-0900.

Our website address is www.neumoratx.com. The information on, or that can be accessed through, our website is not part of this prospectus and is not incorporated by reference herein. We have included our website address as an inactive textual reference only.

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We are an “emerging growth company,” as defined in the Jumpstart Our Business Startups Act of 2012 (the JOBS Act). We will remain an emerging growth company until the earliest of: (i) the last day of the fiscal year following the fifth anniversary of the consummation of this offering; (ii) the last day of the fiscal year in which we have total annual gross revenue of at least $1.07 billion; (iii) the last day of the fiscal year in which we are deemed to be a “large accelerated filer” as defined in Rule 12b-2 under the Securities Exchange Act of 1934, as amended (the Exchange Act), which would occur if the market value of our common stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year; or (iv) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period. An emerging growth company may take advantage of specified reduced reporting requirements and is relieved of certain other significant requirements that are otherwise generally applicable to public companies. As an emerging growth company:

- we will present in this prospectus only two years of audited annual financial statements, plus any required unaudited financial statements, and related management’s discussion and analysis of financial condition and results of operations;

- we will avail ourselves of the exemption from the requirement to obtain an attestation and report from our independent registered public accounting firm on the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002;
- we will provide less extensive disclosure about our executive compensation arrangements; and
- we will not require non-binding, advisory stockholder votes on executive compensation or golden parachute arrangements.

In addition, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This provision allows an emerging growth company to delay the adoption of some accounting standards until those standards would otherwise apply to private companies. We have elected to use the extended transition period for any other new or revised accounting standards during the period in which we remain an emerging growth company; however, we have and may adopt certain new or revised accounting standards early.

We are also a "smaller reporting company," as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as the market value of our voting and non-voting common stock held by non-affiliates is less than $250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than $100.0 million during the most recently completed fiscal year and the market value of our voting and non-voting common stock held by non-affiliates is less than $700.0 million measured on the last business day of our second fiscal quarter.

As a result, the information in this prospectus and that we provide to our investors in the future may be different than what you might receive from other public reporting companies.

THE OFFERING

Common stock offered by us	shares.
Option to purchase additional shares of common stock	shares.
Common stock to be outstanding immediately after this offering	shares (or shares if the underwriters exercise their option to purchase additional shares in full).
Use of proceeds	We estimate that the net proceeds to us from this offering will be approximately $ million (or approximately $ million if the underwriters exercise their option to purchase additional shares in full) assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

We currently intend to use the net proceeds from this offering, together with our existing cash to fund the clinical and preclinical development of our current programs, to advance our precision neuroscience platform, to fund research and development activities for additional programs, and for working capital and other general corporate purposes. We may also use a portion of the net proceeds to in-license, acquire, or invest in, complementary technologies, assets, or intellectual property. We regularly evaluate strategic opportunities; however, we have no current commitments to enter into any such license arrangements or acquisition agreements or to make any such investments. See the section titled “Use of Proceeds.”

Risk factors	See the section titled “Risk Factors” and other information included in this prospectus for a discussion of factors you should carefully consider before deciding whether to invest in our common stock.
Proposed Nasdaq trading symbol	“NMRA”

Unless we specifically state otherwise or the context otherwise requires, the number of shares of our common stock to be outstanding after this offering is based on shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all of our shares of convertible preferred stock outstanding as of September 30, 2021 into an aggregate of shares of our common stock immediately prior to the completion of this offering) and excludes:

- shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2021, with a weighted-average exercise price of $ per share;
- shares of our common stock issuable upon the exercise of stock options granted subsequent to September 30, 2021, with a weighted-average exercise price of $ per share;
- shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2021 to purchase shares of our Series A-1 convertible preferred stock with a weighted-average exercise price of $ per share;
- shares of our common stock reserved for future issuance under our 2020 Equity Incentive Plan (the 2020 Plan) as of September 30, 2021;

- shares of our common stock reserved for future issuance under the 2015 BlackThorn Therapeutics, Inc. Equity Incentive Plan (the 2015 Plan), which we assumed and have subsequently suspended in connection with the closing of our acquisition of BlackThorn;
- shares of our common stock reserved for future issuance under the 2022 Incentive Award Plan (the 2022 Plan), which will become effective on the date immediately prior to the date our registration statement relating to this offering becomes effective, as well as any future increases in the number of shares of common stock reserved for issuance under the 2022 Plan; and
- shares of our common stock reserved for future issuance under our Employee Stock Purchase Plan (the ESPP), which will become effective on the date immediately prior to the date our registration statement relating to this offering becomes effective, as well as any future increases in the number of shares of common stock reserved for issuance under the ESPP.

Unless we specifically state otherwise or the context otherwise requires, this prospectus reflects and assumes the following:

- the adoption, filing and effectiveness of our amended and restated certificate of incorporation immediately prior to the completion of this offering;
- the conversion of all outstanding shares of our convertible preferred stock outstanding into shares of our common stock immediately prior to the completion of this offering;
- no exercise, settlement or termination of outstanding stock options;
- a -for- stock split of our capital stock to be effected prior to the completion of this offering; and
- no exercise by the underwriters of their option to purchase additional shares of our common stock in this offering.

SUMMARY CONSOLIDATED FINANCIAL DATA

The following tables summarize our consolidated financial data for the periods and as of the dates indicated. We have derived the summary consolidated statements of operations and comprehensive loss data for the period from November 22, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020, except for pro forma amounts, from our audited consolidated financial statements and related notes included elsewhere in this prospectus. We have derived the summary consolidated statements of operations and comprehensive loss data for the nine months ended September 30, 2020 and 2021, except for pro forma amounts, and the summary consolidated balance sheet data as of September 30, 2021, except for pro forma amounts, from our unaudited condensed consolidated financial statements and related notes as of and for the nine months ended September 30, 2020 and 2021 included elsewhere in this prospectus. Our unaudited condensed consolidated financial statements were prepared on a basis consistent with our audited consolidated financial statements and include, in our opinion, all adjustments of a normal and recurring nature that are necessary for the fair statement of the financial information set forth in those statements included elsewhere in this prospectus. Our historical results are not necessarily indicative of results that may be expected in the future and our interim results are not necessarily indicative of results that may be expected for the full year. You should read the following summary consolidated financial data together with our audited consolidated financial statements, unaudited condensed consolidated financial statements and the related notes included elsewhere in this prospectus and the information in the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations."

	Period from November 22, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020	Nine Months Ended September 30,	
			2020	2021
			(unaudited)	
	(in thousands, except per share data)			
Consolidated Statements of Operations and Comprehensive Loss Data:				
Operating expenses:				
Research and development	$ —	$ 17,614	$	$
Acquired in-process research and development	—	69,512		
General and administrative	21	8,392		
Total operating expenses	21	95,518		
Loss from operations	(21)	(95,518)		
Other income (expense):				
Loss from change in fair value of convertible promissory notes	—	(3,275)		
Other expenses, net	—	(479)		
Total other income (expense)	—	(3,754)		
Net loss and comprehensive loss	$ (21)	$ (99,272)	$	$
Net loss per share, basic and diluted	$ —	$ (0.97)	$	$
Weighted-average common shares outstanding, basic and diluted	—	101,992		
Pro forma net loss per share, basic and diluted(1)		$		$
Pro forma weighted-average common shares outstanding, basic and diluted(1)				

(1) The unaudited pro forma basic and diluted net loss per share for the year ended December 31, 2020 and for the nine months ended September 30, 2021 has been prepared to give effect to the assumed conversion of outstanding shares of convertible preferred stock to common stock at December 31, 2020 and September 30, 2021, as if the convertible preferred stock was outstanding as of January 1, 2020 or January 1, 2021, irrespective of when the convertible preferred stock was issued.

	As of September 30, 2021		
	Actual	Pro Forma(1)	Pro Forma as Adjusted(2) (3)
	(unaudited, in thousands)		
Consolidated Balance Sheet Data:			
Cash	$	$	$
Working capital(4)			
Total assets			
Convertible preferred stock warrant liability			
Convertible preferred stock			
Additional paid-in capital			
Accumulated deficit			
Total stockholders' (deficit) equity			

(1) The pro forma consolidated balance sheet data gives effect to (i) the conversion of all outstanding shares of our convertible preferred stock into an aggregate of shares of our common stock immediately prior to the completion of this offering, (ii) the related reclassification of our convertible preferred stock aggregate carrying value to permanent equity and (iii) the filing and effectiveness of our amended and restated certificate of incorporation, which will be effective immediately prior to the completion of this offering.

(2) The pro forma as adjusted column in the consolidated balance sheet data table above gives effect to (i) the pro forma adjustments described in footnote (1) above and (ii) the sale and issuance of shares of common stock by us in this offering, at the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us.

(3) Each $1.00 increase or decrease in the assumed initial public offering price of per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, the pro forma as adjusted amount of each of our cash, working capital, total assets, additional paid-in capital and total stockholders' equity by $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, an increase or decrease of 1.0 million shares in the number of shares of common stock offered would increase or decrease, as applicable, each of our cash, working capital, total assets, additional paid-in capital and total stockholders' equity by $ million, assuming the initial public offering price remains the same, after deducting the estimated underwriting discounts and commissions and estimated offering expenses payable by us. The pro forma as adjusted consolidated balance sheet data discussed above is illustrative only and will depend on the actual initial public offering price and other terms of this offering determined at pricing.

(4) We define working capital as current assets less current liabilities. See our audited consolidated financial statements and unaudited condensed consolidated financial statements and related notes thereto included elsewhere in this prospectus for further details regarding our current assets and current liabilities.

RISK FACTORS

Investing in shares of our common stock involves a high degree of risk. You should carefully consider the following risks and uncertainties, together with all of the other information contained in this prospectus, including our audited consolidated financial statements and unaudited condensed consolidated financial statements and related notes included elsewhere in this prospectus, before making an investment decision. The risks described below are not the only ones facing us. Many of the following risks and uncertainties are, and will be, exacerbated by the COVID-19 pandemic and any worsening of the global business and economic environment as a result. The occurrence of any of the following risks, or of additional risks and uncertainties not presently known to us or that we currently believe to be immaterial, could materially and adversely affect our business, financial condition, reputation, or results of operations. In such case, the trading price of shares of our common stock could decline, and you may lose all or part of your investment.

Risks Related to Our Limited Operating History, Financial Condition and Need for Additional Capital

We are a clinical-stage biotechnology company and have incurred significant losses since our inception, and we expect to incur losses for the foreseeable future. We have no products approved for commercial sale and may never achieve or maintain profitability.

We are a clinical-stage biotechnology company with a limited operating history. Biotechnology product development is a highly speculative undertaking and involves a substantial degree of risk. We have incurred significant losses since our inception in November 2019, have no products approved for commercial sale, have not generated any revenue from product sales, have financed our operations principally through private placements of convertible preferred stock and convertible promissory notes and expect to incur significant losses for the foreseeable future. We expect that it will be several years, if ever, before we have a commercialized product and generate revenue from product sales. Our net loss was $99.3 million for the year ended December 31, 2020 and $ for the nine months ended September 30, 2021. As of September 30, 2021, we had an accumulated deficit of $. Our losses have resulted principally from acquired in-process research and development from our acquisitions of assets, expenses incurred in the research and development of our product candidates and buildout of our precision neuroscience platform, as well as from costs associated with our preclinical studies and clinical trials and management and administrative costs and other expenses that we have incurred while building our business infrastructure.

We expect our expenses and operating losses will continue to increase substantially for the foreseeable future as we expand our research and development efforts, expand the capabilities of our precision neuroscience platform, identify and acquire product candidates, complete preclinical studies and initiate additional clinical trials, seek regulatory approval and commercialization of our product candidates and operate as a public company. We anticipate that our expenses will continue to increase substantially as we:

- continue clinical and preclinical development of our current and future product candidates and initiate additional preclinical studies and clinical trials;
- continue to build out and enhance our precision neuroscience platform;
- seek regulatory approval of our current and future product candidates;
- acquire additional product candidates, technologies, multimodal patient datasets and other assets for our business;
- expand our operational, financial and management systems and increase personnel, including personnel to support our clinical and preclinical development, manufacturing and commercialization efforts;
- continue to develop, perfect, maintain and defend our intellectual property portfolio; and
- incur additional legal, accounting or other expenses in operating our business, including the additional costs associated with operating as a public company.

We have devoted a significant portion of our financial resources and efforts to building our organization, acquiring technologies and companies, developing our precision neuroscience platform, research and

development, identifying and developing potential product candidates, executing clinical and preclinical studies, organizing and staffing our company, business planning, establishing, maintaining and protecting our intellectual property portfolio, raising capital and providing general and administrative support for these operations. We are in the early stages of research and development and have not completed development and commercialization of any of our product candidates.

To become and remain profitable, we must succeed in identifying, developing, conducting successful clinical trials, obtaining regulatory approval for, and eventually commercializing, products that generate significant revenue. This will require us to be successful in a range of challenging activities, including completing preclinical studies and clinical trials of our product candidates, continuing to discover and develop additional product candidates, obtaining regulatory and marketing approval for any product candidates that successfully complete clinical trials, accessing manufacturing capacity, establishing marketing capabilities, commercializing and ultimately selling any products. We may never succeed in any or all of these activities and, even if we do, we may never generate revenue that is sufficient to achieve profitability. Even if we do achieve profitability, we may not be able to sustain profitability or meet outside expectations for our profitability. If we are unable to achieve or sustain profitability or to meet outside expectations for our profitability, the price of our common stock could be materially adversely affected.

Because of the numerous risks and uncertainties associated with pharmaceutical and biotechnology products and drug development, we are unable to accurately predict the timing or amount of increased expenses or when, or if, we will be able to achieve profitability. If we are required by the U.S. Food and Drug Administration (FDA) or comparable foreign regulatory authorities to perform studies in addition to those we currently anticipate, or if there are any delays in commencing or completing our clinical trials or the development of any of our product candidates, our expenses could increase and commercial revenue could be further delayed and become more uncertain, which will have a material adverse impact on our business.

Our substantial contingent consideration and related obligations from our acquisitions of assets and license and collaboration agreements may result in dilution to our stockholders, may be a drain on our cash resources, or may cause us to incur debt obligations to satisfy the payment obligations.

In connection with our recent acquisitions of assets, we entered into arrangements whereby the former stockholders of those companies are entitled to substantial contingent consideration payments upon the occurrence of certain events. For example, in connection with our acquisition of BlackThorn Therapeutics, Inc. (BlackThorn), a privately held company, the former BlackThorn stockholders are entitled to contingent consideration (i) with respect to NMRA-140, in the form of development and regulatory approval milestones of up to an aggregate amount of $365.0 million, including the potential for a milestone payment of $75.0 million upon completion of the Phase 2a clinical trial of NMRA-140 if certain success criteria are achieved, and sales-based milestones of up to an aggregate amount of $450.0 million and (ii) with respect to NMRA-511, in the form of development and regulatory approval milestones of up to an aggregate amount of $100.0 million and sales-based milestones of up to an aggregate amount of $100.0 million (BlackThorn Milestone). With the exception of one development milestone in the amount of $10.0 million that is required to be settled in cash, the remaining BlackThorn Milestone payments may be settled in cash or shares of our equity, or a combination of both, at our sole discretion. In connection with the BlackThorn acquisition, we also became obligated under its license agreement with The Scripps Research Institute (TSRI) for, among other obligations, development and regulatory milestone payments of up to $1.5 million in aggregate for the first product from each of the TSRI programs and commercial milestone payments of up to $3.5 million in aggregate for each occurrence.

In addition, in connection with our acquisition of Alairion, Inc. (Alairion), a privately held company, the former Alairion stockholders, are entitled to contingent consideration in the form of future milestone payments of up to $168.5 million upon the achievement of specified development and commercialization events related to the Alairion's in-process research and development related to its drug discovery and optimization technology platform, and up to an aggregate amount of $5.0 million payable to the former holders of Syllable Life Sciences, Inc. (Syllable) upon achievement of certain specified development milestones. At our sole discretion, the

payment of such Alairion contingent consideration and Syllable contingent consideration may be settled in cash or shares of our equity, or a combination of both.

Under the terms of our September 2021 license agreements with Amgen we are obligated to pay Amgen up to an aggregate of $720.0 million in commercial milestone payments upon the achievement of certain sales thresholds and single digit royalties on potential future net sales. In addition, under the collaboration agreement with Amgen, we are committed to making quarterly payments to Amgen for their collaboration activities over the next three years totaling $62.5 million, or $75.0 million if certain progress milestones are achieved.

In order to satisfy our obligations to make these payments, if and when they are triggered, we may need to issue equity or convertible debt securities that may cause dilution to our stockholders, or we may use our existing cash or incur debt obligations to satisfy the payment obligations in cash, which may adversely affect our financial position. In addition, these obligations may impede our ability to raise money in future public offerings of debt or equity securities or to obtain a third party line of credit.

See the sections titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Recent Acquisitions of Assets” and “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Strategic License and Collaboration Agreements” elsewhere in this prospectus for additional information regarding these agreements.

Our limited operating history may make it difficult to evaluate our prospects and likelihood of success.

We are a clinical-stage biotechnology company with a limited operating history upon which you can evaluate our business and prospects. Since our inception in November 2019, we have devoted substantially all of our resources and efforts to building our organization, acquiring technologies and companies, developing our precision neuroscience platform, identifying and developing potential product candidates, executing preclinical studies and clinical trials, organizing and staffing our company, business planning, establishing, maintaining and protecting our intellectual property portfolio, raising capital and providing general and administrative support for these operations. All of our product candidates are in either early clinical development or in preclinical stages of development, and we have not yet demonstrated our ability to successfully complete any late-stage or registration clinical trials, obtain regulatory approvals, manufacture a commercial scale product or arrange for a third party to do so on our behalf or conduct sales and marketing activities necessary for successful product commercialization. Additionally, we expect our financial condition and operating results to continue to fluctuate significantly from period to period due to a variety of factors, many of which are beyond our control. Consequently, any predictions you may make about our future success or viability may not be as accurate as they could be if we had a longer operating history.

In addition, we may encounter unforeseen expenses, difficulties, complications, delays and other known and unknown factors and risks frequently experienced by clinical-stage biotechnology and biopharmaceutical companies in rapidly evolving fields. We also may need to transition from a company with a research focus to a company capable of supporting commercial activities. If we do not adequately address these risks and difficulties or successfully make such a transition, it could have a material adverse effect on our business.

Even if this offering is successful, we will require additional funding in order to finance operations. If we are unable to raise capital when needed, or on acceptable terms, we could be forced to delay, reduce or eliminate our product development programs or commercialization efforts.

Developing biopharmaceutical products, including conducting preclinical studies and clinical trials, is a very time-consuming, expensive and uncertain process that takes years to complete. We expect our expenses to continue to increase in connection with our ongoing activities, particularly as we conduct clinical trials of, and seek regulatory and marketing approval for, our product candidates. Even if one or more of our product candidates is approved for commercial sale, we anticipate incurring significant costs associated with commercializing any approved product candidate. To date, we have funded our operations principally through

private financings. We expect our expenses to increase in connection with our ongoing activities, particularly as we continue the preclinical and clinical development of our product candidates, continue to advance our precision neuroscience platform, commence additional preclinical studies and clinical trials, and continue to identify and develop additional product candidates.

In addition, if we obtain regulatory approval for any of our product candidates, we expect to incur significant commercialization expenses related to product manufacturing, marketing, sales and distribution. Furthermore, upon the completion of this offering, we expect to incur additional costs associated with operating as a public company. Accordingly, we will need to obtain substantial additional funding in connection with our continuing operations. If we are unable to raise capital when needed or on attractive terms, we could be forced to delay, reduce or eliminate our research and development programs or any future regulatory approval or commercialization efforts.

As of September 30, 2021, we had $ of cash. Based upon our current operating plan, we believe that our existing cash as of the date of this prospectus will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months from the date of this offering. In addition, based upon our current operating plan, we believe that the net proceeds from this offering together with our existing cash as of the date of this prospectus, will enable us to fund our operating expenses and capital expenditure requirements through at least the next months from the date of this offering. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. We may also raise additional financing on an opportunistic basis in the future. We expect to continue to expend significant resources for the foreseeable future. In addition, we may seek additional capital due to favorable market conditions or strategic considerations even if we believe we have sufficient funds for our current or future operating plans. Attempting to secure additional financing may divert our management from our day-to-day activities, which may adversely affect our ability to develop our product candidates. Our future capital requirements will depend on many factors, including but not limited to:

- the scope, timing, progress, costs and results of discovery, preclinical development and clinical trials for our current or future product candidates;
- the number of clinical trials required for regulatory approval of our current or future product candidates;
- the effectiveness of our precision neuroscience platform at identifying target patient populations and utilizing the platform to enrich our patient population in our clinical trials;
- the costs, timing and outcome of regulatory review of any of our current or future product candidates;
- the costs associated with acquiring or licensing additional product candidates, technologies or assets, including the timing and amount of any future milestone, royalty or other payments due in connection with such acquisition or license;
- the cost of manufacturing clinical and commercial supplies of our current or future product candidates;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims, including any claims by third parties that we are infringing upon their intellectual property rights;
- our ability to access additional multimodal patient datasets;
- our ability to maintain existing, and establish new, strategic collaborations or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;

- expenses to attract, hire and retain skilled personnel;
- the costs of operating as a public company;
- our ability to establish a commercially viable pricing structure and obtain approval for coverage and adequate reimbursement from third-party and government payers;
- addressing any potential interruptions or delays resulting from factors related to the COVID-19 pandemic;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in business, products and technologies.

Our ability to raise additional funds will depend on financial, economic, political and market conditions and other factors, over which we may have no or limited control. Our ability to raise additional funds may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic. Additional funds may not be available when we need them, on terms that are acceptable to us, or at all. If we fail to obtain necessary capital when needed on acceptable terms, or at all, it could force us to delay, limit, reduce or terminate our product development programs, future commercialization efforts or other operations. Because of the numerous risks and uncertainties associated with research, product development and commercialization of product candidates, we are unable to predict the timing or amount of our working capital requirements or when or if we will be able to achieve or maintain profitability.

Accordingly, we will need to continue to rely on additional financing to achieve our business objectives and adequate additional financing may not be available to us on acceptable terms, or at all.

Raising additional capital may cause dilution to our stockholders, restrict our operations or require us to relinquish rights to our technologies or product candidates.

Until such time, if ever, as we can generate substantial product revenue, we expect to finance our operations with our existing cash, the net proceeds from this offering, any future equity or debt financings and upfront and milestone and royalties payments, if any, received under any future licenses or collaborations. If we raise additional capital through the sale of equity or convertible debt securities, your ownership interest will be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect your rights as a holder of our common stock. In addition, the possibility of such issuance may cause the market price of our common stock to decline. Debt financing, if available, may result in increased fixed payment obligations and involve agreements that include covenants limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, declaring dividends or acquiring, selling or licensing intellectual property rights or assets, which could adversely impact our ability to conduct our business.

If we raise additional funds through collaborations, strategic alliances or marketing, distribution or licensing arrangements with third parties, we may have to relinquish valuable rights to our intellectual property, technologies, future revenue streams or product candidates or grant licenses on terms that may not be favorable to us. We could also be required to seek funds through arrangements with collaborators or others at an earlier stage than otherwise would be desirable. Any of these occurrences may have a material adverse effect on our business, operating results and prospects.

Risks Related to Our Business

If we are unable to successfully identify, develop and commercialize any product candidates, or experience significant delays in doing so, our business, financial condition and results of operations will be materially adversely affected.

Our ability to generate revenue from sales of any of our approved product candidates, which we do not expect will occur for at least the next several years, if ever, depends heavily on the successful identification,

development, regulatory approval and eventual commercialization of any product candidates, which may never occur. We have never generated revenue from sales of any products, and we may never be able to develop, obtain regulatory approval for, or commercialize, a marketable product. All of our product candidates will require significant clinical development, regulatory approval, establishment of sufficient manufacturing supply, including commercial manufacturing supply, and may require us to build a commercial organization and make substantial investment and significant marketing efforts before we generate any revenue from product sales. We are not permitted to market or promote any of our product candidates before we receive regulatory approval from the FDA or comparable foreign regulatory authorities, and we may never receive such regulatory approval for any of our product candidates.

The successful development of our product candidates will depend on several factors, including, but not limited to, the following:

- successful and timely completion of preclinical studies and clinical trials for which the FDA, or any comparable foreign regulatory authority, agree with the design, endpoints, or implementation;
- sufficiency of our financial and other resources to complete the necessary preclinical studies and clinical trials;
- receiving regulatory approvals or authorizations for conducting future clinical trials;
- initiation and successful patient enrollment in, and completion of, clinical trials on a timely basis;
- our ability to demonstrate to the satisfaction of the FDA or any comparable foreign regulatory authority that the applicable product candidate is safe and effective as for its intended uses;
- our ability to demonstrate to the satisfaction of the FDA or any comparable foreign regulatory authority that the applicable product candidate's risk-benefit ratio for its proposed indication is acceptable;
- timely receipt of marketing approvals for our product candidates from applicable regulatory authorities;
- addressing any potential interruptions or delays resulting from factors related to the COVID-19 pandemic;
- the extent of any required post-marketing approval commitments to applicable regulatory authorities; and
- establishing, scaling up and scaling out, either alone or with third-party manufacturers, manufacturing capabilities of clinical supply for our clinical trials and commercial manufacturing, if any of our product candidates are approved.

If we do not achieve one or more of these factors in a timely manner or at all, we could experience significant delays or an inability to successfully develop and commercialize our product candidates, which would materially adversely affect our business, financial condition, and results of operations.

Additionally, clinical or regulatory setbacks to other companies developing similar products or within adjacent fields, including those in gene editing and gene therapy and allogenic cell-based therapies, may impact the clinical development of and regulatory pathway for our current or future product candidates, or may negatively impact the perceptions of value or risk of our technologies.

We were founded with a mission to pioneer a new era of precision medicines for the treatment of neuropsychiatric disorders and neurodegenerative diseases, a field that has seen very limited success in drug development. The ability to successfully develop drugs in this field is extremely difficult and is subject to a number of unique challenges.

Drug development in the field of brain diseases, and neuropsychiatric disorders and neurodegenerative diseases in particular, has seen very limited success historically. We estimate over $110 billion have been spent on neuroscience research and development since 2019 in the United States alone, representing approximately

33% of all disease-specific spending. However, only approximately 12% of all new therapies approved during that time period have been for the treatment of brain diseases. From 2006 to 2015, clinical trial success rates for new drug candidates targeting broad neuropsychiatric disorders and other neuro-related diseases were approximately 6% and 8%, respectively, compared to success rates as high as 26% for certain other indications. Developing a product candidate for treatment of these brain diseases is extremely difficult and subjects us to a number of unique challenges, including obtaining regulatory approval from the FDA and other regulatory authorities who have only a limited set of precedents to rely on. The scientific research that forms the basis of our efforts to develop product candidates with our precision neuroscience platform is still ongoing, and we have not yet generated any clinical evidence to support the feasibility of developing therapeutic treatments based on our platform. Further, we are not aware of any FDA approved therapeutics utilizing the components of this data science based platform.

Given the novelty of our data science platform and technologies, we intend to work closely with the FDA and comparable foreign regulatory authorities to perform the requisite scientific analyses and evaluation of our methods in an effort to obtain regulatory approval for our product candidates; however, due to a lack of comparable experiences, the process of developing our product candidates may be more complex and time-consuming relative to other more well-known approaches to drug development. We cannot be certain that our approach will lead to the development of product candidates that effectively and safely address the underlying brain diseases.

Moreover, given the history of clinical failures in this field, future clinical or regulatory failures by us or others may have result in further negative perception of the likelihood of success in this field, which may significantly and adversely affect the market price of our common stock.

Our precision neuroscience platform is based on a novel approach and unique technologies that are collectively unproven and may never prove to be successful or only provide varying degrees of success, including the ability to consistently identify and match target or distinct patient populations with precision medicines.

Our approach aims to redefine neuroscience research and development. We plan to do this by applying proprietary AI/ML methods to multimodal patient datasets in order to match defined patient populations with targeted therapeutics designed to address the underlying drivers of their disease. We have not yet proven that this strategy can be successful. For example, we may not be able to accurately identify defined patient populations using our platform on a consistent basis, or establish feasible enrollment screening criteria or recruit sufficient eligible patients meeting our screening criteria for our clinical trials to be able to efficiently and effectively conduct a trial of our product candidates.

Additionally, a key element of our strategy is to use and expand our precision data science platform to build a pipeline of product candidates through the translation of Data Biopsy Signatures into clinically relevant homogeneous patient populations, which we refer to as Precision Phenotypes, with actionable data to identify relevant drug targets. We have not yet generated any clinical evidence that drug targets derived from these Precision Phenotypes can be safely or effectively drugged using our product candidates. The potential product candidates that we identify may not be suitable for clinical development, including as a result of being shown to have harmful side effects or other characteristics that indicate that they are unlikely to be approvable or marketable products that will receive marketing approval and achieve market acceptance.

Moreover, while we may successfully define a patient population for a product candidate in a disease, such success may not be replicated across other diseases or product candidates. Given the complexity and variability of brain diseases, our approach may have varying degrees of success.

We have invested and expect to continue to invest in acquiring product candidates, technologies and assets, as well as research and development efforts, that further enhance our product pipeline and precision neuroscience platform. Such investments may affect our operating results, and, if the return on these investments is lower or develops more slowly than we expect, our revenue and operating results may suffer.

We have invested and expect to continue to invest in acquiring potential product candidates to enhance our product pipeline and technologies and assets to advance our precision neuroscience platform. These activities and investments involve significant time, risks, and uncertainties, including the risk that the associated expenses may affect our operating results, that such investments may not generate products that can be successfully developed or technologies that can be effectively integrated into or enhance our precision neuroscience platform, and cause significant drains on capital resources and commit us to substantial financial obligations. While we believe that we must continue to invest a significant amount of time and resources in the development of our product pipeline and precision neuroscience platform, if we do not achieve the benefits anticipated from these investments, or if the achievement of these benefits is delayed, our business, operating results and prospects may be materially adversely affected.

The initiation of the Phase 2a trial of NMRA-140 occurred prior to our acquisition of BlackThorn, and will provide limited evidence to support any conclusion with regard to the precision neuroscience platform and approach we have subsequently developed.

When we acquired BlackThorn in September 2020, BlackThorn had already initiated the Phase 2a trial of NMRA-140, in adult patients with MDD utilizing their specific computational psychiatry and data platform to support patient stratification and objective clinical trial endpoints. Although our approach leverages parts of the platform we acquired from BlackThorn, this trial was initiated prior to the development and implementation of our full precision neuroscience platform and thus before the identification of a Precision Phenotype for evaluation of the activity of NMRA-140. We have modified the trial to increase the target enrollment and added additional digital instrumentation to further augment data generation to support our precision neuroscience approach, and we plan to leverage the genetic, digital and clinical data from this trial to define a Precision Phenotype for future development of NMRA-140. However, because the trial was initiated by BlackThorn prior to the development and application of our Precision Phenotyping approach, the actual data results from the trial will not be reflective of the breadth of our full precision neuroscience platform or provide evidence to support our approach, which may not be fully understood by some investors or market participants, potentially leading to negative effects on our stock price.

We have experienced rapid growth since our inception in November 2019, and expect to continue to grow in the future. If we fail to effectively manage our growth, we may not be able to execute on our business objectives.

We have experienced rapid growth since our inception in November 2019, and expect to continue to grow in the future. As of December 31, 2020, we had 53 full-time employees and, as of September 30, 2021, we had grown to 84 full-time employees. We expect continued growth in the number of our employees and the scope of our operations, particularly as we continue our current and future clinical trials and preclinical studies, initiate and conduct investigational new drug (IND)-enabling studies and build out our clinical operations, regulatory, quality and manufacturing infrastructure. In addition, to headcount growth, we have made a number of acquisitions of assets, and entered into a significant strategic collaboration with Amgen. These activities have added significant complexity to our organization, including a number of clinical and preclinical programs that we are now developing. These programs require significant infrastructure and headcount to effectively prosecute.

To manage our anticipated future growth, we will continue to implement and improve our managerial, operational, and financial systems, expand our facilities, and continue to recruit and train additional qualified personnel. Due to the complexity in managing a company that has scaled very quickly and anticipates continued growth, we may not be able to scale our headcount and operations effectively to manage the expansion of our product pipeline or recruit and train the necessary additional personnel. The expansion of our operations may lead to significant costs and may divert our management and business development resources. Any inability to manage growth could delay the execution of our business plans or disrupt our operations.

In addition, future growth imposes significant added responsibilities on members of management, including: identifying, recruiting, integrating, maintaining, and motivating additional employees; managing our internal development efforts effectively, including the clinical and FDA review process for our product candidates, while complying with our contractual obligations to contractors and other third parties; and improving our operational, financial and management controls, reporting systems and procedures.

We currently rely on certain independent organizations, advisors, and consultants to provide certain services, including strategic, financial, business development, and research and development services, as well as certain aspects of regulatory approval and manufacturing. There can be no assurance that the services of independent organizations, advisors, and consultants will continue to be available to us on a timely basis when needed, or that we can find qualified replacements. In addition, if we are unable to effectively manage our outsourced activities or if the quality or accuracy of the services provided by consultants or contract manufacturing organizations is compromised for any reason, our clinical trials may be extended, delayed, or terminated, and we may not be able to obtain regulatory approval of our product candidates or otherwise advance our business. There can be no assurance that we will be able to manage our existing consultants or find other competent outside contractors and consultants on reasonable terms, or at all.

Our ability to develop our data driven, precision neuroscience platform and products and our future growth depends on attracting, hiring and retaining our key personnel and recruiting additional qualified personnel.

Our success depends upon the continued contributions of our key management, scientific, and data science personnel, many of whom have been instrumental for us and have substantial experience with our data driven, precision neuroscience platform, underlying technologies and related product candidates. Given the specialized nature of our platform and brain diseases, there is an inherent scarcity of experienced personnel in these fields. As we continue developing our product candidates in our pipeline, we will require personnel with medical, scientific, or technical qualifications specific to each program. The loss of key personnel, in particular our senior data scientists and neuroscientists, would delay our research and development activities. Despite our efforts to retain valuable employees, members of our team may terminate their employment with us on short notice. The competition for qualified personnel in the biotechnology and pharmaceutical industries is intense, and our future success depends upon our ability to attract, retain, and motivate highly skilled scientific, technical and managerial employees. We face competition for personnel from other companies, universities, public and private research institutions, and other organizations. If our recruitment and retention efforts are unsuccessful in the future, it may be difficult for us to implement our business strategy, which would have a material adverse effect on our business.

In addition, our research and development programs, data science and clinical operations efforts depend on our ability to attract and retain highly skilled scientists, data scientists, and engineers, particularly in Massachusetts and California. There is powerful competition for skilled personnel in these geographical markets, and we have from time to time experienced, and we expect to continue to experience, difficulty in hiring and retaining employees with appropriate qualifications on acceptable terms, or at all, particularly in the data science field. Many of the companies with which we compete for experienced personnel have greater resources than we do, and any of our employees may terminate their employment with us at any time. If we hire employees from competitors or other companies, their former employers may attempt to assert that these employees or we have breached legal obligations, resulting in a diversion of our time and resources and, potentially, damages. In addition, job candidates and existing employees often consider the value of the stock awards they receive in connection with their employment. If the perceived benefits of our stock awards decline, it may harm our ability to recruit and retain highly skilled employees. If we fail to attract new personnel or fail to retain and motivate our current personnel, our business and future growth prospects would be harmed.

We may not realize the benefits of technologies that we have acquired, or will acquire in the future, or other strategic transactions that we have or will consummate.

Our platform represents an aggregation of innovation and technology from multiple companies and academic institutions, including BlackThorn, Syllable and Alairion as well as The Scripps Research Institute and

Amgen. Further, a key component of our strategy is to acquire and in-license technologies to support the growth of our product pipeline and to enhance our precision neuroscience platform. As such, we actively evaluate various strategic transactions on an ongoing basis. We may acquire other assets, businesses, products or technologies, as well as pursue joint ventures or investments in complementary businesses. The success of our strategic transactions and any future strategic transactions depends on the risks and uncertainties involved including:

- unanticipated liabilities related to acquired companies or joint ventures;
- difficulties integrating acquired personnel, technologies, and operations into our existing business;
- retention of key employees;
- diversion of management time and focus from operating our business to management of acquisition and integration efforts, strategic alliances or joint ventures challenges;
- increases in our expenses and reductions in our cash available for operations and other uses;
- disruption in our relationships with collaborators or suppliers;
- possible write-offs or impairment charges relating to acquired businesses or joint ventures; and
- challenges resulting from the COVID-19 pandemic making it more difficult to integrate acquisitions into our business.

If any of these risks or uncertainties occur, we may not realize the anticipated benefit of any acquisition or strategic transaction. For example, less than one year following the acquisition of Propellex, we terminated and are no longer developing the program we acquired from Propellex. Additionally, foreign acquisitions and joint ventures are subject to additional risks, including those related to integration of operations across different cultures and languages, currency risks, potentially adverse tax consequences of overseas operations and the particular economic, political and regulatory risks associated with specific countries.

Future acquisitions or dispositions could result in potentially dilutive issuances of our equity securities, the incurrence of debt, contingent liabilities or amortization expenses, impairments or write-offs of goodwill or impairments and write-offs of in-process research and development assets, any of which could harm our financial condition.

We have relied on, and in the future may rely on, third-party datasets and databases to build and enhance our precision neuroscience platform data science. If we are not able to access additional data sets or develop enhancements to our precision neuroscience platform, our ability to execute on our strategy may be limited.

Our ability to execute on our data driven drug development strategy depends in large part on our ability to enhance and improve our precision neuroscience platform. As part of this approach, we interrogate public, partnered and proprietary datasets across neuropsychiatric and neurodegenerative diseases, currently encompassing genetic, imaging, EEG, digital and clinical data. We rely on these datasets and data analytics for identifying or validating some of our biomarker-target relationships. The success of our precision neuroscience platform and any enhancement to our platform depends on several factors, including access to and generation of additional multimodal patient datasets, whether public, partnered or proprietary, development of more advanced proprietary machine learning capabilities and increased computational storage and processing capacity. If we are unable to access additional datasets or they are not available on acceptable terms, or if we otherwise unsuccessful in enhancing our platform, we may be limited in our precision neuroscience capabilities and not be able to fully utilize a data driven precision medicine drug development strategy.

In addition, access to public data sets may be limited by governmental or other restrictions, including restrictions on commercial application by government or government sponsored organizations or privacy related restrictions. See the risk factor “We face potential liability related to the privacy of health information we utilize

in the development of product candidates, as well as information we obtain from clinical trials sponsored by us from research institutions and directly from individuals" for additional information on privacy related considerations.

The outbreak of the novel coronavirus disease, COVID-19, could materially and adversely affect our preclinical studies and development, any clinical trials we subsequently commence, and our business, financial condition and results of operations.

In December 2019, the coronavirus disease, COVID-19, was identified in Wuhan, China. Since then, COVID-19 has spread globally. In March 2020, the World Health Organization declared COVID-19 a global pandemic and the United States declared a national emergency with respect to COVID-19. In response to the COVID-19 pandemic, "shelter in place" orders and other public health guidance measures have been implemented across much of the United States, including in the locations of our offices and those of key vendors and partners. As a result of the COVID-19 pandemic, or similar pandemics, and related "shelter in place" orders and other public health guidance measures, we have and may in the future experience disruptions that could materially and adversely impact our preclinical studies and development, any clinical trials we subsequently commence, and our business, financial condition, and results of operations. Potential disruptions to the development of our product candidates include, but are not limited to:

- interruption of key clinical trial activities, such as clinical trial site data monitoring and efficacy and safety data collection, processing and analyses, due to limitations on travel imposed or recommended by federal, state, or local governments, employers and others or interruption of clinical trial subject visits, which may impact the collection and integrity of subject data and clinical study endpoints;
- delays or difficulties in initiating or expanding clinical trials, including delays or difficulties with clinical site initiation and recruiting clinical site investigators and clinical site staff;
- delays or difficulties in enrolling and retaining patients in our clinical trials;
- increased rates of patients withdrawing from our clinical trials following enrollment as a result of contracting COVID-19 or other health conditions or being forced to quarantine;
- interruption of, or delays in receiving, supplies of our product candidates from our contract manufacturing organizations due to staffing shortages, production slowdowns, or stoppages and disruptions in materials and reagents;
- diversion of healthcare resources away from the conduct of clinical trials, including the diversion of hospitals serving as our clinical trial sites and hospital staff supporting the conduct of our clinical trials;
- interruption or delays in the operations of the FDA and comparable foreign regulatory agencies;
- changes in regulations as part of a response to the COVID-19 pandemic which may require us to change the ways in which our clinical trials are conducted, which may result in unexpected costs, or to discontinue the clinical trials altogether;
- delays in receiving approval from local regulatory authorities to initiate our planned clinical trials;
- delays or disruptions in preclinical experiments and IND-enabling studies due to restrictions of on-site staff, limited or no access to animal facilities, ongoing supply chain issues that are impacting supplies of laboratory reagants and unforeseen circumstances at contract research organizations (CROs) and vendors;
- limitations on employee or other resources that would otherwise be focused on the conduct of our and preclinical work, including because of sickness of employees or their families, the desire of employees to avoid travel or contact with large groups of people, an increased reliance on working from home, school closures, or mass transit disruptions;

- delays in necessary interactions with regulators, ethics committees, and other important agencies and contractors due to limitations in employee resources or forced furlough of government or contractor personnel;
- limitations in maintaining our corporate culture that facilitates the transfer of institutional knowledge within our organization and fosters innovation, teamwork, and a focus on execution;
- limitations on employee resources that would otherwise be focused on the conduct of our preclinical studies and clinical trials, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people;
- interruption of, or delays in receiving, supplies of our product candidates from our contract manufacturing organizations due to staffing shortages, production slowdowns or stoppages and disruptions in delivery systems;
- refusal of the FDA or comparable regulatory authorities to accept data from clinical trials in affected geographies; and
- additional delays, difficulties or interruptions as a result of current or future shutdowns due to the COVID-19 pandemic in countries where we or our third-party service providers operate.

To date, the COVID-19 pandemic has delayed patient enrollment in our ongoing clinical trials and may further delay our initiation of preclinical studies and clinical trials, interrupt our supply chain, disrupt regulatory activities or have other adverse effects on our business and operations.

The COVID-19 pandemic continues to rapidly evolve. Although many countries, including certain countries in Europe and the United States, have lifted certain restrictions on travel, rises in new cases have caused certain countries to re-initiate restrictions. The extent to which the outbreak may affect our preclinical studies, clinical trials, business, financial condition and results of operations will depend on future developments, which are highly uncertain and cannot be predicted at this time, such as the ultimate geographic spread of the disease, the duration of the outbreak, travel restrictions and actions to contain the outbreak or treat its impact, such as social distancing and quarantines or lock-downs in the United States and other countries, business closures or business disruptions and the effectiveness of actions taken in the United States and other countries to contain and treat the disease. Additionally, we are unable to predict if a different pandemic could have similar or different impacts on our business, financial condition or share price. Future developments in these and other areas present material uncertainty and risk with respect to our clinical trials, business, financial condition and results of operations.

We operate in highly competitive and rapidly changing industries, which may result in others discovering, developing or commercializing competing products before or more successfully than we do.

The biotechnology and pharmaceutical industries are highly competitive and subject to significant and rapid technological change. Our success is highly dependent on our ability to discover, develop and obtain marketing approval for new and innovative products on a cost-effective basis and to market them successfully. In doing so, we face and will continue to face intense competition from a variety of businesses, including large pharmaceutical and biotechnology companies, academic institutions, government agencies and other public and private research organizations. These organizations may have significantly greater resources than we do and conduct similar research, seek patent protection and establish collaborative arrangements for research, development, manufacturing, and marketing of products that compete with our product candidates. Mergers and acquisitions in the biotechnology and pharmaceutical industries may result in even more resources being concentrated in our competitors. Competition may increase further as a result of advances in the commercial applicability of technologies and greater availability of capital for investment in these industries.

With the proliferation of new drugs and therapies for our target indications, we expect to face increasingly intense competition as new technologies become available. If we fail to stay at the forefront of technological

change, we may be unable to compete effectively. Any product candidates that we successfully develop and commercialize will compete with existing therapies and new therapies that may become available in the future. The highly competitive nature of and rapid technological changes in the biotechnology and pharmaceutical industries could render our product candidates or our technology obsolete, less competitive or uneconomical. Our competitors may, among other things:

- have significantly greater financial, manufacturing, marketing, drug development, technical, and human resources than we do;
- develop and commercialize products that are safer, more effective, less expensive, more convenient or easier to administer, or have fewer or less severe side effects;
- obtain quicker regulatory approval;
- establish superior proprietary positions covering our products and technologies;
- implement more effective approaches to sales and marketing; or
- form more advantageous strategic alliances.

Should any of these factors occur, our business, financial condition, and results of operations could be materially adversely affected.

In addition, any collaborators may decide to market and sell products that compete with the product candidates that we have agreed to license to them, and any competition by our collaborators could also have a material adverse effect on our future business, financial condition, and results of operations.

Smaller and other early stage companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. These third parties compete with us in recruiting and retaining qualified scientific and management personnel, establishing clinical trial sites and patient registration for clinical trials, as well as in acquiring technologies complementary to, or necessary for, our programs.

We may expend our limited resources to pursue a particular product candidate or indication and fail to capitalize on product candidates or indications that may be more profitable or for which there is a greater likelihood of success.

Because we have limited financial and managerial resources, we focus on research programs, therapeutic platforms, and product candidates that we identify for specific indications. Additionally, we have contractual commitments under the agreements we acquired for various product candidate assets, as well as our license and collaboration agreements to use commercially reasonable efforts to develop certain programs and, thus, do not have unilateral discretion to vary from such agreed to efforts. In addition, we have contractual commitments to conduct certain development plans, and thus may not have discretion to modify such development plans, including clinical trial designs, without agreement from our collaboration partner. As a result, we may forego or delay pursuit of opportunities with other therapeutic platforms or product candidates or for other indications that later prove to have greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs, therapeutic platforms, and product candidates for specific indications may not yield any commercially viable products. If we do not accurately evaluate the commercial potential or target market for a particular product candidate, we may relinquish valuable rights to that product candidate through collaboration, licensing, or other royalty arrangements in cases in which it would have been more advantageous for us to retain sole development and commercialization rights.

Defects or disruptions in our precision neuroscience platform could result in diminishing our value and prospects.

Our precision neuroscience platform depends upon the continuous, effective, and reliable operation of our software, hardware, databases, and related tools and functions and the integrity of our data. Our proprietary software tools, hardware, and datasets are inherently complex and may contain defects or errors. Errors may result from the interface of our proprietary software and hardware tools with our data or third-party systems and data, which we did not develop. The risk of errors is particularly significant when new software or hardware is first introduced or when new versions or enhancements of existing software or hardware are implemented. We have, from time to time, found defects in our software and hardware, and new errors in our existing software and hardware may be detected in the future. Any errors, defects, disruptions, or other performance problems with our software, hardware, or datasets could hurt our ability to gather valuable insights that drive our drug discoveries. Furthermore, our platform may produce therapeutic application insights that are inaccurate which could result in a material adverse effect on our ability to discover new product candidates. Such discovery is dependent on the integrity and completeness of our data. The occurrence of any of these events could result in diminishing value of our platform and data and have a material adverse effect on our business, operating results and prospects.

We rely upon third-party providers of cloud-based infrastructure to host our platforms. Any disruption in the operations of these third-party providers, limitations on capacity, or interference with our use could adversely affect our business, financial condition, and results of operations.

We outsource substantially all of the technological infrastructure relating to our hosted platform to third-party hosting services, such as Amazon Web Services (AWS). We have no control over any of these third parties, and while we attempt to reduce risk by minimizing reliance on any single third party or its operations, we cannot guarantee that such third-party providers will not experience system interruptions, outages or delays, or deterioration in their performance. We need to be able to access our computational platform at any time, without interruption or degradation of performance. Our hosted platform depends on protecting the virtual cloud infrastructure hosted by third-party hosting services by maintaining its configuration, architecture, features, and interconnection specifications, as well as protecting the information stored in these virtual data centers, which is transmitted by third-party Internet service providers. We have experienced, and expect that in the future we may again experience interruptions, delays and outages in service and availability from time to time due to a variety of factors, including infrastructure changes, human or software errors, website hosting disruptions and capacity constraints. Any limitation on the capacity of our third-party hosting services could adversely affect our business, financial condition, and results of operations. In addition, any incident affecting our third-party hosting services' infrastructure that may be caused by cyber-attacks, natural disasters, fire, flood, severe storm, earthquake, power loss, telecommunications failures, terrorist or other attacks, and other disruptive events beyond our control could negatively affect our cloud-based solutions. A prolonged service disruption affecting our cloud-based solutions could damage our reputation or otherwise harm our business. We may also incur significant costs for using alternative equipment or taking other actions in preparation for, or in reaction to, events that damage the third-party hosting services we use.

In the event that our service agreements with our third-party hosting services are terminated, or there is a lapse of service, elimination of services or features that we utilize, interruption of internet service provider connectivity, or damage to such facilities, we could experience interruptions in access to the our platform as well as significant delays and additional expense in arranging or creating new facilities and services and/or re-architecting our hosted software solutions for deployment on a different cloud infrastructure service provider, which could adversely affect our business, financial condition, and results of operations.

If our security measures are breached or unauthorized access to our other data is otherwise obtained, our data may be perceived as not being secure and we may incur significant liabilities.

We use a set of proprietary tools to generate, analyze, and derive novel insights from our data. As a result, unauthorized access to or security breaches of our data, as a result of third-party action, employee or contractor

error, malfeasance, or otherwise could result in the loss or corruption of, or other damage to information, claims and litigation, indemnity obligations, damage to our reputation, and other liability. Our collaborators and other third parties we work with may also suffer similar security breaches of data that we rely on. Because the techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we and those we collaborate with may be unable to anticipate these techniques or implement adequate preventative measures. In addition, if our employees or contractors fail to adhere to practices we have established to maintain a firewall between our internal drug discovery team and our teams that work with external individuals, including our collaborators, or if the technical solutions we have adopted to maintain the firewall malfunction, our collaborators may lose confidence in our ability to maintain the confidentiality of their intellectual property, we may have trouble attracting new collaborators, we may be subject to breach of contract claims by our collaborators, and we may suffer reputational and other harm as a result. Any or all of these issues could result in reputational damage or subject us to third-party lawsuits or other action or liability, which could adversely affect our operating results. Our insurance may not be adequate to cover losses associated with such events, and in any case, such insurance may not cover all of the types of costs, expenses, and losses we could incur to respond to and remediate a security breach. For more information see "Risk Factors—Our business and operations would suffer in the event of computer system failures, cyber-attacks or deficiencies in our or third parties' cyber security."

Our solutions utilize third-party open source software, and any failure to comply with the terms of one or more of these open source software licenses could adversely affect our business, subject us to litigation, or create potential liability.

Our solutions include software licensed by third parties under any one or more open source licenses, and we expect to continue to incorporate open source software in our solutions in the future. Moreover, we cannot ensure that we have effectively monitored our use of open source software, or validated the quality or source of such software, or that we are in compliance with the terms of the applicable open source licenses or our current policies and procedures. There have been claims against companies that use open source software in their products and services asserting that the use of such open source software infringes the claimants' intellectual property rights. As a result, we could be subject to suits by third parties claiming that what we believe to be licensed open source software infringes such third parties' intellectual property rights. Additionally, if an author or other third party that distributes such open source software were to allege that we had not complied with the conditions of one or more of these licenses, we could be required to incur significant legal expenses defending against such allegations and could be subject to significant damages and required to comply with onerous conditions or restrictions on these solutions, which could disrupt the distribution and sale of these solutions. Litigation could be costly for us to defend, have a negative effect on our business, financial condition, and results of operations, or require us to devote additional research and development resources to change our solutions. Furthermore, these third-party open source providers could experience service outages, data loss, privacy breaches, cyber-attacks, and other events relating to the applications and services they provide that could diminish the utility of these services and which could harm our business as a result.

Use of open source software may entail greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or other contractual protections regarding infringement claims or the quality of the code, including with respect to security vulnerabilities where open source software may be more susceptible. In addition, certain open source licenses require that source code for software programs that interact with such open source software be made available to the public at no cost and that any modifications or derivative works to such open source software continue to be licensed under the same terms as the open source software license. The terms of various open source licenses to which we are subject have not been interpreted by courts in the relevant jurisdictions, and there is a risk that such licenses could be construed in a manner that imposes unanticipated conditions or restrictions on our ability to market or provide our software and data. By the terms of certain open source licenses, we could be required to release the source code of our proprietary software, and to make our proprietary software available under open source licenses, if we combine our proprietary software with open source software in a certain manner. In the event that portions of our proprietary software are

determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our solutions, or otherwise be limited in the licensing of our solutions, each of which could reduce or eliminate the value of our solutions. Disclosing our proprietary source code could allow our competitors to create similar products with lower development effort and time and ultimately could result in a loss of sales. Furthermore, any such re-engineering or other remedial efforts could require significant additional research and development resources, and we may not be able to successfully complete any such re-engineering or other remedial efforts. Any of these events could create liability for us and damage our reputation, which could have a material adverse effect on our revenue, business, results of operations, and financial condition and the market price of our shares.

Risks Related to the Development and Clinical Testing of Our Product Candidates

Preclinical and clinical drug development is a lengthy and expensive process, with an uncertain outcome. Our preclinical and clinical programs have and may experience delays or may never advance, which would adversely affect ability to obtain regulatory approvals or commercialize our product candidates on a timely basis or at all, which could have an adverse effect on our business.

In order to obtain FDA approval to market our product candidates, we must demonstrate the safety and efficacy of our product candidates in humans to the satisfaction of the FDA. To meet these requirements, we will have to conduct adequate and well-controlled clinical trials. Clinical testing is expensive, time-consuming and subject to uncertainty. Conducting preclinical testing and clinical trials represents a lengthy, time-consuming and expensive process. The length of time may vary substantially according to the type, complexity and novelty of the program, and often can be several years or more per program. Delays associated with programs for which we are directly conducting preclinical studies may cause us to incur additional operating expenses. The commencement and rate of completion of preclinical studies and clinical trials for a product candidate may be delayed by many factors, including, but not limited to:

- inability to generate sufficient preclinical or other *in vivo* or *in vitro* data to support the initiation of clinical studies;
- establishing the approvals needed to conduct preclinical studies in animals (e.g., Institutional Animal Care and Use Committee (IACUC) approval);
- timely completion of preclinical laboratory tests, animal studies and formulation studies in accordance with FDA's Good Laboratory Practice (GLP) requirements and other applicable regulations;
- approval by an independent Institutional Review Board (IRB) ethics committee at each clinical site before each trial may be initiated;
- delays in reaching a consensus with regulatory agencies on study design and obtaining regulatory authorization to commence clinical trials; delays in reaching agreement on acceptable terms with prospective CROs, and clinical trial sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical trial sites;
- delays in identifying, recruiting and training suitable clinical investigators;
- delays in recruiting suitable patients to participate in our clinical trials;
- delays in manufacturing, testing, releasing, validating or importing/exporting sufficient stable quantities of our product candidates for use in clinical trials or the inability to do any of the foregoing;
- insufficient or inadequate supply or quality of product candidates or other materials necessary for use in clinical trials, or delays in sufficiently developing, characterizing or controlling a manufacturing process suitable for clinical trials;
- imposition of a temporary or permanent clinical hold by regulatory authorities;

- developments on trials conducted by competitors for related technology that raises FDA or foreign regulatory authority concerns about risk to patients of the technology broadly, or if the FDA or a foreign regulatory authority finds that the investigational protocol or plan is clearly deficient to meet its stated objectives;
- delays in recruiting, screening and enrolling patients and delays caused by patients withdrawing from clinical trials or failing to return for post-treatment follow-up;
- difficulty collaborating with patient groups and investigators;
- failure by our CROs, other third parties or us to adhere to clinical trial protocols; failure to perform in accordance with the FDA's or any other regulatory authority's good clinical practice (GCP) requirements, or applicable regulatory guidelines in other countries;
- occurrence of adverse events associated with the product candidate that are viewed to outweigh its potential benefits, or occurrence of adverse events in trial of the same class of agents conducted by other companies;
- changes to the clinical trial protocols;
- clinical sites deviating from trial protocol or dropping out of a trial;
- changes in regulatory requirements and guidance that require amending or submitting new clinical protocols;
- changes in the standard of care on which a clinical development plan was based, which may require new or additional trials;
- selection of clinical endpoints that require prolonged periods of observation or analyses of resulting data;
- the cost of clinical trials of our product candidates being greater than we anticipate;
- clinical trials of our product candidates producing negative or inconclusive results, which may result in our deciding, or regulators requiring us, to conduct additional clinical trials or abandon development of such product candidates;
- transfer of manufacturing processes to larger-scale facilities operated by a contract manufacturing organization (CMO) and delays or failure by our CMOs or us to make any necessary changes to such manufacturing process; and
- third parties being unwilling or unable to satisfy their contractual obligations to us.

In addition, disruptions caused by the COVID-19 pandemic may increase the likelihood that we encounter such difficulties or delays in initiating, enrolling, conducting or completing our planned and ongoing preclinical studies and clinical trials.

Clinical trials must be conducted in accordance with the FDA and other applicable regulatory authorities' legal requirements, regulations or guidelines, and are subject to oversight by these governmental agencies and Ethics Committees or IRBs at the medical institutions where the clinical trials are conducted. We could also encounter delays if a clinical trial is suspended or terminated by us, by the IRBs of the institutions in which such trials are being conducted, by a Data Safety Monitoring Board for such trial or by the FDA or comparable foreign regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical trial in accordance with regulatory requirements or our clinical protocols, inspection of the clinical trial operations or trial site by the FDA or comparable foreign regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using a drug, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical trial. For example, nonclinical safety pharmacology studies of NMRA-511 indicate that the dose limiting toxicities were CNS observations including tremor and convulsions,

which led to a partial clinical hold on our IND that was removed when we amended the protocol to include tremors as a stopping criteria. In addition, changes in regulatory requirements and policies may occur, and we may need to amend clinical trial protocols to comply with these changes. Amendments may require us to resubmit our clinical trial protocols to IRBs for reexamination, which may impact the costs, timing or successful completion of a clinical trial.

Further, conducting clinical trials in foreign countries, as we may do for our product candidates, presents additional risks that may delay completion of our clinical trials. These risks include the failure of enrolled patients in foreign countries to adhere to clinical protocol as a result of differences in healthcare services or cultural customs, managing additional administrative burdens associated with foreign regulatory schemes, as well as political and economic risks relevant to such foreign countries.

Moreover, principal investigators for our clinical trials may serve as scientific advisors or consultants to us from time to time and receive compensation in connection with such services. Under certain circumstances, we may be required to report some of these relationships to the FDA or comparable foreign regulatory authorities. The FDA or comparable foreign regulatory authority may conclude that a financial relationship between us and a principal investigator has created a conflict of interest or otherwise affected interpretation of the study. The FDA or comparable foreign regulatory authority may therefore question the integrity of the data generated at the applicable clinical trial site and the utility of the clinical trial itself may be jeopardized. This could result in a delay in approval, or rejection, of our marketing applications by the FDA or comparable foreign regulatory authority, as the case may be, and may ultimately lead to the denial of marketing approval of one or more of our product candidates.

Delays in the completion of any preclinical studies or clinical trials of our product candidates will increase our costs, slow down our product candidate development and approval process and delay or potentially jeopardize our ability to commence product sales and generate product revenue. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates. Any delays to our preclinical studies or clinical trials that occur as a result could shorten any period during which we may have the exclusive right to commercialize our product candidates and our competitors may be able to bring products to market before we do, and the commercial viability of our product candidates could be significantly reduced. Any of these occurrences may harm our business, financial condition and prospects significantly.

Results of preclinical studies or clinical trials of any product candidates may not be predictive of the results of future preclinical studies or clinical trials.

To obtain the requisite regulatory approvals to market and sell any of our product candidates, we or any collaborator for such product candidate must demonstrate through extensive preclinical studies and clinical trials that the product candidate is safe and effective in humans. Before an IND can be submitted to the FDA and become effective, which is a prerequisite for conducting clinical trials on human subjects, a product candidate must successfully progress through extensive preclinical studies, which include preclinical laboratory testing, animal studies, and formulation studies in accordance with GLP. We cannot be certain of the timely completion or outcome of any preclinical studies and cannot predict if the FDA or comparable regulatory authorities will allow our proposed clinical programs to proceed or if the outcome of our preclinical studies will ultimately support further development of our programs. We also cannot be sure that we will be able to submit INDs or similar applications with respect to our product candidates on the timelines we expect, if at all, and we cannot be sure that submission of IND or similar applications will result in the FDA or other regulatory authorities allowing clinical trials to begin.

Moreover, success in preclinical studies or early clinical trials does not ensure that later preclinical studies or clinical trials will be successful. A number of companies in the biotechnology and pharmaceutical industries have suffered significant setbacks in clinical trials, even after positive results in earlier preclinical studies. These

setbacks have been caused by, among other things, preclinical findings made while clinical trials were underway and safety or efficacy observations made in clinical trials, including previously unreported adverse events. The design of a clinical trial can determine whether its results will support approval of a product, and flaws in the design of a clinical trial may not become apparent until the clinical trial is well advanced. In addition, preclinical and clinical data are often susceptible to varying interpretations and analyses. Notwithstanding any potential promising results in earlier studies, we cannot be certain that we will not face similar setbacks. In addition, the results of our preclinical animal studies, including our non-human primate studies, may not be predictive of the results of outcomes in subsequent clinical trials on human subjects. Product candidates in clinical trials may fail to show the desired pharmacological properties or safety and efficacy traits despite having progressed through preclinical studies.

If we fail to receive positive results in preclinical studies or clinical trials of any product candidate, the development timeline and regulatory approval and commercialization prospects for that product candidate, and, correspondingly, our business and financial prospects, would be negatively impacted.

Our product candidates may have serious adverse, undesirable, or unacceptable side effects or other properties that may delay or prevent marketing approval. If such side effects are identified following approval, if any, the commercial profile of any approved label may be limited, or we may be subject to other significant negative consequences following marketing approval, if any.

Results of our clinical trials could reveal a high and unacceptable severity and prevalence of side effects or unexpected characteristics. Undesirable side effects that may be caused by our product candidates could cause us or regulatory authorities to interrupt, delay, or halt clinical trials and could result in a more restrictive label or the delay or denial of regulatory approval by the FDA or comparable foreign authorities. The drug-related side effects could affect patient recruitment or the ability of enrolled patients to complete the trial or result in potential product liability claims. Any of these occurrences may harm our business, financial condition and prospects significantly.

Moreover, if our product candidates are associated with undesirable side effects in clinical trials or have characteristics that are unexpected, we may elect to abandon their development or limit their development to more narrow uses or subpopulations in which the undesirable side effects or other characteristics are less prevalent, less severe or more acceptable from a risk-benefit perspective, which may limit the commercial expectations for the product candidate if approved. We may also be required to modify our study plans based on findings in our ongoing preclinical studies or clinical trials. For example, in a rat study, at its highest dose (100 mg/kg/day) NMRA-140 was observed to have skin-related phototoxicity of erythema, edema and flaking additionally ocular phototoxicity (corneal edema). While no phototoxicity has been observed in our Phase 1 clinical trials, we are monitoring visual acuity and corneal integrity in our ongoing Phase 2a clinical trial to confirm there is no phototoxicity in humans. If phototoxicity is experienced in our clinical trials, the labeling implications of such safety warnings may limit any future product sales, if NMRA-140 is approved.

Further, clinical trials by their nature utilize a sample of the potential patient population. With a limited number of patients and limited duration of exposure, rare and severe side effects of our product candidates may only be uncovered with a significantly larger number of patients exposed to the product candidate. It is possible that as we test our product candidates in larger, longer and more extensive clinical trials, including with different dosing regimens, or as the use of these product candidates becomes more widespread if they receive regulatory approval, illnesses, injuries, discomforts and other adverse events that were observed in earlier trials, as well as conditions that did not occur or went undetected in previous trials, may be reported by subjects. If such side effects become known later in development or upon approval, if any, such findings may harm our business, financial condition and prospects significantly.

In the event that any of our product candidates receives marketing approval and we or others later identify undesirable or unacceptable side effects caused by such products, a number of potentially significant negative consequences could result, including:

- regulatory authorities may withdraw or limit approvals of such products and require us to take our approved product off the market;
- regulatory authorities may require the addition of labeling statements, specific warnings, a contraindication or field alerts to physicians and pharmacies, or issue other communications containing warnings or other safety information about the product;
- regulatory authorities may require a medication guide outlining the risks of such side effects for distribution to patients, or that we implement a risk evaluation and mitigation strategy (REMS), plan to ensure that the benefits of the product outweigh its risks;
- we may be required to change the dose or the way the product is administered, conduct additional clinical trials, or change the labeling of the product;
- we may be subject to limitations on how we may promote or manufacture the product;
- sales of the product may decrease significantly;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us or our potential future partners from achieving or maintaining market acceptance of the affected product or could substantially increase commercialization costs and expenses, which in turn could delay or prevent us from generating significant revenue from the sale of any products.

Interim, topline, or preliminary data from our clinical trials that we announce or publish from time to time may change as more patient data becomes available or as we make changes to our manufacturing processes and are subject to audit and verification procedures that could result in material changes in the final data.

From time to time, we may publicly disclose preliminary or topline data from our preclinical studies and clinical trials, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the topline or preliminary results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Topline and preliminary data also remain subject to audit and verification procedures that may result in the final data being materially different from the topline or preliminary data we previously published. As a result, topline and preliminary data should be viewed with caution until the final data are available.

From time to time, we may also disclose interim data from our preclinical studies and clinical trials. Interim data from clinical trials that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available. Adverse differences between interim data and final data could significantly harm our business prospects. Further, disclosure of interim data by us or by our competitors could result in volatility in the price of our common stock.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical trial is based on what is typically extensive information, and you or others

may not agree with what we determine is material or otherwise appropriate information to include in our disclosure. If the interim, topline, or preliminary data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval for, and commercialize, our vaccine candidates may be harmed, which could harm our business, prospects, financial condition or results of operations.

We will depend on enrollment and retention of patients in our clinical trials for our product candidates. If we experience delays or difficulties enrolling or retaining patients in our clinical trials, our research and development efforts and business, financial condition and results of operations could be materially adversely affected.

Successful and timely completion of clinical trials will require that we enroll and retain a sufficient number of patient candidates. Any clinical trials we conduct may be subject to delays for a variety of reasons, including as a result of patient enrollment taking longer than anticipated, patient withdrawal or adverse events. These types of developments could cause us to delay the trial or halt further development.

Our clinical trials will compete with other clinical trials that are in the same therapeutic areas as our product candidates, and this competition reduces the number and types of patients available to us, as some patients who might have opted to enroll in our trials may instead opt to enroll in a trial being conducted by one of our competitors.

Because the number of qualified clinical investigators and clinical trial sites is limited, we expect to conduct some of our clinical trials at the same clinical trial sites that some of our competitors use, which will reduce the number of patients who are available for our clinical trials at such clinical trial sites. The eligibility criteria of our clinical studies, and in particular, any eligibility criteria we may establish using our precision neuroscience approach, may limit the pool of available study participants as we will require that patients have specific characteristics that we can measure or to assure their disease is either severe enough or not too advanced to include them in a study.

Patient enrollment depends on many factors, including:

- the size and nature of the patient population;
- the severity of the disease under investigation;
- eligibility criteria for the trial;
- the proximity of patients to clinical sites;
- the design of the clinical protocol;
- the ability to obtain and maintain patient consents;
- the ability to recruit clinical trial investigators with the appropriate competencies and experience;
- the risk that patients enrolled in clinical trials will drop out of the trials before the administration of our product candidates or trial completion;
- the availability of competing clinical trials;
- the availability of such patients during the COVID-19 pandemic;
- the availability of new drugs approved for the indication the clinical trial is investigating; and
- clinicians’ and patients’ perceptions as to the potential advantages of the drug being studied in relation to other available therapies.

These factors may make it difficult for us to enroll enough patients to complete our clinical trials in a timely and cost-effective manner. To date, the COVID-19 pandemic has delayed patient enrollment in our ongoing

clinical trials and may further delay our initiation of preclinical studies and clinical trials. Delays in the completion of any clinical trial of our product candidates will increase our costs, slow down our product candidate development and approval process, and delay or potentially jeopardize our ability to commence product sales and generate revenue. In addition, some of the factors that cause, or lead to, a delay in the commencement or completion of clinical trials may also ultimately lead to the denial of regulatory approval of our product candidates.

The estimates of market opportunity and forecasts of market growth included in this prospectus may prove to be smaller than we believe, and even if the markets in which we compete achieve the forecasted growth, our business may not grow at similar rates, or at all.

We intend to initially focus our product candidate development on treatments for various neuropsychiatric disorders and neurodegenerative diseases. Our projections of addressable patient populations within any particular disease state that may benefit from treatment with our product candidates are based on our estimates. Market opportunity estimates and growth forecasts included in this prospectus are subject to significant uncertainty and are based on assumptions and estimates. These estimates, which have been derived from a variety of sources, including scientific literature, surveys of clinics, patient foundations, and market research, may prove to be incorrect. Further, new studies may change the estimated incidence or prevalence of these diseases. Additionally, the potentially addressable patient population for our product candidates may not ultimately be amenable to treatment with our product candidates. Our market opportunity may also be limited by future competitor treatments that enter the market. If any of our estimates prove to be inaccurate, the market opportunity for any product candidate that we or our strategic partners develop could be significantly diminished and have an adverse material impact on our business.

Even if approved, our products may not gain market acceptance, in which case we may not be able to generate product revenues, which will materially adversely affect our business, financial condition, and results of operations.

Even if the FDA or any comparable foreign regulatory authority approves the marketing of any product candidates that we develop, physicians, healthcare providers, patients, or the medical community may not accept or use them. Additionally, the product candidates that we are developing are based on our proprietary platforms, which are new technologies. If these products do not achieve an adequate level of acceptance, we may not generate significant product revenues or any profits from operations. The degree of market acceptance of any of our product candidates will depend on a variety of factors, including:

- the timing of market introduction of the product candidate as well as competitive products;
- the clinical indications for which a product candidate is approved;
- the terms of any approvals and the countries in which approvals are obtained;
- the number and clinical profile of competing products;
- the potential and perceived advantages of our product candidates over alternative treatments;
- our ability to provide acceptable evidence of safety and efficacy;
- the prevalence and severity of any side effects;
- the availability of an approved product candidate for use as a combination therapy;
- relative convenience and ease of administration;
- cost-effectiveness;
- patient diagnostics and screening infrastructure in each market;
- the effectiveness of sales and marketing efforts;

- approval of other new therapies for the same indications;
- marketing and distribution support;
- adverse publicity about our product candidates;
- availability of coverage, adequate reimbursement and sufficient payment from health maintenance organizations and other insurers, both public and private, for our product candidates, or the procedures utilizing our product candidates, if approved;
- the willingness of patients to pay out-of-pocket in the absence of coverage by third-party payors and government authorities; and
- other potential advantages over alternative treatment methods.

If our product candidates fail to gain market acceptance, this will have a material adverse impact on our ability to generate revenues to provide a satisfactory, or any, return on our investments. Even if some products achieve market acceptance, the market may prove not to be large enough to allow us to generate significant revenues.

We currently have no marketing, sales, or distribution infrastructure and we intend to either establish a sales and marketing infrastructure or outsource this function to a third party. Either of these commercialization strategies carries substantial risks to us.

Given our stage of development, we currently have no marketing, sale, and distribution capabilities. If any of our product candidates complete clinical development and are approved, we intend to either establish a sales and marketing organization with technical expertise and supporting distribution capabilities to commercialize our product candidates in a legally compliant manner, or to outsource this function to a third party. There are risks involved if we decide to establish our own sales and marketing capabilities or enter into arrangements with third parties to perform these services. To the extent that we enter into collaboration agreements with respect to marketing, sales or distribution, our product revenue may be lower than if we directly marketed or sold any approved products. Such collaborative arrangements with partners may place the commercialization of our products outside of our control and would make us subject to a number of risks including that we may not be able to control the amount or timing of resources that our collaborative partner devotes to our products or that our collaborator's willingness or ability to complete its obligations, and our obligations under our arrangements may be adversely affected by business combinations or significant changes in our collaborator's business strategy.

If we are unable to enter into these arrangements on acceptable terms or at all, we may not be able to successfully commercialize any approved products. If we are not successful in commercializing any approved products, either on our own or through collaborations with one or more third parties, our future product revenue will suffer and we may incur significant additional losses, which would have a material adverse effect on our business, financial condition, and results of operations.

We may become exposed to costly and damaging liability claims, either when testing our product candidates in the clinic or at the commercial stage, and our product liability insurance may not cover all damages from such claims.

We are exposed to potential product liability and professional indemnity risks that are inherent in the research, development, manufacturing, marketing, and use of pharmaceutical products. While we currently have no products that have commenced clinical trials or been approved for commercial sale, the future use of product candidates by us in clinical trials, and the sale of any approved products in the future, may expose us to liability claims. These claims might be made by patients that use the product, healthcare providers, pharmaceutical companies, or others selling such products. Any claims against us, regardless of their merit, could be difficult and costly to defend and could materially adversely affect the market for our product candidates or any prospects for commercialization of our product candidates.

Although the clinical trial process is designed to identify and assess potential side effects, it is always possible that a drug, even after regulatory approval, may exhibit unforeseen side effects. If any of our product candidates were to cause adverse side effects during clinical trials or after approval of the product candidate, we may be exposed to substantial liabilities. Physicians and patients may not comply with any warnings that identify known potential adverse effects and patients who should not use our product candidates.

Even successful defense against product liability claims would require significant financial and management resources. Regardless of the merits or eventual outcome, liability claims may result in: decreased demand for our product candidates; injury to our reputation; withdrawal of clinical trial participants; initiation of investigations by regulators; costs to defend the related litigation; a diversion of management's time and our resources; substantial monetary awards to trial participants or patients; product recalls, withdrawals or labeling, marketing or promotional restrictions; loss of revenue; exhaustion of any available insurance and our capital resources; the inability to commercialize any product candidate; and a decline in our share price.

Although we maintain adequate product liability insurance for our product candidates, it is possible that our liabilities could exceed our insurance coverage. We intend to expand our insurance coverage to include the sale of commercial products if we obtain marketing approval for any of our product candidates. However, we may be unable to maintain insurance coverage at a reasonable cost or obtain insurance coverage that will be adequate to satisfy any liability that may arise. If a successful product liability claim or series of claims is brought against us for uninsured liabilities or in excess of insured liabilities, our assets may not be sufficient to cover such claims, and our business operations could be impaired.

Risks Related to Our Regulatory Environment

The development and commercialization of drug products is subject to extensive regulation, and the regulatory approval processes of the FDA and comparable foreign authorities are lengthy, time-consuming, and inherently unpredictable. If we are ultimately unable to obtain regulatory approval for our product candidates on a timely basis if at all, our business will be substantially harmed.

The clinical development, manufacturing, labeling, packaging, storage, recordkeeping, advertising, promotion, export, import, marketing, distribution, adverse event reporting, including the submission of safety and other post-marketing information and reports, and other possible activities relating to our product candidates are subject to extensive regulation. In the United States, obtaining marketing approval for a new drug requires the submission of a New Drug Application (NDA) to the FDA, and we are not permitted to market any product candidate in the United States until we obtain approval from the FDA of the NDA for that product candidate. An NDA must be supported by extensive clinical and preclinical data, as well as extensive information regarding pharmacology, chemistry, manufacturing, and controls. Outside the United States, many comparable foreign regulatory authorities employ similar approval processes.

We have not previously submitted an NDA to the FDA or similar marketing application to comparable foreign authorities, for any product candidate, and we cannot be certain that any of our product candidates will receive regulatory approval. Obtaining approval of an NDA can be a lengthy, expensive, and uncertain process, and as a company we have no experience with the preparation of an NDA submission or any other marketing application. In addition, the FDA has the authority to require a REMS as part of an NDA or after approval, which may impose further requirements or restrictions on the distribution or use of an approved drug, such as limiting prescribing to certain physicians or medical centers that have undergone specialized training, limiting treatment to patients who meet certain safe-use criteria and requiring treated patients to enroll in a registry.

Our product candidates could fail to receive regulatory approval for many reasons, including the following:

- the FDA or comparable foreign regulatory authorities may disagree with the design or implementation of our clinical trials;

- we may be unable to demonstrate to the satisfaction of the FDA or comparable foreign regulatory authorities that a product candidate is safe and effective for its proposed indication;
- the results of clinical trials may not meet the level of statistical significance required by the FDA or comparable foreign regulatory authorities for approval;
- we may be unable to demonstrate that a product candidate's clinical and other benefits outweigh its safety risks;
- the FDA or comparable foreign regulatory authorities may disagree with our interpretation of data from preclinical studies or clinical trials;
- the data collected from clinical trials of our product candidates may not be sufficient to support the submission of an NDA or other submission or to obtain regulatory approval in the United States or elsewhere, or regulatory authorities may not accept a submission due to, among other reasons, the content or formatting of the submission;
- the FDA or comparable foreign regulatory authorities may fail to approve our manufacturing processes or facilities or those of third-party manufacturers with which we contract for clinical and commercial supplies; and
- the approval policies or regulations of the FDA or comparable foreign regulatory authorities may significantly change in a manner rendering our clinical data insufficient for approval.

This lengthy approval process, as well as the unpredictability of future clinical trial results, may result in our failing to obtain regulatory approval to market any of our product candidates, which would significantly harm our business, results of operations, and prospects. The FDA and comparable foreign regulatory authorities have substantial discretion in the approval process, and determining when or whether regulatory approval will be obtained for any of our product candidates. For example, regulatory authorities in various jurisdictions have in the past had, and may in the future have, differing requirements for, interpretations of and opinions on our preclinical and clinical data. As a result, we may be required to conduct additional preclinical studies, alter our proposed clinical trial designs, or conduct additional clinical trials to satisfy the regulatory authorities in each of the jurisdictions in which we hope to conduct clinical trials and develop and market our products, if approved. Further, even if we believe the data collected from clinical trials of our product candidates are promising, such data may not be sufficient to support approval by the FDA or any comparable foreign regulatory authority.

In addition, even if we were to obtain approval, regulatory authorities may approve any of our product candidates for fewer or more limited indications than we request, may not approve the price we intend to charge for our products, may grant approval contingent on the performance of costly post-marketing clinical trials, or may approve a product candidate with a label that does not include the labeling claims necessary or desirable for the successful commercialization of that product candidate. Any of the foregoing scenarios could materially harm the commercial prospects for our product candidates.

Even if our product candidates obtain regulatory approval, we will be subject to ongoing obligations and continued regulatory review, which may result in significant additional expense. Additionally, our product candidates, if approved, could be subject to labeling and other restrictions and market withdrawal and we may be subject to penalties if we fail to comply with regulatory requirements or experience unanticipated problems with our products.

If the FDA or a comparable foreign regulatory authority approves any of our product candidates, the manufacturing processes, testing, safety, efficacy, labeling, packaging, distribution, import, export, adverse event reporting, storage, advertising, promotion, and recordkeeping for the product will be subject to extensive and ongoing regulatory requirements. These requirements include submissions of safety and other post-marketing information and reports, registration, as well as continued compliance with current good manufacture practices (cGMPs) and good clinical practices (GCPs) for any clinical trials that we conduct post-approval, all of which

may result in significant expense and limit our ability to commercialize such products. In addition, any regulatory approvals that we receive for our product candidates may also be subject to limitations on the approved indicated uses for which the product may be marketed or to the conditions of approval, or contain requirements for potentially costly post-marketing testing, including Phase 4 clinical trials, and surveillance to monitor the safety and efficacy of the product candidate.

Manufacturers and manufacturers' facilities are required to comply with extensive FDA and comparable foreign regulatory authority requirements, including ensuring that quality control and manufacturing procedures conform to cGMP regulations. As such, we and our contract manufacturers will be subject to continual review and inspections to assess compliance with cGMP and adherence to commitments made in any approved marketing application. Accordingly, we and others with whom we work must continue to expend time, money, and effort in all areas of regulatory compliance, including manufacturing, quality control, and distribution.

If a regulatory agency discovers previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, or disagrees with the promotion, marketing or labeling of a product, such regulatory agency may impose restrictions on that product or us, including requiring withdrawal of the product from the market. If we fail to comply with applicable regulatory requirements, a regulatory agency or enforcement authority may, among other things:

- issue warning letters or untitled letters;
- issue, or require us to issue, safety-related communications, such as safety alerts, field alerts, "Dear Doctor" letters to healthcare professionals, or import alerts;
- impose civil or criminal penalties;
- suspend, limit, or withdraw regulatory approval;
- suspend any of our preclinical studies and clinical trials;
- refuse to approve pending applications or supplements to approved applications;
- impose restrictions on our operations, including closing our and our contract manufacturers' facilities; or
- seize or detain products, refuse to permit the import or export of products, or require us to conduct a product recall.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate adverse publicity. Any failure to comply with ongoing regulatory requirements may significantly and adversely affect our ability to commercialize and generate revenue from our products, if approved. If regulatory sanctions are applied or if regulatory approval is withdrawn, the value of our company and our operating results will be adversely affected.

Moreover, the policies of the FDA and of comparable foreign regulatory authorities may change and additional government regulations may be enacted that could prevent, limit, or delay regulatory approval of our product candidates. We cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may be subject to enforcement action and we may not achieve or sustain profitability.

The FDA and other regulatory agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. If we are found or alleged to have improperly promoted off-label uses, we may become subject to significant liability.

The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about drug products. These regulations include standards and restrictions for direct-to-consumer advertising, industry-

sponsored scientific and educational activities, promotional activities involving the internet and off-label promotion. For example, any regulatory approval that the FDA grants is limited to those indications and patient populations for which a drug is deemed to be safe and effective by the FDA.

While physicians in the United States may choose, and are generally permitted, to prescribe products in their independent medical judgment for uses that are not described in the product's labeling and for uses that differ from those tested in clinical trials and approved by the regulatory authorities, our ability to promote any of our products candidates, if approved, will be narrowly limited to those indications and populations that are specifically approved by the FDA or such other regulatory agencies, and if we are found to have promoted such off-label uses, we may become subject to significant liability. For example, the federal government has levied large civil and criminal fines against companies for alleged improper promotion and has enjoined several companies from engaging in off-label promotion. The government has also required companies to enter into consent decrees or imposed permanent injunctions under which specified promotional conduct is changed or curtailed. If we cannot successfully manage the promotion of our product candidates, if approved, we could become subject to significant liability, which would materially adversely affect our business and financial condition.

Disruptions at the FDA and other government agencies caused by funding shortages or global health concerns could hinder their ability to hire, retain, or deploy key leadership and other personnel, or otherwise prevent new or modified products from being developed, approved, or commercialized in a timely manner or at all, which could negatively impact our business.

The ability of the FDA to review and approve new products can be affected by a variety of factors, including government budget and funding levels, statutory, regulatory, and policy changes, the FDA's ability to hire and retain key personnel and accept the payment of user fees, and other events that may otherwise affect the FDA's ability to perform routine functions. Average review times at the FDA have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable. Disruptions at the FDA and other agencies may also slow the time necessary for new drugs or modifications to approved drugs to be reviewed and/or approved by necessary government agencies, which would adversely affect our business. For example, over the last several years, including for 35 days beginning on December 22, 2018, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA employees and stop critical activities.

Separately, in response to the COVID-19 pandemic, in March 2020 the FDA announced its intention to postpone most inspections of foreign manufacturing facilities and routine surveillance inspections of domestic manufacturing facilities. Subsequently, in July 2020, the FDA resumed on-site inspections of manufacturing facilities subject to a risk-based prioritization system. This risk-based assessment system is being used to identify the categories of regulatory activity that can occur within a given geographic area, ranging from mission critical inspections to resumption of all regulatory activities. Additionally, on April 15, 2021, the FDA issued a guidance document concerning voluntary remote interactive evaluations. According to the guidance, the FDA intends to request such remote interactive evaluations in situations where an in-person inspection would not be prioritized, deemed mission-critical, or where direct inspection is otherwise limited by travel restrictions, but where the FDA determines that remote evaluation would be appropriate. Regulatory authorities outside the United States may adopt similar restrictions or other policy measures in response to the COVID-19 pandemic. If a prolonged government shutdown occurs, or if global health concerns continue to prevent the FDA or comparable foreign regulatory authorities from conducting their regular inspections, reviews, or other regulatory activities, it could significantly impact the ability of the FDA or comparable foreign regulatory authorities to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

We are subject to U.S. and certain foreign export and import controls, sanctions, embargoes, anti-corruption laws, and anti-money laundering laws and regulations. Compliance with these legal standards could impair our ability to compete in domestic and international markets. We can face criminal liability and other serious consequences for violations, which can harm our business.

We are subject to export control and import laws and regulations, including the U.S. Export Administration Regulations, U.S. Customs regulations, various economic and trade sanctions regulations administered by the U.S. Treasury Department's Office of Foreign Assets Controls, the U.S. Foreign Corrupt Practices Act of 1977, as amended (FCPA), the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, and other state and national anti-bribery and anti-money laundering laws in the countries in which we conduct activities. Anti-corruption laws are interpreted broadly and prohibit companies and their employees, agents, contractors, and other collaborators from authorizing, promising, offering, or providing, directly or indirectly, improper payments or anything else of value to recipients in the public or private sector. We may engage third parties to sell our products outside the United States, to conduct clinical trials, and/or to obtain necessary permits, licenses, patent registrations, and other regulatory approvals. We have direct or indirect interactions with officials and employees of government agencies or government-affiliated hospitals, universities, and other organizations. We can be held liable for the corrupt or other illegal activities of our employees, agents, contractors, and other collaborators, even if we do not explicitly authorize or have actual knowledge of such activities. Any violations of the laws and regulations described above may result in substantial civil and criminal fines and penalties, imprisonment, the loss of export or import privileges, debarment, tax reassessments, breach of contract and fraud litigation, reputational harm, and other consequences

Our research and development activities could be affected or delayed as a result of possible restrictions on animal testing.

Certain laws and regulations require us to test our product candidates on animals before initiating clinical trials involving humans. Animal testing activities have been the subject of controversy and adverse publicity. Animal rights groups and other organizations and individuals have attempted to stop animal testing activities by pressing for legislation and regulation in these areas and by disrupting these activities through protests and other means. To the extent the activities of these groups are successful, our research and development activities may be interrupted, delayed, or become more expensive.

Our business operations and current and future relationships with healthcare professionals, principal investigators, consultants, vendors, customers, and third-party payors in the United States and elsewhere are subject to applicable anti-kickback, fraud and abuse, false claims, physician payment transparency, and other healthcare laws and regulations, which could expose us to substantial penalties, contractual damages, reputation harm, administrative burdens, and diminished profits.

Healthcare providers, healthcare facilities and institutions and third-party payors in the United States and elsewhere will play a primary role in the recommendation and prescription of any product candidates for which we obtain marketing approval. Our current and future arrangements with healthcare professionals, healthcare facilities and institutions, principal investigators, consultants, customers, and third-party payors may expose us to broadly applicable fraud and abuse and other healthcare laws, including, without limitation, the federal Anti-Kickback Statute and the federal False Claims Act, that may constrain the business or financial arrangements and relationships through which we research, sell, market, and distribute any product candidates for which we obtain marketing approval. In addition, we may be subject to physician payment transparency laws and regulation by the federal government and by the states and foreign jurisdictions in which we conduct our business. The applicable federal, state, and foreign healthcare laws that affect our ability to operate include, but are not limited to, the following:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving, or providing any remuneration (including any kickback, bribe, or certain rebate), directly or indirectly, overtly or covertly, in cash or in kind, to induce or reward, or in return for, either the referral of an individual for, or the purchase, lease, order or recommendation of, any good, facility, item or service, for which payment may be made, in whole or in

part, under any U.S. federal healthcare program, such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;

- the U.S. federal civil and criminal false claims laws, including the civil False Claims Act, which prohibit, among other things, including through civil whistleblower or qui tam actions, individuals or entities from knowingly presenting, or causing to be presented, to the U.S. federal government, claims for payment or approval that are false or fraudulent, knowingly making, using, or causing to be made or used, a false record or statement material to a false or fraudulent claim, or from knowingly making a false statement to avoid, decrease, or conceal an obligation to pay money to the U.S. federal government. Pharmaceutical manufacturers can cause false claims to be presented to the U.S. federal government by, among other things, engaging in impermissible marketing practices, such as the off-label promotion of a product for an indication for which it has not received FDA approval. In addition, the government may assert that a claim including items and services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the civil False Claims Act;
- the federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any healthcare benefit program, or knowingly and willfully falsifying, concealing, or covering up a material fact or making any materially false statement, in connection with the delivery of, or payment for, healthcare benefits, items, or services. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the healthcare fraud statute implemented under HIPAA or specific intent to violate it in order to have committed a violation;
- the U.S. Physician Payments Sunshine Act and its implementing regulations, which requires, among other things, certain manufacturers of drugs, devices, biologics, and medical supplies that are reimbursable under Medicare, Medicaid, or the Children's Health Insurance Program, with specific exceptions, to report annually to the Centers for Medicare and Medicaid Services, or CMS, information related to certain payments and other transfers of value to physicians, as defined by statute, and teaching hospitals, as well as ownership and investment interests held by such physicians and their immediate family members. Beginning in 2022, such obligations will include payments and other transfers of value provided in the previous year to certain other healthcare professionals, including physician assistants, nurse practitioners, clinical nurse specialists, certified nurse anesthetists, anesthesiology assistants and certified nurse-midwives;
- analogous U.S. state laws and regulations, including: state anti-kickback and false claims laws, which may apply to our business practices, including but not limited to, research, distribution, sales and marketing arrangements, and claims involving healthcare items or services reimbursed by any third-party payor, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the U.S. federal government, or otherwise restrict payments that may be made to healthcare providers and other potential referral sources; state laws and regulations that require drug manufacturers to file reports relating to pricing and marketing information, which requires tracking gifts and other remuneration and items of value provided to healthcare professionals and entities; and state and local laws requiring the registration of pharmaceutical sales representatives; and
- similar healthcare laws and regulations in foreign jurisdictions, including reporting requirements detailing interactions with and payments to healthcare providers.

Ensuring that our internal operations and future business arrangements with third parties comply with applicable healthcare laws and regulations will involve substantial costs. It is not always possible to identify and deter employee misconduct or business noncompliance, and the precautions we take to detect and prevent

inappropriate conduct may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations. Efforts to ensure that our business arrangements will comply with applicable healthcare laws may involve substantial costs. We have entered into consulting and scientific advisory board arrangements with physicians and other healthcare providers, including some who could influence the use of our product candidates, if approved. Compensation under some of these arrangements includes the provision of stock or stock options in addition to cash consideration. Because of the complex and far-reaching nature of these laws, it is possible that governmental authorities could conclude that our payments to physicians may not be fair market value for *bona fide* services or that our business practices do not comply with current or future statutes, regulations, agency guidance or case law involving applicable fraud and abuse or other healthcare laws and regulations. If our operations are found to be in violation of any of the laws described above or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal, and administrative penalties, damages, fines, exclusion from government-funded healthcare programs, such as Medicare and Medicaid, or similar programs in other countries or jurisdictions, integrity oversight and reporting obligations to resolve allegations of noncompliance, disgorgement, individual imprisonment, contractual damages, reputational harm, diminished profits, and the curtailment or restructuring of our operations. If any of the physicians or other providers or entities with whom we expect to do business are found to not be in compliance with applicable laws, they may be subject to criminal, civil or administrative sanctions, including exclusions from government funded healthcare programs and imprisonment, which could affect our ability to operate our business. Further, defending against any such actions can be costly, time-consuming and may require significant personnel resources. Therefore, even if we are successful in defending against any such actions that may be brought against us, our business may be impaired.

Our employees, independent contractors, principal investigators, consultants, commercial partners and vendors may engage in misconduct or other improper activities, including noncompliance with regulatory standards and requirements.

We are exposed to the risk of employee fraud or other misconduct. We cannot ensure that our compliance controls, policies, and procedures will in every instance protect us from acts committed by our employees, agents, contractors, or collaborators that would violate the laws or regulations of the jurisdictions in which we operate, including, without limitation, employment, foreign corrupt practices, trade restrictions and sanctions, environmental, competition, and patient privacy and other privacy laws and regulations. Misconduct by employees could include failures to comply with FDA regulations, provide accurate information to the FDA, comply with manufacturing standards we may establish, comply with federal and state healthcare fraud and abuse laws and regulations, report financial information or data accurately, or disclose unauthorized activities to us. In particular, sales, marketing, and business arrangements in the healthcare industry are subject to extensive laws and regulations intended to prevent fraud, kickbacks, self-dealing, and other abusive practices. These laws and regulations may restrict or prohibit a wide range of pricing, discounting, labeling, marketing and promotion, sales commission, customer incentive programs, and other business arrangements. Employee misconduct could also involve the improper use of information obtained in the course of clinical trials, which could result in
regulatory sanctions and serious harm to our reputation. It is not always possible to identify and deter employee misconduct, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with such laws or regulations.

If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a material and adverse effect on our business, financial condition, results of operations and prospects, including the imposition of significant civil, criminal and administrative penalties, damages, monetary fines, individual imprisonment, disgorgement of profits, possible exclusion from participation in Medicare, Medicaid and other federal healthcare programs, contractual damages, reputational harm, diminished profits and future earnings, additional reporting or oversight obligations if we become subject to a corporate integrity agreement or other agreement to resolve allegations of noncompliance with the law, and

curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and pursue our strategy.

Current and future legislation may increase the difficulty and cost for us and any future collaborators to obtain marketing approval of and commercialize our product candidates and affect the prices we, or they, may obtain.

In the United States and other jurisdictions, there have been, and we expect there will continue to be, a number of legislative and regulatory changes and proposed changes to the healthcare system that could affect our future results of operations. In particular, there have been and continue to be a number of initiatives at the U.S. federal and state levels that seek to reduce healthcare costs and improve the quality of healthcare. For example, in March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act (collectively, the ACA), was enacted, which substantially changed the way healthcare is financed by both governmental and private payors. Among the provisions of the ACA of importance to the pharmaceutical and biotechnology industries are the following:

- manufacturers and importers of certain branded prescription drugs are required to pay an annual, nondeductible fee according to their market share of all such sales;
- an increase in the statutory minimum rebates a manufacturer must pay under the Medicaid Drug Rebate Program, to 23.1% of the average manufacturer price for most branded drugs, biologics, and biosimilars and to 13.0% for generic drug, and cap of the total rebate amount for innovator drugs at 100% of the Average Manufacturer Price (AMP);
- a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for certain drugs and biologics, including our product candidates, that are inhaled, infused, instilled, implanted, or injected;
- extension of manufacturers' Medicaid rebate liability to covered drugs dispensed to individuals who are enrolled in Medicaid managed care organizations;
- expansion of eligibility criteria for Medicaid programs by, among other things, allowing states to offer Medicaid coverage to additional individuals and by adding new mandatory eligibility categories for individuals with income at or below 133% of the federal poverty level, thereby potentially increasing manufacturers' Medicaid rebate liability;
- expansion of the entities eligible for discounts under the Public Health program, commonly referred to as the "340B Program;"
- a new Medicare Part D coverage gap discount program, in which manufacturers must agree to offer 50% (increased to 70% pursuant to the Bipartisan Budget Act of 2018, effective as of 2019) point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D;
- a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and
- establishment of a Center for Medicare and Medicaid Innovation at CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial and Congressional challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Thus, the ACA will remain in effect in its current form. Prior to the Supreme Court's decision, President Biden issued an Executive Order to initiate a

special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The Executive Order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is unclear how other healthcare reform measures of the Biden administration or other efforts, if any, to challenge, repeal or replace the ACA, will impact our business.

In addition, other legislative changes have been proposed and adopted in the United States since the ACA was enacted. For example, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. Further, in August 2011, the Budget Control Act of 2011, among other things, included aggregate reductions of Medicare payments to providers of 2% per fiscal year. These reductions went into effect in April 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with the exception of a temporary suspension from May 1, 2020 through December 31, 2021, unless additional action is taken by Congress. In addition, Congress is considering drug pricing as part of the budget reconciliation process.

Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries, proposed and enacted legislation and executive orders issued by the President designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for drug products. For example, in July 2021, the Biden administration released an executive order, "Promoting Competition in the American Economy," with multiple provisions aimed at prescription drugs. In response to Biden's executive order, on September 9, 2021, the U.S. Department of Health and Human Services (HHS) released a Comprehensive Plan for Addressing High Drug Prices that outlines principles for drug pricing reform and sets out a variety of potential legislative policies that Congress could pursue as well as potential administrative actions HHS can take to advance these principles. No legislation or administrative actions have been finalized to implement these principles. It is also possible that additional governmental action is taken in response to the COVID-19 pandemic. Additionally, individual states in the United States have passed legislation and implemented regulations designed to control pharmaceutical and biological product pricing and costs. Similar developments have occurred outside of the United States, including in the European Union where healthcare budgetary constraints have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. To obtain reimbursement or pricing approval in some European Union member states, we may be required to conduct studies that compare the cost-effectiveness of our product candidates to other therapies that are considered the local standard of care.

We cannot predict the likelihood, nature, or extent of government regulation that may arise from future legislation or administrative action in the United States or any other jurisdiction. If we or any third parties we may engage are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we or such third parties are not able to maintain regulatory compliance, our product candidates may lose any regulatory approval that may have been obtained and we may not achieve or sustain profitability.

The withdrawal of the United Kingdom from the European Union, commonly referred to as "Brexit," may adversely impact our ability to obtain regulatory approvals of our product candidates in the European Union, result in restrictions or imposition of taxes and duties for importing our product candidates into the European Union, and may require us to incur additional expenses in order to develop, manufacture and commercialize our product candidates in the European Union.

Following the result of a referendum in 2016, the United Kingdom left the European Union on January 31, 2020, commonly referred to as "Brexit." Pursuant to the formal withdrawal arrangements agreed between the United Kingdom and the European Union, the United Kingdom was subject to a transition period until

December 31, 2020 (the Transition Period), during which EU rules continued to apply. Negotiations between the United Kingdom and the European Union are expected to continue in relation to the customs and trading relationship between the United Kingdom and the European Union following the expiry of the Transition Period.

Since a significant proportion of the regulatory framework in the United Kingdom applicable to our business and our product candidates is derived from EU directives and regulations, Brexit, following the Transition Period, could materially impact the regulatory regime with respect to the development, manufacture, importation, approval and commercialization of our product candidates in the United Kingdom or the European Union. For example, as a result of the uncertainty surrounding Brexit, the EMA relocated to Amsterdam from London. Following the Transition Period, the United Kingdom will no longer be covered by the centralized procedures for obtaining EU-wide marketing authorization from the EMA and, unless a specific agreement is entered into, a separate process for authorization of drug products, including our product candidates, will be required in the United Kingdom, the potential process for which is currently unclear. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, would prevent us from commercializing our product candidates in the United Kingdom or the European Union and restrict our ability to generate revenue and achieve and sustain profitability. In addition, we may be required to pay taxes or duties or be subjected to other hurdles in connection with the importation of our product candidates into the European Union, or we may incur expenses in establishing a manufacturing facility in the European Union in order to circumvent such hurdles. If any of these outcomes occur, we may be forced to restrict or delay efforts to seek regulatory approval in the United Kingdom or the European Union for our product candidates, or incur significant additional expenses to operate our business, which could significantly and materially harm or delay our ability to generate revenues or achieve profitability of our business. Any further changes in international trade, tariff and import/export regulations as a result of Brexit or otherwise may impose unexpected duty costs or other non-tariff barriers on us. These developments, or the perception that any of them could occur, may significantly reduce global trade and, in particular, trade between the impacted nations and the United Kingdom.

Even if we are able to commercialize any product candidate, coverage and adequate reimbursement may not be available or such product candidate may become subject to unfavorable pricing regulations or third-party coverage and reimbursement policies, which would harm our business.

The regulations that govern regulatory approvals, pricing, and reimbursement for drug products vary widely from country to country. Some countries require approval of the sale price of a drug product before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, prescription drug product pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product, possibly for lengthy time periods, and negatively impact the revenues we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more product candidates, even if our product candidates obtain regulatory approval.

Our ability to commercialize any products successfully also will depend in part on the extent to which coverage and adequate reimbursement for these products and related treatments will be available from third-party payors, such as government authorities, private health insurers, and other organizations. Even if we succeed in bringing one or more products to the market, these products may not be considered cost-effective, and the amount reimbursed for any products may be insufficient to allow us to sell our products on a competitive basis. Because our programs are in the early stages of development, we are unable at this time to determine their cost effectiveness or the likely level or method of coverage and reimbursement. Increasingly, the third-party payors who reimburse patients or healthcare providers are requiring that drug companies provide them with predetermined discounts from list prices, and are seeking to reduce the prices charged or the amounts reimbursed for drug products. If the price we are able to charge for any products we develop, or the coverage and reimbursement provided for such products, is inadequate in light of our development and other costs, our return on investment could be affected adversely.

There may be significant delays in obtaining reimbursement for newly-approved drug products, and coverage may be more limited than the purposes for which the drug product is approved by the FDA or comparable foreign regulatory authorities. Moreover, eligibility for reimbursement does not imply that any drugs product will be reimbursed in all cases or at a rate that covers our costs, including research, development, manufacture, sale, and distribution.

Interim reimbursement levels for new drug products, if applicable, may also be insufficient to cover our costs and may not be made permanent. Reimbursement rates may be based on payments allowed for lower cost drug products that are already reimbursed, may be incorporated into existing payments for other services and may reflect budgetary constraints or imperfections in Medicare data. Net prices for drug products may be reduced by mandatory discounts or rebates required by third-party payors and by any future relaxation of laws that presently restrict imports of drug products from countries where they may be sold at lower prices than in the United States. Obtaining coverage and adequate reimbursement for our product candidates may be particularly difficult because of the higher prices often associated with drugs administered under the supervision of a physician.

Further, no uniform policy for coverage and reimbursement exists in the United States, and coverage and reimbursement can differ significantly from payor to payor. Third-party payors often follow Medicare coverage policy and payment limitations in setting their own reimbursement rates, but also have their own methods and approval process apart from Medicare determinations. As a result, the coverage determination process is often a time-consuming and costly process that will require us to provide scientific and clinical support for the use of our product candidates to each payor separately, with no assurance that coverage and adequate reimbursement will be applied consistently or obtained in the first instance. Decisions regarding the extent of coverage and amount of reimbursement to be provided for any product candidates that we develop will be made on a payor-by-payor basis. One payor's determination to provide coverage for a drug does not assure that other payors will also provide coverage and adequate reimbursement for the drug. Additionally, a third-party payor's decision to provide coverage for a therapy does not imply that an adequate reimbursement rate will be approved.

There have been, and likely will continue to be, legislative and regulatory proposals at the foreign, federal, and state levels directed at broadening the availability of healthcare and containing or lowering the cost of healthcare. The continuing efforts of the government, insurance companies, managed care organizations, and other payors of healthcare services to contain or reduce costs of healthcare and/or impose price controls may adversely affect:

- the demand for our product candidates, if we obtain regulatory approval;
- our ability to set a price that we believe is fair for our products;
- our ability to obtain coverage and reimbursement approval for a product;
- our ability to generate revenue and achieve or maintain profitability;
- the level of taxes that we are required to pay; and
- the availability of capital.

Our inability to promptly obtain coverage and adequate reimbursement from both third-party payors for the product candidates that we may develop and for which we obtain regulatory approval could have a material and adverse effect on our business, financial condition, results of operations, and prospects.

We face potential liability related to the privacy of health information we utilize in the development of product candidates, as well as information we obtain from clinical trials sponsored by us from research institutions and directly from individuals.

We and our partners and vendors are subject to various federal, state, and foreign data protection laws and regulations (i.e., laws and regulations that address data privacy and security). If we fail to comply with these laws

and regulations we may be subject to litigation, regulatory investigations, enforcement notices, enforcement actions, fines, and criminal or civil penalties, as well as adverse publicity and a potential loss of business.

In the United States, numerous federal and state laws and regulations, including state data breach notification laws, state health information privacy laws, and federal and state consumer protection laws and regulations that govern the collection, use, disclosure, and protection of health-related and other personal information could apply to our operations or the operations of our partners. For example, most healthcare providers, including research institutions from which we obtain patient health information, are subject to privacy and security regulations promulgated under HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act of 2009. HIPAA imposes obligations on "covered entities," including certain healthcare providers, health plans and healthcare clearinghouses, as well as their respective "business associates" that create, receive, maintain or transmit individually identifiable health information for or on behalf of a covered entity, with respect to safeguarding the privacy, security and transmission of individually identifiable health information. We could potentially face substantial criminal or civil penalties if we violate HIPAA. For example, we could be subject to significant penalties if we knowingly receive individually identifiable health information from a HIPAA-covered healthcare provider or research institution that has not satisfied HIPAA's requirements for disclosure of individually identifiable health information, or otherwise violate applicable HIPAA requirements related to the protection of such information. Even when HIPAA does not apply, according to the Federal Trade Commission (FTC) violating consumers' privacy rights or failing to take appropriate steps to keep consumers' personal information secure may constitute a violation of the FTC Act. The FTC expects a company's data security measures to be reasonable and appropriate in light of the sensitivity and volume of consumer information it holds, the size and complexity of its business, and the cost of available tools to improve security and reduce vulnerabilities. For our clinical trials, we may maintain sensitive personally identifiable information, including health information, that we receive throughout the clinical trial process, in the course of our research collaborations, and directly from individuals (or their healthcare providers) who enroll in our patient assistance programs. As such, we may be subject to state laws governing the privacy of personal information or requiring notification of affected individuals and state regulators in the event of a breach of personal information. For example, the California Consumer Privacy Act (CCPA) went into effect on January 1, 2020, which establishes additional data privacy rights for residents of the State of California. The CCPA gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. Although there are limited exemptions for health-related information, including clinical trial data, the CCPA may increase our compliance costs and potential liability. Further, the California Privacy Rights Act (CPRA) recently passed, which will significantly expand the CCPA. Most CPRA provisions will take effect on January 1, 2023, though the obligations will apply to any personal information collected after January 1, 2022. The CPRA will impose additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data, and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions will go into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. New legislation proposed or enacted in various other states will continue to shape the data privacy environment nationally. For example, on March 2, 2021, Virginia enacted the Virginia Consumer Data Protection Act (CDPA), which becomes effective on January 1, 2023, and on June 8, 2021, Colorado enacted the Colorado Privacy Act (CPA), which takes effect on July 1, 2023. The CPA and CDPA are similar to the CCPA and CPRA but aspects of these state privacy statutes remain unclear, resulting in further legal uncertainty and potentially requiring us to modify our data practices and policies and to incur substantial additional costs and expenses in an effort to comply. Complying with the GDPR, CCPA, CPRA, CDPA, CPA or other laws, regulations, amendments to or re-interpretations of existing laws and regulations and contractual or other obligations relating to privacy, data protection, data transfers, data localization or information security may require us to make changes to our processes, incur substantial operational costs, modify our data practices and policies and restrict our business operations. Any actual or perceived failure by us to

comply with these laws, regulations or other obligations may lead to significant fines, penalties, regulatory investigations, lawsuits, significant costs for remediation, damage to our reputation or other liabilities.

Any clinical trial programs and research collaborations that we engage in outside the United States may implicate international data protection laws, including, in the European Economic Area (EEA), the General Data Protection Regulation (GDPR), which became effective in 2018. The GDPR imposes stringent operational requirements for processors and controllers of personal data. Among other things, the GDPR requires detailed notices for clinical trial subjects and investigators, as well as requirements regarding the security of personal data and notification of data processing obligations or security incidents to appropriate data protection authorities or data subjects. If our privacy or data security measures fail to comply with the GDPR requirements, we may be subject to litigation, regulatory investigations, enforcement notices, and/or enforcement actions requiring us to change the way we use personal data and/or fines. In addition to statutory enforcement, a personal data breach can lead to adverse publicity and a potential loss of business. Further, from January 1, 2021, companies have had to comply with both the GDPR and the United Kingdom GDPR (UK GDPR), which, together with the amended UK Data Protection Act 2018, retains the GDPR in United Kingdom national law. The UK GDPR mirrors the fines under the GDPR, imposing fines up to the greater of €20 million (£17.5 million) or 4% of global turnover. The European Commission has adopted an adequacy decision in favor of the United Kingdom, enabling data transfers from European Union (EU) member states to the United Kingdom without additional safeguards. However, the United Kingdom adequacy decision will automatically expire in June 2025 unless the European Commission re-assesses and renews/extends that decision, and remains under review by the Commission during this period. The relationship between the United Kingdom and the EU in relation to certain aspects of data protection law remains unclear, and it is unclear how United Kingdom data protection laws and regulations will develop in the medium to longer term. If we fail to comply with United Kingdom data protection laws, we may be subject to litigation, regulatory investigations, enforcement notices, and/or enforcement actions, as well as adverse publicity and a potential loss of business.

Following the Schrems II case judgment on July 16, 2020, in which the Court of Justice of the European Union invalidated the EU-US Privacy Shield Framework, the European Commission has published revised standard contractual clauses for data transfers from the EEA and guidance on how to assess whether transfers can be legally made using them. There is some uncertainty around whether the revised clauses can be used for all types of data transfers, particularly whether they can be relied on for data transfers to non-EEA entities subject to the GDPR, and the UK has not yet approved their use. As government authorities issue further guidance on personal data export mechanisms and/or start taking enforcement action, we could suffer additional costs, complaints, and/or regulatory investigations or fines, and/or if we are otherwise unable to transfer personal data between and among countries and regions in which we operate, it could affect the manner in which we provide our services, the geographical location or segregation of our relevant systems and operations, and could adversely affect our financial results. These laws and regulations may apply, not only to us, but also to vendors that store or otherwise process data on our behalf, such as information technology vendors. If such a vendor misuses data we have provided to it, or fails to safeguard such data, we may be subject to litigation, regulatory investigations, enforcement notices, and/or enforcement actions, as well as adverse publicity and a potential loss of business.

We are likely to be required to expend significant capital and other resources to ensure ongoing compliance with applicable privacy and data security laws. Claims that we have violated individuals' privacy rights or breached our contractual obligations, even if we are not found liable, could be expensive and time-consuming to defend, and could result in adverse publicity that could harm our business. Moreover, even if we take all necessary action to comply with regulatory requirements, we could be subject to a hack or data breach, which could subject us to fines and penalties, as well as reputational damage.

If we fail to comply with applicable federal, state, or local regulatory requirements, we could be subject to a range of regulatory actions that could affect our or any collaborators' ability to seek to commercialize our clinical candidates. Any threatened or actual government enforcement action could also generate adverse publicity and require that we devote substantial resources that could otherwise be used in other aspects of our business.

Risks Related to Our Dependence on Third Parties

We contract with third parties for the manufacture of our product candidates. This reliance on third parties increases the risk that we will not have sufficient quantities of our product candidates or drugs or such quantities at an acceptable cost, which could delay, prevent or impair our development or commercialization efforts.

We do not currently have the infrastructure or internal capability to manufacture supplies of our product candidates for use in development and commercialization. We rely, and expect to continue to rely, on third-party manufacturers for the production of our product candidates for preclinical studies and clinical trials under the guidance of members of our organization. We do not have long-term supply agreements. Furthermore, the raw materials for our product candidates are sourced, in some cases, from a single-source supplier. If we were to experience an unexpected loss of supply of any of our product candidates or any of our future product candidates for any reason, whether as a result of manufacturing, supply or storage issues or otherwise, we could experience delays, disruptions, suspensions or terminations of, or be required to restart or repeat, any pending or ongoing clinical trials. For example, the extent to which the COVID-19 pandemic impacts our ability to procure sufficient supplies for the development of our products and product candidates will depend on the severity and duration of the spread of the virus, and the actions undertaken to contain COVID-19 or treat its effects.

We expect to continue to rely on third-party manufacturers for the commercial supply of any of our product candidates for which we obtain marketing approval. We may be unable to maintain or establish required agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- the failure of the third party to manufacture our product candidates according to our schedule, or at all, including if our third-party contractors give greater priority to the supply of other products over our product candidates or otherwise do not satisfactorily perform according to the terms of the agreements between us and them;
- the reduction or termination of production or deliveries by suppliers, or the raising of prices or renegotiation of terms;
- the termination or nonrenewal of arrangements or agreements by our third-party contractors at a time that is costly or inconvenient for us;
- the breach by the third-party contractors of our agreements with them;
- the failure of third-party contractors to comply with applicable regulatory requirements;
- the failure of the third party to manufacture our product candidates according to our specifications;
- the mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or study drug or placebo not being properly identified;
- clinical supplies not being delivered to clinical sites on time, leading to clinical trial interruptions, or of drug supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales; and
- the misappropriation of our proprietary information, including our trade secrets and know-how.

We do not have complete control over all aspects of the manufacturing process of, and are dependent on, our contract manufacturing partners for compliance with cGMP regulations for manufacturing both active drug substances and finished drug products. Third-party manufacturers may not be able to comply with cGMP regulations or similar regulatory requirements outside of the United States. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the strict regulatory requirements of the FDA or a comparable foreign regulatory authority, they will not be able to secure and/or maintain marketing

approval for their manufacturing facilities. In addition, we do not have control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or a comparable foreign regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, we may need to find alternative manufacturing facilities, which would significantly impact our ability to develop, obtain marketing approval for or market our product candidates, if approved. Our failure, or the failure of our third-party manufacturers, to comply with applicable regulations could result in sanctions being imposed on us, including fines, injunctions, civil penalties, delays, suspension or withdrawal of approvals, license revocation, seizures or recalls of product candidates or drugs, operating restrictions and criminal prosecutions, any of which could significantly and adversely affect supplies of our product candidates or drugs and harm our business and results of operations.

Our current and anticipated future dependence upon others for the manufacture of our product candidates or drugs may adversely affect our future profit margins and our ability to commercialize any product candidates that receive marketing approval on a timely and competitive basis.

Supply sources could be interrupted from time to time and, if interrupted, there is no guarantee that supplies could be resumed within a reasonable time frame and at an acceptable cost or at all.

We rely on our manufacturers to purchase from third-party suppliers the materials necessary to produce our product candidates for our preclinical studies and intend to continue to rely on these third parties for any clinical trials that we undertake. There are a limited number of suppliers for raw materials that we use to manufacture our drugs and there may be a need to assess alternate suppliers to prevent a possible disruption of the manufacture of the materials necessary to produce our product candidates for our preclinical studies, clinical trials, and if approved, ultimately for commercial sale. We do not have any control over the process or timing of the acquisition of these raw materials by our manufacturers. Moreover, we currently do not have any agreements for the commercial production of these raw materials. We cannot be sure that these suppliers will remain in business, or that they will not be purchased by one of our competitors or another company that is not interested in continuing to produce these materials for our intended purpose. In addition, the lead time needed to establish a relationship with a new supplier can be lengthy, and we may experience delays in meeting demand in the event a new supplier must be used. The time and effort to qualify a new supplier could result in additional costs, diversion of resources, or reduced manufacturing yields, any of which would negatively impact our operating results. Although we generally do not begin a clinical trial unless we believe we have a sufficient supply of a product candidate to complete the clinical trial, any significant delay in the supply of a product candidate, or the raw material components thereof, for an ongoing clinical trial due to the need to replace a third-party manufacturer could considerably delay completion of our clinical trials, product testing, and potential regulatory approval of our product candidates. If our manufacturers or we are unable to purchase these raw materials after regulatory approval has been obtained for our product candidates, the commercial launch of our product candidates would be delayed or there would be a shortage in supply, which would impair our ability to generate revenues from the sale of our product candidates.

We rely, and expect to continue to rely, on third parties, including independent clinical investigators and CROs, to conduct our preclinical studies and clinical trials. If these third parties do not successfully carry out their contractual duties, comply with applicable regulatory requirements, or meet expected deadlines, we may not be able to obtain regulatory approval for or commercialize our product candidates and our business could be substantially harmed.

We do not currently have the ability to independently conduct any clinical trials. We have relied upon and plan to continue to rely upon third parties, including independent clinical investigators and third-party CROs, to conduct our preclinical studies and clinical trials and to monitor and manage data for our ongoing preclinical and clinical programs. We rely on these parties for execution of our preclinical studies and clinical trials, and control only certain aspects of their activities. Nevertheless, we are responsible for ensuring that each of our studies and trials is conducted in accordance with the applicable protocol, legal, regulatory, and scientific standards, and our reliance on these third parties does not relieve us of our regulatory responsibilities. We and our third-party

contractors and CROs are required to comply with GCP requirements, which are regulations and guidelines enforced by the FDA and comparable foreign regulatory authorities for all of our products candidates in clinical development. Regulatory authorities enforce these GCPs through periodic inspections of trial sponsors, principal investigators, and trial sites. If we or any of our CROs fail to comply with applicable GCPs, the clinical data generated in our clinical trials may be deemed unreliable and the FDA or comparable foreign regulatory authorities may require us to perform additional clinical trials before approving our marketing applications. We cannot assure you that upon inspection by a given regulatory authority, such regulatory authority will determine that any of our clinical trials comply with GCP regulations. In addition, our clinical trials must be conducted with product produced under cGMP regulations. Our failure to comply with these regulations may require us to repeat clinical trials, which would delay the regulatory approval process.

Further, these investigators and CROs are not our employees and we will not be able to control, other than by contract, the amount of resources, including time, that they devote to our product candidates and clinical trials. If independent investigators or CROs fail to devote sufficient resources to the development of our product candidates, or if their performance is substandard, it may delay or compromise the prospects for approval and commercialization of any product candidates that we develop. In addition, the use of third-party service providers may require us to disclose our proprietary information to these parties, which could increase the risk that this information will be misappropriated. Additionally, disruptions caused by the COVID-19 pandemic may increase the likelihood that our CROs encounter difficulties or delays in initiating, enrolling, conducting, or completing our planned clinical trials. In particular, as a result of the pandemic, we have experienced difficulty in accessing animal models, specifically non-human primate models, for the preclinical evaluation of our product candidates. Delays caused by the inability to access these models may cause our development timeline to be extended beyond what we anticipate.

Our CROs have the right to terminate their agreements with us in the event of an uncured material breach. In addition, some of our CROs have an ability to terminate their respective agreements with us if it can be reasonably demonstrated that the safety of the subjects participating in our clinical trials warrants such termination, if we make a general assignment for the benefit of our creditors, or if we are liquidated. Further, some of these agreements may also be terminated by such third parties on short notice, or under certain circumstances, including our insolvency.

There is a limited number of third-party service providers that specialize or have the expertise required to achieve our business objectives. Many of the third parties with whom we contract may also have relationships with other commercial entities, including our competitors, for whom they may also be conducting clinical trials or other drug development activities that could harm our competitive position. If any of our relationships with these third-party laboratories, CROs or clinical investigators terminate, we may not be able to enter into arrangements with alternative laboratories, CROs, or investigators or to do so in a timely manner or on commercially reasonable terms. If laboratories, CROs, or clinical investigators do not successfully carry out their contractual duties or obligations or meet expected deadlines, if they need to be replaced or if the quality or accuracy of the clinical data they obtain is compromised due to the failure to adhere to our preclinical or clinical protocols, regulatory requirements or for other reasons, our preclinical or clinical trials may be extended, delayed, or terminated and we may not be able to obtain regulatory approval for or successfully commercialize our product candidates. As a result, our results of operations and the commercial prospects for our product candidates would be harmed, our costs could increase, and our ability to generate revenues could be delayed. Switching or adding additional laboratories or CROs (or investigators) involves additional cost and requires management time and focus. In addition, there is a natural transition period when a new laboratory or CRO commences work. As a result, delays occur, which can materially impact our ability to meet our desired clinical development timelines. Additionally, CROs may lack the capacity to absorb higher workloads or take on additional capacity to support our needs. Though we carefully manage our relationships with our contracted laboratories and CROs, there can be no assurance that we will not encounter similar challenges or delays in the future or that these delays or challenges will not have a material adverse impact on our business, financial condition, and prospects.

We may not realize the benefits of any collaborative or licensing arrangement, and if we fail to enter into new strategic relationships our business, financial condition, commercialization prospects, and results of operations may be materially adversely affected.

Our product development programs and the potential commercialization of our product candidates will require substantial additional cash to fund expenses. Therefore, for some of our product candidates, we have entered into, and in the future may decide to enter into, collaborations with pharmaceutical or biopharmaceutical companies for the development and potential commercialization of those product candidates.

We face significant competition in seeking appropriate collaborators. Collaborations are complex and time-consuming to negotiate and document. We may also be restricted under existing and future collaboration agreements from entering into agreements on certain terms with other potential collaborators. We may not be able to negotiate collaborations on acceptable terms, or at all. If our strategic collaborations do not result in the successful development and commercialization of product candidates, or if one of our collaborators terminates its agreement with us, we may not receive any future research funding or milestone or royalty payments under the collaboration. Moreover, our estimates of the potential revenue we are eligible to receive under any strategic collaborations we may enter into may include potential payments related to therapeutic programs for which our collaborators may discontinue development in the future. If that were to occur, we may have to curtail the development of a particular product candidate, reduce or delay its development program or one or more of our other development programs, delay its potential commercialization or reduce the scope of our sales or marketing activities, or increase our expenditures and undertake development or commercialization activities at our own expense. If we elect to increase our expenditures to fund development or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we will not be able to bring our product candidates to market and generate product revenue.

In instances where we do enter into collaborations, we could be subject to the following risks, each of which may materially harm our business, commercialization prospects, and financial condition:

- we may not be able to control the amount and timing of resources that is required of us to complete our development obligations or that the collaboration partner devotes to the product development or marketing programs;
- the collaboration partner may experience financial difficulties;
- collaborators may delay clinical trials, provide insufficient funding for a clinical trial program, stop a clinical trial or abandon a product candidate, repeat or conduct new clinical trials, or require a new formulation of a product candidate for clinical testing;
- we may be required to relinquish important rights such as marketing, distribution, and intellectual property rights;
- collaborators may infringe the intellectual property rights of third parties, which may expose us to litigation and potential liability;
- a collaborator could move forward with a competing product developed either independently or in collaboration with third parties, including our competitors;
- we and our collaboration partner may disagree regarding the development plan for product candidates on which we are collaborating (for example, we may disagree with a collaboration partner regarding target indications or inclusion or exclusion criteria for a clinical trial); or
- business combinations or significant changes in a collaborator’s business strategy may adversely affect our willingness to complete our obligations under any arrangement.

If we license products or businesses, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture. We cannot be certain

that, following a strategic transaction or license, we will achieve the results, revenue, or specific net income that justifies such transaction.

Risks Related to Intellectual Property

We depend on intellectual property licensed from third parties and we are currently party to in-license agreements under which we acquired rights to use, develop, manufacture and/or commercialize certain of our proprietary technologies and product candidates. If we breach our obligations under these agreements or if any of these agreements is terminated, or otherwise experience disruptions to our business relationships with our licensors, we may be required to pay damages, lose our rights to such intellectual property and technology, or both, which would harm our business.

We are dependent on patents, know-how, and proprietary technology, both our own and licensed from others. We are a party to intellectual property license agreements and in the future, we may enter into additional license agreements. For example, with respect to developing our product candidates, we have licensed certain intellectual property from Amgen and TSRI. These license agreements impose, and we expect that future license and acquisition agreements will impose, various diligence, milestone payment, royalty and other obligations on us. If we fail to comply with our obligations under these agreements, we may be required to pay damages and the licensor may have the right to terminate the license. Any termination of these licenses could result in the loss of significant rights and could harm our ability to develop, manufacture and/or commercialize our product candidates. See the section titled “Business—Intellectual Property—In-Licensing and Collaboration Agreements” for additional information regarding these key agreements.

In addition, the agreements under which we license intellectual property or technology to or from third parties are complex, and certain provisions in such agreements may be susceptible to multiple interpretations. The resolution of any contract interpretation disagreement that may arise could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology or increase what we believe to be our financial or other obligations under the relevant agreement, either of which could have a material adverse effect on our business, financial condition, results of operations and prospects. Moreover, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on commercially acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates. Our business also would suffer if any current or future licensors fail to abide by the terms of the license, if the licensors fail to enforce licensed patents against infringing third parties, if the licensed patents or other rights are found to be invalid or unenforceable, or if we are unable to enter into necessary licenses on acceptable terms. Moreover, our licensors may own or control intellectual property that has not been licensed to us and, as a result, we may be subject to claims, regardless of their merit, that we are infringing or otherwise violating the licensor’s rights.

In addition, while we cannot currently determine the amount of the royalty obligations we would be required to pay on sales of future products, if any, the amounts may be significant. The amount of our future royalty obligations will depend on the technology and intellectual property we use in products that we successfully develop and commercialize, if any. Therefore, even if we successfully develop and commercialize products, we may be unable to achieve or maintain profitability.

If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property rights we have, we may have to abandon development of the relevant research programs or product candidates and our business, financial condition, results of operations and prospects could suffer.

Licensing of intellectual property is of critical importance to our business and involves complex legal, business and scientific issues and is complicated by the rapid pace of scientific discovery in our industry.

Disputes may also arise between us and our current and future licensors regarding intellectual property subject to a license agreement, including those relating to:

- the scope of rights granted under the license agreement and other interpretation-related issues;
- whether and the extent to which our technology and processes infringe on intellectual property of the licensor that is not subject to the license agreement;
- our right to sublicense patent and other rights to third parties under collaborative development relationships;
- whether we are complying with our diligence obligations with respect to the use of the licensed technology in relation to our development and commercialization of our product candidates, and what activities satisfy those diligence obligations;
- the priority of invention of patented technology;
- rights upon termination of the license agreements;
- the scope and duration of exclusivity obligations of each party to the license agreements;
- the amount and timing of payments owed under license agreements; and
- the allocation of ownership of inventions and know-how resulting from the joint creation or use of intellectual property by our licensors and by us and our partners.

The resolution of any contractual interpretation dispute that may arise, if unfavorable to us, could have a material adverse effect on our business, financial condition, results of operations and prospects. Such resolution could narrow what we believe to be the scope of our rights to the relevant intellectual property or technology, increase what we believe to be our financial or other obligations under the relevant agreement or decrease the third party's financial or other obligations under the relevant agreement. Furthermore, if disputes over intellectual property that we have licensed prevent or impair our ability to maintain our current licensing arrangements on acceptable terms, we may be unable to successfully develop and commercialize the affected product candidates. We are generally also subject to all of the same risks with respect to protection of intellectual property that we license as we are for intellectual property that we own, which are described below. If we or our licensors fail to adequately protect this intellectual property, our ability to commercialize our products could suffer.

We depend, in part, on our licensors to file, prosecute, maintain, defend, and enforce certain patents and patent applications that are material to our business.

Certain patents and patent applications relating to our product candidates are owned or controlled by certain of our licensors. In some circumstances, we may not have the right to control the preparation, filing, prosecution, maintenance, and defense of patent applications or patents covering technology that we license from third parties. In such circumstances, our licensors generally have rights to file, prosecute, maintain, and defend the licensed patents in their name, generally with our right to comment on such filing, prosecution, maintenance, and defense, with some obligation for the licensor to consider or incorporate our comments. We generally have the first right to enforce our exclusively licensed patent rights against third parties, although our ability to settle such claims often requires the consent of the licensor. If our licensors or any future licensees having rights to file, prosecute, maintain, and defend our patent rights fail to conduct these activities for patents or patent applications covering any of our product candidates, including due to the impact of the COVID-19 pandemic on our licensors' business operations, our ability to develop and commercialize those product candidates may be adversely affected and we may not be able to prevent competitors from making, using, or selling competing products. We cannot be certain that such activities by our licensors have been or will be conducted in compliance with applicable laws and regulations or will result in valid and enforceable patents or other intellectual property rights. Pursuant to the terms of the license agreements with some of our licensors, the licensors may have the right to control enforcement of our licensed patents or defense of any claims asserting the invalidity of these patents and, even in

the circumstances where we have the right to pursue such enforcement or defense, we cannot ensure the cooperation of our licensors. We cannot be certain that our licensors will allocate sufficient resources or prioritize their or our enforcement of such patents or defense of such claims to protect our interests in the licensed patents. Even if we are not a party to these legal actions, an adverse outcome could harm our business because it might prevent us from continuing to license intellectual property that we may need to operate our business. In addition, even when we have the right to control patent prosecution of licensed patents and patent applications, enforcement of licensed patents, or defense of claims asserting the invalidity of those patents, we may still be adversely affected or prejudiced by actions or inactions of our licensors and their counsel that took place prior to or after our assuming control. This could cause us to lose rights in any applicable intellectual property that we in-license, and as a result our ability to develop and commercialize product candidates may be adversely affected and we may be unable to prevent competitors from making, using and selling competing products.

Given the breadth of the application of our precision neuroscience platform, in order to increase our ability to exploit our technologies, we may enter into collaborations and/or strategic partnerships in the future, and we may not realize the anticipated benefits of such collaborations or partnerships. We may not be able to do so or to realize the potential benefits of such transactions, which may cause us to alter or delay our development and commercialization plans.

Research and development collaborations and strategic partnerships are prevalent in the biotechnology industry. The breadth of the application of our precision neuroscience platform is an attractive technology for potential collaborations and/or strategic partnerships. These transactions are subject to numerous risks, which may include the following:

- collaborators have significant discretion in determining the efforts and resources that they will apply to a collaboration, and may not commit sufficient efforts and resources, or may misapply those efforts and resources;
- collaborators may not pursue development and commercialization of collaboration product candidates or may elect not to continue or renew development or commercialization programs based on clinical trial results or changes in their strategic focus;
- collaborators may delay, provide insufficient resources to, or modify or stop clinical trials for collaboration product candidates;
- collaborators could develop or acquire products outside of the collaboration that compete directly or indirectly with our products or product candidates;
- collaborators may not properly maintain or defend our intellectual property rights or may use our intellectual property or proprietary information in a way that gives rise to actual or threatened litigation that could jeopardize or invalidate our intellectual property or proprietary information or expose us to potential liability;
- disputes may arise between us and a collaborator that cause the delay or termination of the research, development or commercialization of our product candidates, or that result in costly litigation or arbitration that diverts management attention and resources;
- collaborations may be terminated and, if terminated, may result in a need for additional capital and personnel to pursue further development or commercialization of the applicable product candidates; and
- collaborators may own or co-own intellectual property covering our products that results from our collaborating with them, and in such cases, we may not have the exclusive right to commercialize such intellectual property.

The development and potential commercialization of our product candidates will require substantial additional capital to fund expenses. We may form or seek further strategic alliances, create joint ventures or

collaborations, or enter into additional licensing arrangements with third parties that we believe will complement or augment our development and commercialization efforts with respect to our product candidates and any future product candidates that we may develop, including in territories outside the United States or for certain indications. These transactions can entail numerous operational and financial risks, including exposure to unknown liabilities, disruption of our business and diversion of our management's time and attention in order to manage a collaboration or develop acquired products, product candidates or technologies, incurrence of substantial debt or dilutive issuances of equity securities to pay transaction consideration or costs, higher than expected collaboration, acquisition or integration costs, write-downs of assets or goodwill or impairment charges, increased amortization expenses, difficulty and cost in facilitating the collaboration or combining the operations and personnel of any acquired business, impairment of relationships with key suppliers, manufacturers or customers of any acquired business due to changes in management and ownership and the inability to retain key employees of any acquired business. As a result, if we enter into acquisition or in-license agreements or strategic partnerships, we may not be able to realize the benefit of such transactions if we are unable to successfully integrate them with our existing operations and company culture, or if there are materially adverse impacts on our or the counterparty's operations resulting from COVID-19, which could delay our timelines or otherwise adversely affect our business. We also cannot be certain that, following a strategic transaction or license, we will achieve the revenue or specific net income that justifies such transaction or such other benefits that led us to enter into the arrangement.

In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. We may not be successful in our efforts to establish a strategic partnership or other alternative arrangements for our product candidates because they may be deemed to be at too early of a stage of development for collaborative effort and third parties may not view our product candidates as having the requisite potential to demonstrate safety and efficacy. If and when we collaborate with a third-party for development and commercialization of a product candidate, we can expect to relinquish some or all of the control over the future success of that product candidate to the third-party. Our ability to reach a definitive agreement for a collaboration will depend, among other things, upon our assessment of the collaborator's resources and expertise, the terms and conditions of the proposed collaboration and the proposed collaborator's evaluation of our technologies, product candidates and market opportunities. The collaborator may also consider alternative product candidates or technologies for similar indications that may be available to collaborate on and whether such a collaboration could be more attractive than the one with us for our product candidate. We may also be restricted under any license agreements from entering into agreements on certain terms or at all with potential collaborators.

As a result of these risks, we may not be able to realize the benefit of our existing collaboration or any future collaborations or licensing agreements we may enter into. In addition, there have been a significant number of recent business combinations among large pharmaceutical companies that have resulted in a reduced number of potential future collaborators and changes to the strategies of the combined company. As a result, we may not be able to negotiate collaborations on a timely basis, on acceptable terms, or at all. If we are unable to do so, we may have to curtail the development of such product candidate, reduce or delay one or more of our other development programs, delay the potential commercialization or reduce the scope of any planned sales or marketing activities for such product candidate, or increase our expenditures and undertake development, manufacturing or commercialization activities at our own expense. If we elect to increase our expenditures to fund development, manufacturing or commercialization activities on our own, we may need to obtain additional capital, which may not be available to us on acceptable terms or at all. If we do not have sufficient funds, we may not be able to further develop our product candidates or bring them to market and generate product revenue.

Our product candidates may also require specific components to work effectively and efficiently, and rights to those components may be held by others. We may be unable to in-license any compositions, methods of use, processes or other third party intellectual property rights from third parties that we identify. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, which would harm our business. In that event, we may be required to expend significant time and resources to develop or license replacement

technology. Even if we are able to obtain a license, it may be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. Any delays in entering into new collaborations or strategic partnership agreements related to our product candidates could delay the development and commercialization of our product candidates in certain geographies, which could harm our business prospects, financial condition and results of operations.

Moreover, some of our owned and in-licensed patents or patent applications or future patents are or may be co-owned with third parties. If we are unable to obtain an exclusive license to any such third-party co-owners' interest in such patents or patent applications, such co-owners may be able to license their rights to other third parties, including our competitors, and our competitors could market competing products and technology. In addition, we may need the cooperation of any such co-owners of our patents in order to enforce such patents against third parties, and such cooperation may not be provided to us. Furthermore, our owned and in-licensed patents may be subject to a reservation of rights by one or more third parties. Any of the foregoing could have a material adverse effect on our competitive position, business, financial condition, results of operations and prospects.

We may not be successful in obtaining or maintaining necessary rights for our product pipeline which may cause us to operate our business in a more costly or otherwise adverse manner that was not anticipated.

We own or license from third parties certain intellectual property rights necessary to develop our product candidates. The growth of our business will likely depend in part on our ability to acquire or in-license additional proprietary rights, including to expand our product pipeline. In that event, we may be required to expend considerable time and resources to develop or license replacement technology. For example, our programs may involve additional technologies or product candidates that may require the use of additional proprietary rights held by third parties. Furthermore, other pharmaceutical companies and academic institutions may also have filed or are planning to file patent applications potentially relevant to our business. Our product candidates may also require specific formulations or other technology to work effectively and efficiently. These formulations or technology may be covered by intellectual property rights held by others. From time to time, in order to avoid infringing these third-party rights, we may be required to license technology from additional third parties to further develop or commercialize our product candidates. We may be unable to acquire or in-license any relevant third-party intellectual property rights, including any such intellectual property rights required to manufacture, use or sell our product candidates, that we identify as necessary or important to our business operations. We may fail to obtain any of these licenses at a reasonable cost or on reasonable terms, if at all, and as a result we may be unable to develop or commercialize the affected product candidates, which would harm our business. We may need to cease use of the compositions or methods covered by such third-party intellectual property rights, and may need to seek to develop alternative approaches that do not infringe on such intellectual property rights which may entail additional costs and development delays, even if we were able to develop such alternatives, which may not be feasible. Even if we are able to obtain a license under such intellectual property rights, any such license may be non-exclusive, which may allow our competitors' access to the same technologies licensed to us.

Additionally, we sometimes collaborate with academic institutions to accelerate our preclinical research or development under written agreements with these institutions. Typically, these institutions provide us with an option to negotiate a license to any of the institution's rights in technology resulting from the collaboration. Regardless of such option, we may be unable to negotiate a license within the specified timeframe or under terms that are acceptable to us. If we are unable to do so, the institution may offer the intellectual property rights to other parties, potentially blocking our ability to pursue our program. If we are unable to successfully obtain rights to required third-party intellectual property or to maintain the existing intellectual property rights we have, we may have to abandon development of such program and our business and financial condition could suffer.

The licensing and acquisition of third-party intellectual property rights is a competitive practice, and companies that may be more established, or have greater resources than we do, may also be pursuing strategies to license or acquire third-party intellectual property rights that we may consider necessary or attractive in order to

commercialize our product candidates. More established companies may have a competitive advantage over us due to their larger size and cash resources or greater clinical development and commercialization capabilities. There can be no assurance that we will be able to successfully complete such negotiations and ultimately acquire the rights to the intellectual property surrounding the additional product candidates that we may seek to acquire.

We may be dependent on intellectual property licensed or sublicensed to us from, or for which development was funded or otherwise assisted by, the U.S. government and/or government agencies, such as the National Institutes of Health, for development of our technology and product candidates. Failure to meet our own obligations to our licensors or upstream licensors, including such government agencies, may result in the loss of our rights to such intellectual property, which could harm our business.

The U.S. government and/or government agencies have provided, and in the future may provide, funding, facilities, personnel or other assistance in connection with the development of the intellectual property rights owned by or licensed to us. The U.S. government and/or government agencies may have retained rights in such intellectual property, including the right to grant or require us to grant mandatory licenses or sublicenses to such intellectual property to third parties under certain specified circumstances, including if it is necessary to meet health and safety needs that we are not reasonably satisfying or if it is necessary to meet requirements for public use specified by federal regulations, or to manufacture products in the United States. Any exercise of such rights, including with respect to any such required sublicense of these licenses, could result in the loss of significant rights and could harm our ability to commercialize licensed products. For example, the research resulting in certain of our in-licensed patent rights and technology was funded in part by the U.S. government. As a result, the government may have certain rights, or march-in rights, to such patent rights and technology. These rights may permit the government to disclose our confidential information to third parties and to exercise march-in rights to use or allow third parties to use our licensed technology.

If we are unable to obtain and maintain sufficient intellectual property protection for our platform and product candidates, or if the scope of the intellectual property protection is not sufficiently broad, our competitors could develop and commercialize products similar or identical to ours, and our ability to successfully commercialize our products may be adversely affected. We cannot ensure that patent rights relating to inventions described and claimed in our pending patent applications will issue or that patents based on our patent applications will not be challenged and rendered invalid and/or unenforceable.

We or our licensors have filed, and we anticipate that in the future we will file additional patent applications both in the United States and in other countries, as appropriate. However, we cannot predict:

- if and when any patents will issue;
- the degree and range of protection any issued patents will afford us against competitors, including whether third parties will find ways to invalidate or otherwise circumvent our patents;
- whether others will apply for or obtain patents claiming aspects similar to those covered by our patents and patent applications;
- whether we will need to initiate litigation or administrative proceedings to defend our patent rights, which may be costly whether we win or lose; or
- whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries.

Our success depends in large part on our ability to obtain and maintain patent protection in the United States and other countries with respect to our platform and product candidates. We seek to protect our proprietary position by filing patent applications in the United States and abroad related to our novel discoveries and technologies that are important to our business.

Obtaining and enforcing patents is expensive and time-consuming, and we may not be able to file and prosecute all necessary or desirable patent applications or maintain and/or enforce patents that may issue based

on our patent applications, at a reasonable cost or in a timely manner, including as a result of the COVID-19 pandemic impacting our or our licensors' operations. It is also possible that we will fail to identify patentable aspects of our research and development results before it is too late to obtain patent protection. Although we enter into non-disclosure and confidentiality agreements with parties who have access to patentable aspects of our research and development output, such as our employees, corporate collaborators, outside scientific collaborators, contract research organizations, contract manufacturers, consultants, advisors and other third parties, any of these parties may breach these agreements and disclose such results before a patent application is filed, thereby jeopardizing our ability to seek patent protection.

Our ability to enforce patent rights also depends on our ability to detect infringement. It may be difficult to detect infringers who do not advertise the components or methods that are used in connection with their products and services. Such proceedings could also provoke third parties to assert claims against us, including that some or all of the claims in one or more of our patents are invalid or otherwise unenforceable. Moreover, it may be difficult or impossible to obtain evidence of infringement in a competitor's or potential competitor's product or service. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded if we were to prevail may not be commercially meaningful. If we initiate lawsuits to protect or enforce our patents, or litigate against third-party claims, such proceedings would be expensive and would divert the attention of our management and technical personnel.

Composition of matter patents for biological and pharmaceutical products often provide a strong form of intellectual property protection for those types of products, as such patents provide protection without regard to any method of use. We cannot be certain, however, that the claims in our pending patent applications covering the composition of matter of our product candidates will be considered patentable by the United States Patent and Trademark Office (USPTO), or by patent offices in foreign countries, or that the claims in any of our issued patents will be considered valid and enforceable by courts in the United States or foreign countries. Method of use patents protect the use of a product for the specified method. This type of patent does not prevent a competitor from making and marketing a product that is identical to our product for an indication that is outside the scope of the patented method. Moreover, even if competitors do not actively promote their product for our targeted indications, physicians may prescribe these products "off-label" for those uses that are covered by our method of use patents. Although off-label prescriptions may infringe or contribute to the infringement of method of use patents, the practice is common and such infringement can be difficult to prevent or prosecute.

The strength of patents in the biotechnology, pharmaceutical and data science fields can be uncertain, and evaluating the scope of such patents involves complex legal, factual and scientific analyses and has in recent years been the subject of much litigation, resulting in court decisions, including Supreme Court decisions, which have increased uncertainties as to the ability to enforce patent rights in the future. The patent applications that we own or in-license may fail to result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries. Even if the patents do successfully issue, third parties may challenge the validity, enforceability, or scope thereof, which may result in such patents being narrowed, invalidated, or held unenforceable. In the event of litigation or administrative proceedings, we cannot be certain that the claims in any of our issued patents will be considered valid by courts in the United States or foreign countries. Furthermore, even if they are unchallenged, our patents and patent applications may not adequately protect our intellectual property or prevent others from designing their products to avoid being covered by our claims. If the breadth or strength of protection provided by the patent applications we hold with respect to our product candidates is threatened, this could dissuade companies from collaborating with us to develop, and could threaten our ability to commercialize, our product candidates. In addition, the laws of foreign countries may not protect our rights to the same extent as the laws of the United States, or vice versa. Further, if we encounter delays in our clinical trials, the period of time during which we could market our product candidates under patent protection would be reduced.

We may not identify relevant third-party patents or may incorrectly interpret the relevance, scope or expiration of a third-party patent, which might adversely affect our ability to develop and market our products.

We cannot guarantee that any of our patent searches or analyses, including the identification of relevant patents, the scope of patent claims or the expiration of relevant patents, are complete or thorough, nor can we be certain that we have identified each and every third-party patent and pending application in the United States and abroad that is relevant to or necessary for the commercialization of our product candidates in any jurisdiction. The scope of a patent claim is determined by an interpretation of the law, the written disclosure in a patent and the patent's prosecution history. Our interpretation of the relevance or the scope of a patent or a pending application may be incorrect, which may negatively impact our ability to market our products. We may incorrectly determine that our products are not covered by a third-party patent or may incorrectly predict whether a third-party's pending application will issue with claims of relevant scope. Our failure to identify and correctly interpret relevant patents may negatively impact our ability to develop and market our products.

One aspect of the determination of patentability of our inventions depends on the scope and content of the "prior art," information that was or is deemed available to a person of skill in the relevant art prior to the priority date of the claimed invention. There may be prior art of which we are not aware that may affect the patentability of our patent claims or, if issued, affect the validity or enforceability of a patent claim. Further, we may not be aware of all third-party intellectual property rights potentially relating to our product candidates or their intended uses, and as a result the impact of such third-party intellectual property rights upon the patentability of our own patents and patent applications, as well as the impact of such third-party intellectual property upon our freedom to operate, is highly uncertain. Because patent applications in the United States and most other countries are confidential for typically a period of 18 months after filing, or may not be published at all, we cannot be certain that we were the first to file any patent application related to our product candidates. As a result, the issuance, scope, validity, enforceability and commercial value of our patent rights are highly uncertain. Furthermore, for U.S. applications in which all claims are entitled to a priority date before March 16, 2013, an interference proceeding can be provoked by a third party or instituted by the USPTO to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. For U.S. applications containing a claim not entitled to priority before March 16, 2013, there is a greater level of uncertainty in the patent law in view of the passage of the America Invents Act, which brought into effect significant changes to the U.S. patent laws, including new procedures for challenging pending patent applications and issued patents.

Our patents or pending patent applications may be challenged in the courts or patent offices in the United States and abroad. For example, we may be subject to a third-party pre-issuance submission of prior art to the USPTO or become involved in post-grant review procedures, oppositions, derivations, reexaminations, or *inter partes* review proceedings, in the United States or elsewhere, challenging our patent rights or the patent rights of others. An adverse determination in any such challenges may result in loss of exclusivity or in patent claims being narrowed, invalidated, or held unenforceable, in whole or in part, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology and products. In addition, given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such candidates are commercialized. Any failure to obtain or maintain patent protection with respect to our product candidates could have a material adverse effect on our business, financial condition, results of operations and prospects.

Intellectual property rights do not necessarily address all potential threats to our competitive advantage.

The degree of future protection afforded by our intellectual property rights is uncertain because intellectual property rights have limitations and may not adequately protect our business or permit us to maintain our competitive advantage. For example:

- others may be able to make product candidates that are similar to ours but that are not covered by the claims of the patents that we own or have exclusively licensed;

- we or our licensors or future collaborators might not have been the first to make the inventions covered by the issued patent or pending patent application that we own or have exclusively licensed;
- we or our licensors or future collaborators might not have been the first to file patent applications covering certain of our inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies without infringing our intellectual property rights;
- it is possible that our pending patent applications will not lead to issued patents;
- issued patents that we own or have exclusively licensed may be held invalid or unenforceable, as a result of legal challenges by our competitors;
- our competitors might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets;
- we may not develop additional proprietary technologies that are patentable;
- we cannot predict the scope of protection of any patent issuing based on our patent applications, including whether the patent applications that we own or in-license will result in issued patents with claims that cover our product candidates or uses thereof in the United States or in other foreign countries;
- the claims of any patent issuing based on our patent applications may not provide protection against competitors or any competitive advantages, or may be challenged by third parties;
- if enforced, a court may not hold that our patents are valid, enforceable and infringed;
- we may need to initiate litigation or administrative proceedings to enforce and/or defend our patent rights which will be costly whether we win or lose;
- we may choose not to file a patent in order to maintain certain trade secrets or know-how, and a third party may subsequently file a patent covering such intellectual property;
- we may fail to adequately protect and police our trademarks and trade secrets; and
- the patents of others may have an adverse effect on our business, including if others obtain patents claiming subject matter similar to or improving that covered by our patents and patent applications.

Should any of these events occur, they could significantly harm our business, results of operations and prospects.

Confidentiality agreements with employees and third parties may not prevent unauthorized disclosure of trade secrets and other proprietary information. If we are unable to protect the confidentiality of our trade secrets, our business and competitive position would be harmed.

In addition to the protection afforded by patents, we rely on trade secret protection and confidentiality agreements to protect proprietary know-how that is not patentable or that we elect not to patent, processes for which patents are difficult to enforce, and any other elements of our product candidates, technology and product discovery and development processes that involve proprietary know-how, information, or technology that is not covered by patents. Any disclosure, either intentional or unintentional, by our employees, the employees of third parties with whom we share our facilities or third-party consultants and vendors that we engage to perform research, clinical trials or manufacturing activities, or misappropriation by third parties (such as through a cybersecurity breach) of our trade secrets or proprietary information could enable competitors to duplicate or surpass our technological achievements, thus eroding our competitive position in our market. Because we expect to rely on third parties in the development and manufacture of our product candidates, we must, at times, share trade secrets with them. Our reliance on third parties requires us to share our trade secrets, which increases the possibility that a competitor will discover them or that our trade secrets will be misappropriated or disclosed.

Trade secrets and confidential information, however, may be difficult to protect. We seek to protect our trade secrets, know-how and confidential information, including our proprietary processes, in part, by entering into confidentiality agreements with our employees, consultants, outside scientific advisors, contractors, and collaborators. We require our employees to enter into written employment agreements containing provisions of confidentiality and obligations to assign to us any inventions generated in the course of their employment. With our consultants, contractors, and outside scientific collaborators, these agreements typically include invention assignment obligations. We cannot guarantee that we have entered into such agreements with each party that may have or has had access to our trade secrets or proprietary technology and processes. Although we use reasonable efforts to protect our trade secrets, our employees, consultants, outside scientific advisors, contractors, and collaborators might intentionally or inadvertently disclose our trade secret information to competitors. In addition, competitors may otherwise gain access to our trade secrets or independently develop substantially equivalent information and techniques. Despite these efforts, any of these parties may breach the agreements and disclose our proprietary information, including our trade secrets, and we may not be able to obtain adequate remedies for such breaches. Enforcing a claim that a party illegally disclosed or misappropriated a trade secret is difficult, expensive and time-consuming, and the outcome is unpredictable. If any of our trade secrets were to be lawfully obtained or independently developed by a competitor or other third party, we would have no right to prevent them from using that technology or information to compete with us. Furthermore, the laws of some foreign countries do not protect proprietary rights to the same extent or in the same manner as the laws of the United States. As a result, we may encounter significant problems in protecting and defending our intellectual property both in the United States and abroad. If we are unable to prevent unauthorized material disclosure of our intellectual property to third parties, or misappropriation of our intellectual property by third parties, we will not be able to establish or maintain a competitive advantage in our market, which could materially adversely affect our business, operating results, and financial condition.

Third-party claims of intellectual property infringement against us or our collaborators may prevent or delay our product discovery and development efforts.

Our commercial success depends in part on our avoiding infringement of the patents and proprietary rights of third parties. There is a substantial amount of litigation involving patents and other intellectual property rights in the biotechnology and pharmaceutical industries, as well as administrative proceedings for challenging patents, including interference, derivation, *inter partes* review, post-grant review and reexamination proceedings before the USPTO or oppositions and other comparable proceedings in foreign jurisdictions. Furthermore, patent reform and changes to patent laws add uncertainty to the possibility of challenge to our patents in the future. We cannot assure you that our product candidates and other proprietary technologies we may develop will not infringe existing or future patents owned by third parties. Litigation or other legal proceedings relating to intellectual property claims, with or without merit, is unpredictable and generally expensive and time consuming and, even if resolved in our favor, is likely to divert significant resources from our core business, including distracting our technical and management personnel from their normal responsibilities. Such litigation or proceedings could substantially increase our operating losses and reduce the resources available for development activities or any future sales, marketing or distribution activities. We may not have sufficient financial or other resources to adequately conduct such litigation or proceedings. Some of our competitors may be able to sustain the costs of such litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. Uncertainties resulting from the initiation and continuation of patent litigation or other proceedings could have a material adverse effect on our ability to compete in the marketplace.

Numerous U.S. and foreign issued patents and pending patent applications owned by third parties exist in the fields in which we are developing our product candidates. We cannot provide any assurances that third-party patents do not exist which might be enforced against our current product candidates or future products, resulting in either an injunction prohibiting our sales, or, with respect to our sales, an obligation on our part to pay royalties and/or other forms of compensation to third parties. As the biotechnology and pharmaceutical industries expand and more patents are issued, the risk increases that our product candidates may give rise to claims of

infringement of the patent rights of others. Third parties may assert that we infringe their patents or other intellectual property, or that we are otherwise employing their proprietary technology without authorization, and may sue us. There may be third-party patents of which we are currently unaware with claims to compositions, formulations, methods of manufacture, or methods of use or treatment that cover our product candidates. It is also possible that patents owned by third parties of which we are aware, but which we do not believe are relevant to our product candidates and other proprietary technologies we may develop, could be found to be infringed by our product candidate. Because patent applications can take many years to issue, there may be currently pending patent applications that may later result in issued patents that our product candidates may infringe. In addition, third parties, our competitors in both the United States and abroad, many of which have substantially greater resources and have made substantial investments in patent portfolios and competing technologies, may obtain patents in the future that may prevent, limit or otherwise interfere with our ability to make, use and sell our product candidates, and may claim that use of our technologies or the manufacture, use, or sale of our product candidates infringes upon these patents. If any such third-party patents were held by a court of competent jurisdiction to cover our technologies or product candidates, or if we are found to otherwise infringe a third-party's intellectual property rights, the holders of any such patents may be able to block, including by court order, our ability to develop, manufacture or commercialize the applicable product candidate unless we obtain a license under the applicable patents or other intellectual property, or until such patents expire or are finally determined to be held invalid or unenforceable. Such a license may not be available on commercially reasonable terms or at all. Even if we were able to obtain a license, it could be non-exclusive, thereby giving our competitors access to the same technologies licensed to us. If we are unable to obtain a necessary license to a third-party patent on commercially reasonable terms, our ability to commercialize our product candidates may be impaired or delayed, which could in turn significantly harm our business.

The pharmaceutical and biotechnology industries have produced a considerable number of patents, and it may not always be clear to industry participants, including us, which patents cover various types of products or methods of use. The coverage of patents is subject to interpretation by the courts, and the interpretation is not always uniform. If we were sued for patent infringement, we would need to demonstrate that our product candidates, products or methods either do not infringe the patent claims of the relevant patent or that the patent claims are invalid or unenforceable, and we may not be able to do this. Proving invalidity may be difficult. For example, in the United States, proving invalidity in court requires a showing of clear and convincing evidence to overcome the presumption of validity enjoyed by issued patents, and there is no assurance that a court of competent jurisdiction would invalidate the claims of any such U.S. patent. Even if we are successful in these proceedings, we may incur substantial costs and the time and attention of our management and scientific personnel could be diverted in pursuing these proceedings, which could have a material adverse effect on our business and operations. In addition, we may not have sufficient resources to bring these actions to a successful conclusion.

Third parties asserting their patent or other intellectual property rights against us may seek and obtain injunctive or other equitable relief, which could effectively block our ability to further develop and commercialize our product candidates or force us to cease some of our business operations. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of management and other employee resources from our business, cause development delays, and may impact our reputation. In the event of a successful claim of infringement against us, we may have to pay substantial damages, including treble damages and attorneys' fees for willful infringement, obtain one or more licenses from third parties, pay royalties, or redesign our infringing products, which may be impossible on a cost-effective basis or require substantial time and monetary expenditure. In that event, we would be unable to further develop and commercialize our product candidates, which could harm our business significantly. Claims that we have misappropriated the confidential information or trade secrets of third parties could have a similar negative impact on our business.

We may not be able to protect our intellectual property rights throughout the world.

Patents are of national or regional effect, and filing, prosecuting, maintaining and defending patents on product candidates in all countries throughout the world would be prohibitively expensive, and our intellectual

property rights in some countries outside the United States can have a different scope and strength than do those in the United States. In addition, the laws of some foreign countries, particularly certain developing countries, do not protect intellectual property rights to the same extent as federal and state laws in the United States. Consequently, we may not be able to prevent third parties from practicing our inventions in all countries outside the United States, or from selling or importing products made using our inventions in and into the United States or other jurisdictions. Competitors may use our technologies in jurisdictions where we have not obtained patent protection to develop their own products and further, may export otherwise infringing products to territories where we have patent protection, but enforcement rights are not as strong as those in the United States. These products may compete with our products and our patents or other intellectual property rights may not be effective or adequate to prevent them from competing.

Many companies have encountered significant problems in protecting and defending intellectual property rights in foreign jurisdictions. The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property, particularly those relating to biopharmaceutical products, which could make it difficult in those jurisdictions for us to stop the infringement or misappropriation of our patents or other intellectual property rights, or the marketing of competing products in violation of our proprietary rights. Proceedings to enforce our patent and other intellectual property rights in foreign jurisdictions could result in substantial costs and divert our efforts and attention from other aspects of our business. Furthermore, such proceedings could put our patents at risk of being invalidated, held unenforceable, or interpreted narrowly, could put our patent applications at risk of not issuing, and could provoke third parties to assert claims of infringement or misappropriation against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Similarly, if our trade secrets are disclosed in a foreign jurisdiction, competitors worldwide could have access to our proprietary information and we may be without satisfactory recourse. Such disclosure could have a material adverse effect on our business. Moreover, our ability to protect and enforce our intellectual property rights may be adversely affected by unforeseen changes in foreign intellectual property laws. In addition, certain developing countries, including China and India, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to third parties. In those countries, we and our licensors may have limited remedies if patents are infringed or if we or our licensors are compelled to grant a license to a third-party, which could materially diminish the value of those patents. In addition, many countries limit the enforceability of patents against government agencies or government contractors. This could limit our potential revenue opportunities. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

Because of the expense and uncertainty of litigation, we may conclude that even if a third-party is infringing our issued patents, any patents that may be issued as a result of our pending or future patent applications or other intellectual property rights, the risk-adjusted cost of bringing and enforcing such a claim or action, which typically last for years before they are concluded, may be too high or not in the best interest of our company or our stockholders, or it may be otherwise impractical or undesirable to enforce our intellectual property against some third parties. Our competitors or other third parties may be able to sustain the costs of complex patent litigation or proceedings more effectively than we can because of their greater financial resources and more mature and developed intellectual property portfolios. In such cases, we may decide that the monetary cost of such litigation and the diversion of the attention of our management and scientific personnel could outweigh any benefit we receive as a result of the proceedings and that the more prudent course of action is to simply monitor the situation or initiate or seek some other non-litigious action or solution. In addition, the uncertainties associated with litigation could compromise our ability to raise the funds necessary to continue our clinical trials, continue our internal research programs, in-license needed technology or other product candidates, or enter into development partnerships that would help us bring our product candidates to market.

We may be involved in lawsuits to protect or enforce our patents or other intellectual property or the intellectual property of our licensors, which could be expensive, time-consuming, and unsuccessful.

Competitors may infringe our patents or other intellectual property or the intellectual property of our licensors. To cease such infringement or unauthorized use, we may be required to file patent infringement claims, which can be expensive and time-consuming and divert the time and attention of our management and scientific personnel. Our pending patent applications cannot be enforced against third parties practicing the technology claimed in such applications unless and until a patent issues from such applications. In addition, in an infringement proceeding or a declaratory judgment action, a court may decide that one or more of our patents is not valid or is unenforceable, or may refuse to stop the other party from using the technology at issue on the grounds that our patents do not cover the technology in question. An adverse result in any litigation or defense proceeding could put one or more of our patents at risk of being invalidated, held unenforceable, or interpreted narrowly and could put our patent applications at risk of not issuing. Defense of these claims, regardless of their merit, would involve substantial litigation expense and would be a substantial diversion of employee resources from our business.

Interference or derivation proceedings provoked by third parties or brought by the USPTO may be necessary to determine the priority of inventions with respect to, or the correct inventorship of, our patents or patent applications or those of our licensors. An unfavorable outcome could result in a loss of our current patent rights and could require us to cease using the related technology or to attempt to license rights to it from the prevailing party. Our business could be harmed if the prevailing party does not offer us a license on commercially reasonable terms. Litigation, interference, derivation or other proceedings may result in a decision adverse to our interests and, even if we are successful, may result in substantial costs and distract our management and other employees.

Even if we establish infringement, the court may decide not to grant an injunction against further infringing activity and instead award only monetary damages, which may or may not be an adequate remedy. Furthermore, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. In addition, there could be public announcements of the results of hearings, motions or other interim proceedings or developments. If securities analysts or investors perceive these results to be negative, it could have a substantial adverse effect on the price of our common stock.

Issued patents covering our product candidates could be found invalid or unenforceable if challenged in court or before the USPTO or comparable foreign authority.

If we or one of our licensing partners initiate legal proceedings against a third party to enforce a patent covering one of our product candidates, the defendant could counterclaim we infringe their patents or that the patent covering our product candidate is invalid or unenforceable, or both. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace, and there are numerous grounds upon which a third party can assert invalidity or unenforceability of a patent, including lack of novelty, obviousness, non-enablement or insufficient written description or that that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Third parties may also raise similar claims before administrative bodies in the United States or abroad, even outside the context of litigation. Such mechanisms include re-examination, *inter partes* review, post-grant review, and equivalent proceedings in foreign jurisdictions, such as opposition or derivation proceedings. Such proceedings could result in revocation or amendment to our patents in such a way that they no longer cover and protect our product candidates. The outcome following legal assertions of invalidity and unenforceability is unpredictable. In any patent infringement proceeding, there is a risk that a court will decide that a patent of ours is invalid or unenforceable, in whole or in part, and that we do not have the right to stop the other party from using the invention at issue. There is also a risk that, even if the validity of such patents is upheld, the court will construe the patent’s claims narrowly or decide that we do not have the right to stop the other party from using

the invention at issue on the grounds that our patent claims do not cover the invention, or decide that the other party's use of our patented technology falls under the safe harbor to patent infringement under 35 U.S.C. § 271(e)(1). With respect to the validity of our patents, for example, we cannot be certain that there is no invalidating prior art of which we, our patent counsel, and the patent examiner were unaware during prosecution. If a defendant were to prevail on a legal assertion of invalidity and/or unenforceability, we would lose at least part, and perhaps all, of the patent protection on our product candidates and such an outcome may limit our ability to assert our patents against those parties or other competitors and may curtail or preclude our ability to exclude third parties from making and selling similar or competitive products. Such a loss of patent protection could have a material adverse impact on our business. Similarly, if we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products.

As is the case with other biopharmaceutical companies, our success is heavily dependent on intellectual property, particularly patents. Obtaining and enforcing patents in the biopharmaceutical industry involves both technological and legal complexity, and is therefore costly, time-consuming, and inherently uncertain. Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs, and may diminish our ability to protect our inventions, obtain, maintain, and enforce our intellectual property rights and, more generally, could affect the value of our intellectual property or narrow the scope of our owned and licensed patents. Recent patent reform legislation in the United States and other countries, including the Leahy-Smith America Invents Act, or the Leahy-Smith Act, signed into law on September 16, 2011, could increase those uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. The Leahy-Smith Act includes a number of significant changes to U.S. patent law. These include provisions that affect the way patent applications are prosecuted, redefine prior art and provide more efficient and cost-effective avenues for competitors to challenge the validity of patents. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, *inter partes* review, and derivation proceedings. After March 2013, under the Leahy-Smith Act, the United States transitioned to a first inventor to file system in which, assuming that the other statutory requirements are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third-party was the first to invent the claimed invention. A third party that files a patent application in the USPTO after March 2013, but before we file an application covering the same invention, could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant going forward of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we or our licensors were the first to either (1) file any patent application related to our product candidates and other proprietary technologies we may develop or (2) invent any of the inventions claimed in our or our licensor's patents or patent applications. Even where we have a valid and enforceable patent, we may not be able to exclude others from practicing the claimed invention where the other party can show that they used the invention in commerce before our filing date or the other party benefits from a compulsory license. However, the Leahy-Smith Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents, all of which could have a material adverse effect on our business, financial condition, results of operations and prospects.

Recent U.S. Supreme Court rulings have narrowed the scope of patent protection available in certain circumstances and weakened the rights of patent owners in certain situations. In addition to increasing uncertainty with regard to our ability to obtain patents in the future, this combination of events has created uncertainty with respect to the value of patents once obtained. Depending on decisions by Congress, the federal

courts, the USPTO and the relevant law-making bodies in other countries, the laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents and patents that we might obtain in the future. For example, in a series of cases, the U.S. Supreme Court held that certain claims do not present patentable subject matter (*Mayo Collaborative Services v. Prometheus Laboratories, Inc.* (2012); *Assoc. for Molecular Pathology v. Myriad Genetics, Inc.* (2013); *Alice Corp. v. CLS Bank International* (2014)). Although we do not believe that any of the patents owned or licensed by us will be found invalid based on this decision, we cannot predict how future decisions by Congress, the federal courts or the USPTO may impact the value of our patents.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment, and other requirements imposed by governmental patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees on any issued patent are due to be paid to the USPTO and foreign patent agencies in several stages over the lifetime of the patent. The USPTO and various foreign governmental patent agencies require compliance with a number of procedural, documentary, fee payment, and other similar provisions during the patent application process. Although an inadvertent lapse, including due to the effect of the COVID-19 pandemic on us or our patent maintenance vendors, can in many cases be cured by payment of a late fee or by other means in accordance with the applicable rules, there are situations in which noncompliance can result in abandonment or lapse of the patent or patent application, resulting in partial or complete loss of patent rights in the relevant jurisdiction. Noncompliance events that could result in abandonment or lapse of a patent or patent application include failure to respond to official actions within prescribed time limits, non-payment of fees, and failure to properly legalize and submit formal documents. In any such event, our competitors might be able to enter the market, which would have a material adverse effect on our business.

The lives of our patents may not be sufficient to effectively protect our products and business.

Patents have a limited lifespan. In the United States, if all maintenance fees are paid timely, the natural expiration of a patent is generally 20 years after its first effective filing date. Although various extensions may be available, the life of a patent, and the protection it affords, is limited. Given the amount of time required for the development, testing and regulatory review of new product candidates, patents protecting such candidates might expire before or shortly after such product candidates are commercialized. Even if patents covering our product candidates are obtained, once the patent life has expired for a product, we may be open to competition from biosimilar or generic medications. The launch of a generic version of one of our products in particular would be likely to result in an immediate and substantial reduction in the demand for that product, which could have a material adverse effect on our business, financial condition, results of operations and prospects. As a result, our patent portfolio may not provide us with sufficient rights to exclude others from commercializing product candidates similar or identical to ours. In addition, although upon issuance in the United States a patent's life can be increased based on certain delays caused by the USPTO, this increase can be reduced or eliminated based on certain delays caused by the patent applicant during patent prosecution. A patent term extension based on regulatory delay may be available in the United States. However, only a single patent can be extended for each marketing approval, and any patent can be extended only once, for a single product. Moreover, the scope of protection during the period of the patent term extension does not extend to the full scope of the claim, but instead only to the scope of the product as approved. Laws governing analogous patent term extensions in foreign jurisdictions vary widely, as do laws governing the ability to obtain multiple patents from a single patent family. Additionally, we may not receive an extension if we fail to exercise due diligence during the testing phase or regulatory review process, apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. If we are unable to obtain patent term extension or restoration, or the term of any such extension is less than we request, the period during which we will have the right to exclusively market our product will be shortened and our competitors may obtain approval of competing products following our patent expiration and may take advantage of our investment in development and clinical trials by referencing our clinical and preclinical data to launch their product earlier than might otherwise be the

case, and our revenue could be reduced, possibly materially. If we do not have sufficient patent life to protect our products, our business and results of operations will be adversely affected.

We may be subject to claims challenging the inventorship or ownership of our patents and other intellectual property.

We may be subject to claims that former employees, collaborators, or other third parties have an interest in our patents or other intellectual property as an inventor or co-inventor. The failure to name the proper inventors on a patent application can result in the patents issuing thereon being unenforceable. Inventorship disputes may arise from conflicting views regarding the contributions of different individuals named as inventors, the effects of foreign laws where foreign nationals are involved in the development of the subject matter of the patent, conflicting obligations of third parties involved in developing our product candidates or as a result of questions regarding co-ownership of potential joint inventions. For example, we may have inventorship disputes arise from conflicting obligations of consultants or others who are involved in developing our product candidates. Alternatively, or additionally, we may enter into agreements to clarify the scope of our rights in such intellectual property. Litigation may be necessary to defend against these and other claims challenging inventorship. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, valuable intellectual property. Such an outcome could have a material adverse effect on our business. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We or our licensors may have relied on third-party consultants or collaborators or on funds from third parties, such as the U.S. government, such that we or our licensors are not the sole and exclusive owners of the patents we in-licensed. If other third parties have ownership rights or other rights to our patents, including in-licensed patents, they may be able to license such patents to our competitors, and our competitors could market competing products and technology. This could have a material adverse effect on our competitive position, business, financial conditions, results of operations, and prospects.

In addition, while it is our policy to require our employees and contractors who may be involved in the conception or development of intellectual property to execute agreements assigning such intellectual property to us, we may be unsuccessful in executing such an agreement with each party who, in fact, conceives or develops intellectual property that we regard as our own. The assignment of intellectual property rights may not be self-executing, or the assignment agreements may be breached, and we may be forced to bring claims against third parties, or defend claims that they may bring against us, to determine the ownership of what we regard as our intellectual property. Such claims could have a material adverse effect on our business, financial condition, results of operations, and prospects.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected.

Our current or future trademarks or trade names may be challenged, infringed, circumvented or declared generic or descriptive, or determined to be infringing on other marks. We may not be able to protect our rights to these trademarks and trade names or may be forced to stop using these names, which we need for name recognition by potential partners or customers in our markets of interest. During trademark registration proceedings, we may receive rejections of our applications by the USPTO or in other foreign jurisdictions. Although we would be given an opportunity to respond to those rejections, we may be unable to overcome such rejections. In addition, in the USPTO and in comparable agencies in many foreign jurisdictions, third parties are given an opportunity to oppose pending trademark applications and to seek to cancel registered trademarks. Opposition or cancellation proceedings may be filed against our trademarks, and our trademarks may not survive such proceedings. If we are unable to establish name recognition based on our trademarks and trade names, we may not be able to compete effectively and our business may be adversely affected. We may license our trademarks and trade names to third parties, such as distributors. Though these license agreements may provide

guidelines for how our trademarks and trade names may be used, a breach of these agreements or misuse of our trademarks and tradenames by our licensees may jeopardize our rights in or diminish the goodwill associated with our trademarks and trade names.

Moreover, any name we have proposed to use with our product candidate in the United States must be approved by the FDA, regardless of whether we have registered it, or applied to register it, as a trademark. Similar requirements exist in Europe. The FDA typically conducts a review of proposed product names, including an evaluation of potential for confusion with other product names. If the FDA (or an equivalent administrative body in a foreign jurisdiction) objects to any of our proposed proprietary product names, it may be required to expend significant additional resources in an effort to identify a suitable substitute name that would qualify under applicable trademark laws, not infringe the existing rights of third parties and be acceptable to the FDA. Furthermore, in many countries, owning and maintaining a trademark registration may not provide an adequate defense against a subsequent infringement claim asserted by the owner of a senior trademark. At times, competitors or other third parties may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement claims brought by owners of other registered trademarks or trademarks that incorporate variations of our registered or unregistered trademarks or trade names. If we assert trademark infringement claims, a court may determine that the marks we have asserted are invalid or unenforceable, or that the party against whom we have asserted trademark infringement has superior rights to the marks in question. In this case, we could ultimately be forced to cease use of such trademarks.

Our internal computer systems, or those used by our third-party research institution collaborators, CROs, CDMOs or other contractors or consultants, may fail or suffer security breaches.

We are increasingly dependent upon information technology systems, infrastructure and data to operate our business. In the ordinary course of business, we collect, store and transmit confidential information (including but not limited to intellectual property, proprietary business information and personal information). It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We also have outsourced elements of our operations to third parties, and as a result we manage a number of third-party contractors who have access to our confidential information.

Despite the implementation of security measures, our internal computer systems and those of our future CROs and CDMOs, and other contractors and consultants are vulnerable to damage from a variety of threats, including computer viruses and unauthorized access. Although to our knowledge we have not experienced any such material system failure, accident or security breach to date, if such an event were to occur and negatively affect our operations, it could result in a material disruption of our development programs and our business operations. Further, we cannot assure that our data protection efforts and our investment in information technology will prevent significant breakdowns, data leakages, breaches in our systems or other cyber incidents that could have a material adverse effect upon our reputation, business, operations or financial condition. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on our third-party research institution collaborators for research and development of our product candidates and other third parties for the manufacture of our product candidates and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security incident were to result in an actual or perceived loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information or patient information, we could incur liability and the further development and commercialization of our product candidates could be delayed.

Furthermore, significant disruptions of our internal information technology systems or security breaches could result in the loss, misappropriation, and/or unauthorized access, use, or disclosure of, or the prevention of access to, confidential information (including trade secrets or other intellectual property, proprietary business

information, and personal information), which could result in financial, legal, business, and reputational harm to us. For example, any such event that leads to unauthorized access, use, or disclosure of personal information, including personal information regarding our clinical trial subjects or employees, could harm our reputation directly, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information, which could result in significant legal and financial exposure and reputational damages that could potentially have an adverse effect on our business.

We have and will enter into collaboration, license, contract research and/or manufacturing relationships with organizations that operate in certain countries that are at heightened risk of theft of technology, data and intellectual property through direct intrusion by private parties or foreign actors, including those affiliated with or controlled by state actors. Accordingly, our efforts to protect and enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license, and we may be at heightened risk of losing our proprietary intellectual property rights around the world, including outside of such countries, to the extent such theft or intrusion destroy the proprietary nature of our intellectual property.

Risks Related to this Offering and Ownership of Our Common Stock

Our stock price may be volatile or may decline regardless of our operating performance, resulting in substantial losses for investors.

The market price of our common stock may be highly volatile and may fluctuate substantially as a result of a variety of factors, some of which are related in complex ways. The market price of our common stock may fluctuate significantly in response to numerous factors, many of which are beyond our control, including the factors listed below and other factors described in this "Risk Factors" section:

- the commencement, enrollment, or results of current and future preclinical studies and clinical trials we may conduct, or changes in the development status of our product candidates;
- adverse results or delays in clinical trials;
- unanticipated serious safety concerns related to the use of our product candidates;
- any delay in our regulatory filings for our product candidates and any adverse development or perceived adverse development with respect to the applicable regulatory authority's review of such filings, including, without limitation, the issuance by the FDA of a "refusal to file" letter or a request for additional information;
- changes in laws or regulations, including, but not limited to, preclinical study or clinical trial requirements for approvals;
- negative clinical outcomes or other adverse events related to product candidates being developed by others in the CNS field;
- publication of research reports about us or our industry, or CNS programs in particular, or positive or negative recommendations or withdrawal of research coverage by securities analysts;
- any adverse changes to our relationship with manufacturers or suppliers;
- manufacturing, supply or distribution shortages;
- our failure to commercialize our product candidates;
- additions or departures of key scientific or management personnel;
- disputes or other developments relating to proprietary rights, including patents, litigation matters, and our ability to obtain patent protection for our technologies;

- variations in our results of operations;
- our cash position;
- our failure to meet the estimates and projections of the investment community or that we may otherwise provide to the public;
- announcements made by us or our competitors of new product and service offerings, acquisitions, strategic relationships, joint ventures, or capital commitments;
- our inability to establish collaborations, if needed;
- our ability to effectively manage our growth;
- changes in the market valuations of similar companies;
- press reports, whether or not true, about our business;
- sales or perceived potential sales of our common stock by us or our stockholders in the future;
- overall fluctuations in the equity markets;
- ineffectiveness of our internal controls;
- changes or developments in the global regulatory environment;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- general political and economic conditions; and
- other events or factors, many of which are beyond our control.

In addition, the stock market in general and biotechnology and biopharmaceutical companies in particular, have experienced extreme price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of these companies. Broad market and industry factors may negatively affect the market price of our common stock, regardless of our actual operating performance. If the market price of our common stock after this offering does not exceed the initial public offering price, you may not realize any return on, and may lose some or all of, your investment.

Our quarterly operating results may fluctuate significantly or may fall below the expectations of investors or securities analysts, each of which may cause our stock price to fluctuate or decline.

We expect our operating results to be subject to quarterly fluctuations. Our net loss and other operating results will be affected by numerous factors, including:

- timing and variations in the level of expense related to the current or future development of our programs;
- stock-based compensation estimates;
- our ability to enroll patients in clinical trials and timing and status of enrollment for our clinical trials;
- impact from the COVID-19 pandemic on us or third parties with which we engage;
- results of clinical trials, or the addition or termination of clinical trials or funding support by us or potential future partners;
- the need to conduct unanticipated clinical trials or trials that are larger or more complex than anticipated;
- competition from products that compete with our product candidates, and changes in the competitive landscape of our industry, including consolidation among our competitors or partners;

- any delays in regulatory review or approval of our product candidates;
- our execution of any collaboration, licensing or similar arrangements, and the timing of payments we may make or receive under potential future arrangements or the termination or modification of any such potential future arrangements;
- any intellectual property infringement, misappropriation or violation lawsuit or opposition, interference or cancellation proceeding in which we may become involved;
- additions and departures of key personnel;
- strategic decisions by us or our competitors, such as acquisitions, divestitures, spin-offs, joint ventures, strategic investments or changes in business strategy;
- if any product candidate we may develop receive regulatory approval, the timing and terms of such approval and market acceptance and demand for such product candidates;
- the timing and cost to establish a sales, marketing and distribution infrastructure to commercialize any products for which we may obtain marketing approval and intend to commercialize on our own or jointly with current or future collaborators;
- the risk/benefit profile, cost and reimbursement policies with respect to our product candidates, if approved, and existing and potential future products that compete with any of our product candidates;
- our ability to commercialize our product candidates, if approved, inside and outside of the United States, either independently or working with third parties;
- our ability to establish and maintain collaborations, licensing or other arrangements;
- our ability to adequately support future growth;
- potential unforeseen business disruptions that increase our costs or expenses;
- regulatory developments affecting current or future product candidates or those of our competitors; and
- changes in general global market, political and economic conditions.

If our quarterly operating results fall below the expectations of investors or securities analysts, the price of our common stock could decline substantially. Furthermore, any quarterly fluctuations in our operating results may, in turn, cause the price of our stock to fluctuate substantially. We believe that quarterly comparisons of our financial results are not necessarily meaningful and should not be relied upon as an indication of our future performance.

Our principal stockholders and management own a significant percentage of our stock and will be able to exert significant control over matters subject to stockholder approval.

Prior to this offering, as of September 30, 2021, our executive officers, directors, holders of 5% or more of our capital stock and their respective affiliates owned approximately % of our outstanding voting stock and, upon the closing of this offering, that same group will own approximately % of our outstanding voting stock (assuming no exercise of the underwriters' option to purchase additional shares). Therefore, even after this offering these stockholders will have the ability to influence us through this ownership position. These stockholders may be able to determine all matters requiring stockholder approval. For example, these stockholders may be able to control elections of directors, amendments of our organizational documents, or approval of any merger, sale of assets, or other major corporate transaction. In addition, certain of our principal stockholders, including ARCH Venture Partners, have designated certain of our directors for election to the Board. This may prevent or discourage unsolicited acquisition proposals or offers for our common stock that you may feel are in your best interest as one of our stockholders.

Future sales of our common stock in the public market could cause our common stock price to fall.

Our common stock price could decline as a result of sales of a large number of shares of common stock after this offering or the perception that these sales could occur. These sales, or the possibility that these sales may occur, might also make it more difficult for us to sell equity securities in the future at a time and price that we deem appropriate.

Upon the completion of this offering, shares of common stock will be outstanding (shares if the underwriters exercise their option to purchase additional shares from us in full), based on the number of shares outstanding as of September 30, 2021.

All shares of common stock expected to be sold in this offering will be freely tradable without restriction or further registration under the Securities Act unless held by our "affiliates" as defined in Rule 144 under the Securities Act. The resale of the remaining shares, or % of our outstanding shares of common stock following this offering, is currently prohibited or otherwise restricted, subject to certain limited exceptions, as a result of securities law provisions, market standoff agreements entered into by certain of our stockholders with us or lock-up agreements entered into by our stockholders with the underwriters in connection with this offering. However, subject to applicable securities law restrictions, these shares will be able to be sold in the public market beginning on the 181st day after the date of this prospectus. Shares issued upon the exercise of stock options outstanding under our equity incentive plans or pursuant to future awards granted under those plans will become available for sale in the public market to the extent permitted by the provisions of applicable vesting schedules, market stand-off agreements and/or lock-up agreements, as well as Rules 144 and 701 under the Securities Act. For more information, see the section titled "Shares Eligible for Future Sale."

Upon the completion of this offering, the holders of approximately shares, or % of our outstanding shares following this offering, of our common stock will have rights, subject to some conditions, to require us to file registration statements covering the sale of their shares or to include their shares in registration statements that we may file for ourselves or our other stockholders. We also intend to register the offer and sale of all shares of common stock that we may issue under our equity compensation plans. Once we register the offer and sale of shares for the holders of registration rights and shares that may be issued under our equity incentive plans, these shares will be able to be sold in the public market upon issuance, subject to the lock-up agreements described under "Underwriting."

In addition, in the future, we may issue additional shares of common stock, or other equity or debt securities convertible into common stock, in connection with a financing, acquisition, employee arrangement, or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and could cause the price of our common stock to decline.

Our management team has broad discretion to use the net proceeds from this offering and its investment of these proceeds may not yield a favorable return. They may invest the net proceeds from this offering in ways with which investors disagree.

Our management will have broad discretion over the use of net proceeds from this offering, and could spend the net proceeds in ways our stockholders may not agree with or that do not yield a favorable return, if at all. If we do not invest or apply the net proceeds from this offering in ways that improve our operating results, we may fail to achieve expected financial results, which could cause our stock price to decline. For additional details see the section titled "Use of Proceeds."

If you purchase shares of our common stock in our initial public offering, you will experience substantial and immediate dilution.

The assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, is substantially higher than the net tangible book value per share of our

outstanding common stock immediately following the completion of this offering. If you purchase shares of common stock in this offering, you will experience substantial and immediate dilution in the pro forma net tangible book value per share of $ per share as of September 30, 2021. That is because the price that you pay will be substantially greater than the pro forma net tangible book value per share of the common stock that you acquire. This dilution is due in large part to the fact that our earlier investors paid substantially less than the assumed initial public offering price when they purchased their shares of our capital stock. You will experience additional dilution when those holding stock options exercise their right to purchase common stock under our equity incentive plans or when we otherwise issue additional shares of common stock. For additional details see the section titled “Dilution.”

We do not currently intend to pay dividends on our common stock and, consequently, our stockholders’ ability to achieve a return on their investment will depend on appreciation of the value of our common stock.

We have never declared or paid cash dividends on our common stock. We currently intend to retain all available funds and any future earnings to support operations and to finance the growth and development of our business. We do not intend to declare or pay any cash dividends on our capital stock in the foreseeable future. As a result, any investment return on our common stock will depend upon increases in the value for our common stock, which is not certain.

Provisions in our amended and restated certificate of incorporation and our amended and restated bylaws and Delaware law might discourage, delay or prevent a change in control of our company or changes in our management and, therefore, depress the market price of our common stock.

Our amended and restated certificate of incorporation and amended and restated bylaws, each to be in effect immediately prior to the completion of this offering, will contain provisions that could depress the market price of our common stock by acting to discourage, delay, or prevent a change in control of our company or changes in our management that the stockholders of our company may deem advantageous. These provisions, among other things:

- establish a staggered Board divided into three classes serving staggered three-year terms, such that not all members of the Board will be elected at one time;
- authorize our Board to issue new series of preferred stock without stockholder approval and create, subject to applicable law, a series of preferred stock with preferential rights to dividends or our assets upon liquidation, or with superior voting rights to our existing common stock;
- eliminate the ability of our stockholders to call special meetings of stockholders;
- eliminate the ability of our stockholders to fill vacancies on our Board;
- establish advance notice requirements for nominations for election to our Board or for proposing matters that can be acted upon by stockholders at our annual stockholder meetings;
- permit our Board to establish the number of directors;
- provide that our Board is expressly authorized to make, alter or repeal our amended bylaws;
- provide that stockholders can remove directors only for cause and only upon the approval of not less than 66-2/3% of all outstanding shares of our voting stock;
- require the approval of not less than 66-2/3% of all outstanding shares of our voting stock to amend our bylaws and specific provisions of our certificate of incorporation; and
- the jurisdictions in which certain stockholder litigation may be brought.

As a Delaware corporation, we will be subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, which prohibits a Delaware corporation from engaging in a business

combination specified in the statute with an interested stockholder (as defined in the statute) for a period of three years after the date of the transaction in which the person first becomes an interested stockholder, unless the business combination is approved in advance by a majority of the independent directors or by the holders of at least two-thirds of the outstanding disinterested shares. The application of Section 203 of the Delaware General Corporation Law could also have the effect of delaying or preventing a change of control of our company.

Our amended and restated certificate of incorporation will provide that the Court of Chancery of the State of Delaware will be the exclusive forum for substantially all disputes between us and our stockholders, which could limit our stockholders' ability to obtain a favorable judicial forum for disputes with us or our directors, officers or employees.

Our amended and restated certificate of incorporation to be in effect upon the completion of this offering will provide that, unless we consent in writing to the selection of an alternative forum, the sole and exclusive forum, to the fullest extent permitted by law, for (1) any derivative action or proceeding brought on our behalf, (2) any action asserting a breach of a fiduciary duty owed by any director, officer or other employee to us or our stockholders, (3) any action asserting a claim against us or any director, officer, or other employee arising pursuant to the Delaware General Corporation Law, (4) any action to interpret, apply, enforce, or determine the validity of our second amended and restated certificate of incorporation or amended and restated bylaws or (5) any other action asserting a claim that is governed by the internal affairs doctrine, shall be the Court of Chancery of the State of Delaware (or another state court or the federal court located within the State of Delaware if the Court of Chancery does not have or declines to accept jurisdiction), in all cases subject to the court's having jurisdiction over indispensable parties named as defendants. In addition, our amended and restated certificate of incorporation will provide that the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act but that the forum selection provision will not apply to claims brought to enforce a duty or liability created by the Exchange Act.

Although we believe these provisions benefit us by providing increased consistency in the application of Delaware law for the specified types of actions and proceedings, the provisions may result in increased costs to stockholders to bring a claim for any such dispute and may have the effect of discouraging lawsuits against us or our directors and officers. Alternatively, if a court were to find the choice of forum provision contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our business, financial condition, and operating results. For example, under the Securities Act, federal courts have concurrent jurisdiction over all suits brought to enforce any duty or liability created by the Securities Act, and investors cannot waive compliance with the federal securities laws and the rules and regulations thereunder. Any person or entity purchasing or otherwise acquiring any interest in our shares of capital stock shall be deemed to have notice of and consented to this exclusive forum provision, but will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder.

Our ability to use our net operating loss carryforwards and other tax attributes may be limited.

Under Sections 382 and 383 of the Internal Revenue Code of 1986, as amended (the Code), if a corporation undergoes an "ownership change," generally defined as a greater than 50 percentage point change (by value) in its equity ownership by certain stockholders over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards (NOLs) and other pre-change tax attributes (such as research and development tax credits) to offset its post-change income or taxes may be limited. We may have experienced ownership changes in the past and may experience ownership changes as a result of our acquisitions of assets and as a result of this offering and/or subsequent shifts in our stock ownership (some of which are outside our control). As a result, our ability to use our pre-change NOLs and tax credits to offset future taxable income, if any, could be subject to limitations. Similar provisions of state tax law may also apply. As a result, even if we attain profitability, we may be unable to use a material portion of our NOLs and tax credits.

Participation in this offering by our existing stockholders and/or their affiliated entities may reduce the public float for our common stock.

To the extent certain of our existing stockholders and their affiliated entities participate in this offering, such purchases would reduce the non-affiliate public float of our shares, meaning the number of shares of our common stock that are not held by officers, directors and controlling stockholders. A reduction in the public float could reduce the number of shares that are available to be traded at any given time, thereby adversely impacting the liquidity of our common stock and depressing the price at which you may be able to sell shares of common stock purchased in this offering.

General Risk Factors

If securities or industry analysts either do not publish research about us or publish inaccurate or unfavorable research about us, our business or our market, or if they change their recommendations regarding our common stock adversely, the trading price or trading volume of our common stock could decline.

The trading market for our common stock will be influenced in part by the research and reports that securities or industry analysts may publish about us, our business, our market, or our competitors. If one or more of these analysts initiate research with an unfavorable rating or downgrade our common stock, provide a more favorable recommendation about our competitors or publish inaccurate or unfavorable research about our business, our common stock price would likely decline. If any analyst who may cover us were to cease coverage of us or fail to regularly publish reports on us, we could lose visibility in the financial markets, which in turn could cause the trading price or trading volume of our common stock to decline.

There has been no prior public market for our common stock, and an active trading market may not develop or be sustained.

There has been no public market for our common stock prior to this offering. The initial public offering price for our common stock was determined through negotiations among the underwriters and us and may vary from the market price of our common stock following this offering. An active or liquid market in our common stock may not develop upon closing of this offering or, if it does develop, it may not be sustainable. The lack of an active market may impair the value of your shares, your ability to sell your shares at the time you wish to sell them and the prices that you may obtain for your shares. An inactive market may also impair our ability to raise capital by selling our common stock and our ability to acquire other companies, products, or technologies by using our common stock as consideration.

We are an emerging growth company, and any decision on our part to comply only with certain reduced reporting and disclosure requirements applicable to emerging growth companies could make our common stock less attractive to investors.

We are an “emerging growth company” as defined in the JOBS Act and, for as long as we continue to be an emerging growth company, we may choose to take advantage of exemptions from various reporting requirements applicable to other public companies but not to emerging growth companies, including:

- not being required to have our independent registered public accounting firm audit our internal control over financial reporting under Section 404 of the Sarbanes-Oxley Act;
- reduced disclosure obligations regarding executive compensation in our periodic reports and annual report on Form 10-K; and
- exemptions from the requirements of holding non-binding advisory votes on executive compensation and stockholder approval of any golden parachute payments not previously approved.

We could be an emerging growth company for up to five years following the completion of our initial public offering. Our status as an emerging growth company will end as soon as any of the following takes place:

- the last day of the fiscal year in which we have more than $1.07 billion in annual revenue;
- the date we qualify as a "large accelerated filer," with at least $700 million of equity securities held by non-affiliates;
- the date on which we have issued, in any three-year period, more than $1.0 billion in non-convertible debt securities; or
- the last day of the fiscal year ending after the fifth anniversary of the completion of our initial public offering.

We cannot predict if investors will find our common stock less attractive if we choose to rely on any of the exemptions afforded to emerging growth companies. If some investors find our common stock less attractive because we rely on any of these exemptions, there may be a less active trading market for our common stock and the market price of our common stock may be more volatile.

Under the JOBS Act, emerging growth companies can also delay adopting new or revised accounting standards until such time as those standards apply to private companies. We have elected to use this extended transition period for any new or revised accounting standards during the period in which we remain an emerging growth company; however, we may adopt certain new or revised accounting standards early. As a result, these financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

The requirements of being a public company may strain our resources, result in more litigation, and divert management's attention.

As a public company, we will be subject to the reporting requirements of the Exchange Act, the Sarbanes-Oxley Act, the Dodd-Frank Wall Street Reform and Consumer Protection Act, or the Dodd-Frank Act, the listing requirements of Nasdaq, and other applicable securities rules and regulations. Complying with these rules and regulations has increased and will increase our legal and financial compliance costs, make some activities more difficult, time consuming or costly and increase demand on our systems and resources. The Exchange Act requires, among other things, that we file annual, quarterly, and current reports with respect to our business and operating results. The Sarbanes-Oxley Act requires, among other things, that we maintain effective disclosure controls and procedures and internal control over financial reporting. We are required to disclose changes made in our internal control and procedures on a quarterly basis. In order to maintain and, if required, improve our disclosure controls and procedures and internal control over financial reporting to meet this standard, significant resources and management oversight may be required. As a result, management's attention may be diverted from other business concerns, which could adversely affect our business and operating results. We may also need to hire additional employees or engage outside consultants to comply with these requirements, which will increase our costs and expenses.

In addition, changing laws, regulations, and standards relating to corporate governance and public disclosure are creating uncertainty for public companies, increasing legal and financial compliance costs, and making some activities more time consuming. These laws, regulations, and standards are subject to varying interpretations, in many cases due to their lack of specificity and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices. We intend to invest resources to comply with evolving laws, regulations, and standards, and this investment may result in increased general and administrative expenses and a diversion of management's time and attention from revenue-generating activities to compliance activities. If our efforts to comply with new laws, regulations, and standards differ from the activities intended by regulatory or governing bodies due to

ambiguities related to their application and practice, regulatory authorities may initiate legal proceedings against us and our business may be adversely affected.

These new rules and regulations may make it more expensive for us to obtain director and officer liability insurance and, in the future, we may be required to accept reduced coverage or incur substantially higher costs to obtain coverage. These factors could also make it more difficult for us to attract and retain qualified members of our Board, particularly to serve on our audit committee and compensation committee, and qualified executive officers.

By disclosing information in this prospectus and in future filings required of a public company, our business and financial condition will become more visible, which we believe may result in threatened or actual litigation, including by competitors and other third parties. If those claims are successful, our business could be seriously harmed. Even if the claims do not result in litigation or are resolved in our favor, the time and resources needed to resolve them could divert our management's resources and seriously harm our business.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses.

Our operations could be subject to earthquakes, power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, medical epidemics and other natural or manmade disasters or business interruptions, for which we are predominantly self-insured. We rely on third-party manufacturers to produce our product candidates. Our ability to obtain clinical supplies of our product candidates could be disrupted if the operations of these suppliers were affected by a man-made or natural disaster or other business interruption. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

Unstable market and economic conditions may have serious adverse consequences on our business, financial condition and stock price.

From time to time, the global credit and financial markets have experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, declines in consumer confidence, declines in economic growth, increases in unemployment rates and uncertainty about economic stability. There can be no assurance that future deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. Failure to secure any necessary financing in a timely manner and on favorable terms could have a material adverse effect on our growth strategy, financial performance and stock price and could require us to delay or abandon clinical development plans. In addition, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive an economic downturn, which could directly affect our ability to attain our operating goals on schedule and on budget.

If we fail to maintain proper and effective internal controls over financial reporting our ability to produce accurate and timely financial statements could be impaired.

Pursuant to Section 404 of the Sarbanes-Oxley Act, our management will be required to report upon the effectiveness of our internal control over financial reporting when we lose our status as an "emerging growth company" and become an "accelerated filer" or a "large accelerated filer." At that point, we will be required to have an independent registered public accounting firm attest to the effectiveness of our internal control over financial reporting. The rules governing the standards that must be met for management to assess our internal control over financial reporting are complex, judgmental and require significant documentation, testing and possible remediation. To comply with the requirements of being a reporting company under the Exchange Act,

we will need to implement additional financial and management controls, reporting systems and procedures and hire additional accounting and finance staff.

We cannot assure you that there will not be material weaknesses or significant deficiencies in our internal control over financial reporting in the future. Any failure to maintain internal control over financial reporting could severely inhibit our ability to accurately report our financial condition, results of operations, or cash flows. If we are unable to conclude that our internal control over financial reporting is effective, or if we and/or our independent registered public accounting firm determines we have a material weakness or significant deficiency in our internal control over financial reporting, investors may lose confidence in the accuracy and completeness of our consolidated financial statements, the market price of our common stock could decline, and we could be subject to sanctions or investigations by Nasdaq, the SEC, or other regulatory authorities. Failure to remedy any material weakness in our internal control over financial reporting, or to implement or maintain other effective control systems required of public companies, could also restrict our future access to the capital markets.

Our disclosure controls and procedures may not prevent or detect all errors or acts of fraud.

Upon the completion of this offering, we will become subject to the periodic reporting requirements of the Exchange Act. We must design our disclosure controls and procedures to reasonably assure that information we must disclose in reports we file or submit under the Exchange Act is accumulated and communicated to management, and recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the SEC. We believe that any disclosure controls and procedures or internal controls and procedures, no matter how well-conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. For example, our directors or executive officers could inadvertently fail to disclose a new relationship or arrangement causing us to fail to make a required related party transaction disclosure. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people or by an unauthorized override of the controls. Accordingly, because of the inherent limitations in our control system, misstatements due to error or fraud may occur and not be detected.

If our estimates or judgments relating to our critical accounting policies prove to be incorrect or financial reporting standards or interpretations change, our results of operations could be adversely affected.

The preparation of financial statements in conformity with generally accepted accounting principles in the United States (U.S. GAAP), requires management to make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. We base our estimates on historical experience, known trends and events, and various other factors that we believe to be reasonable under the circumstances, as provided in “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Estimates.” The results of these estimates form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Significant assumptions and estimates used in preparing our consolidated financial statements include but are not limited to stock-based compensation and evaluation of acquisitions of assets and other similar transactions as well as clinical trial accruals. Our results of operations may be adversely affected if our assumptions change or if actual circumstances differ from those in our assumptions, which could cause our results of operations to fall below the expectations of securities analysts and investors, resulting in a decline in the trading price of our common stock.

Additionally, we regularly monitor our compliance with applicable financial reporting standards and review new pronouncements and drafts thereof that are relevant to us. As a result of new standards, changes to existing standards and changes in their interpretation, we might be required to change our accounting policies, alter our operational policies, and implement new or enhance existing systems so that they reflect new or amended financial reporting standards, or we may be required to restate our audited or unaudited consolidated financial

statements and related notes. Such changes to existing standards or changes in their interpretation may also have an adverse effect on our reputation, business, financial position, and profit.

Our internal computer systems, or those used by our third-party research institution collaborators, CROs or other contractors or consultants, may fail or suffer security breaches.

We are increasingly dependent upon information technology systems, infrastructure and data to operate our business. In the ordinary course of business, we collect, store and transmit confidential information (including but not limited to intellectual property, proprietary business information and personal information). It is critical that we do so in a secure manner to maintain the confidentiality and integrity of such confidential information. We also have outsourced elements of our operations to third parties, and as a result we manage a number of third-party contractors who have access to our confidential information.

Despite the implementation of security measures, our internal computer systems and those of our future CROs and other contractors and consultants are vulnerable to damage from cyberattacks, "phishing" attacks, computer viruses, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. Attacks upon information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives and expertise. As a result of the COVID-19 pandemic, we may also face increased cybersecurity risks due to our reliance on internet technology and the number of our employees who are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. Furthermore, because the techniques used to obtain unauthorized access to, or to sabotage, systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. We may also experience security breaches that may remain undetected for an extended period. Although to our knowledge we have not experienced any such material system failure or security breach to date, if such an event were to occur and cause interruptions in our operations, it could result in a material disruption of our development programs and our business operations. For example, the loss of clinical trial data from completed or future clinical trials could result in delays in our regulatory approval efforts and significantly increase our costs to recover or reproduce the data. Likewise, we rely on our third-party research institution collaborators for research and development of our product candidates and other third parties for the manufacture of our product candidates and to conduct clinical trials, and similar events relating to their computer systems could also have a material adverse effect on our business. Furthermore, significant disruptions of our internal information technology systems or security breaches could result in the loss, misappropriation, and/or unauthorized access, use, or disclosure of, or the prevention of access to, confidential information (including trade secrets or other intellectual property, proprietary business information, and personal information), which could result in financial, legal, business, and reputational harm to us. For example, any such event that leads to unauthorized access, use, or disclosure of personal information, including personal information regarding our clinical trial subjects or employees, could harm our reputation directly, compel us to comply with federal and/or state breach notification laws and foreign law equivalents, subject us to mandatory corrective action, and otherwise subject us to liability under laws and regulations that protect the privacy and security of personal information, which could result in significant legal and financial exposure and reputational damages that could potentially have an adverse effect on our business.

We may be subject to claims that our employees, consultants, or independent contractors have wrongfully used or disclosed confidential information of third parties.

We have received confidential and proprietary information from third parties. In addition, we employ individuals who were previously employed at other biotechnology or pharmaceutical companies. Although we try to ensure that individuals working for or collaborating with us do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants, or independent contractors have inadvertently or otherwise used or disclosed confidential information proprietary to these third parties or our employees' former employers, or that we caused an employee to breach the terms of his

or her non-competition or non-solicitation agreement. We may be subject to claims that patents and applications we have filed to protect inventions of our employees, consultants, advisors or other third parties, even those related to one or more of our product candidates, are rightfully owned by their former or concurrent employer. Litigation may be necessary to defend against these claims. Even if we are successful in defending against these claims, litigation could result in substantial cost and be a distraction to our management and employees. If our defenses to these claims fail, in addition to requiring us to pay monetary damages, a court could prohibit us from using technologies or features that are essential to our product candidates, if such technologies or features are found to incorporate or be derived from the trade secrets or other proprietary information of the former employers. Moreover, any such litigation or the threat thereof may adversely affect our reputation, our ability to form strategic alliances or sublicense our rights to collaborators, engage with scientific advisors or hire employees or consultants, each of which would have an adverse effect on our business, results of operations and financial condition. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management.

We could be subject to securities class action litigation.

In the past, securities class action litigation has often been instituted against companies following periods of volatility in the market price of a company's securities. This type of litigation, if instituted, could result in substantial costs and a diversion of management's attention and resources, which would harm our business, operating results, or financial condition. Additionally, the dramatic increase in the cost of directors' and officers' liability insurance may cause us to opt for lower overall policy limits or to forgo insurance that we may otherwise rely on to cover significant defense costs, settlements, and damages awarded to plaintiffs.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus contains forward-looking statements, particularly in the sections titled “Prospectus Summary,” “Risk Factors,” “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and “Business.” In some cases, you can identify these statements by forward-looking words such as “aim,” “anticipate,” “believe,” “continue,” “could,” “estimate,” “expect,” “intend,” “may,” “might,” “plan,” “potential,” “predict,” “should,” “would” or “will,” the negative of these terms and other comparable terminology. These forward-looking statements, which are subject to risks, include, but are not limited to, statements about:

- our expectations regarding the potential market size and size of the potential patient populations for our product candidates and any future product candidates, if approved for commercial use;
- our clinical and regulatory development plans;
- the ability of our clinical trials to demonstrate safety and efficacy of our product candidates, and other positive results;
- our expectations with regard to the results of our clinical studies, preclinical studies and research and development programs, including the timing and availability of data from such studies;
- our estimates of the number of patients that we will enroll in our clinical trials and the timing of their enrollment;
- the timing of commencement of future preclinical studies and clinical trials and research and development programs;
- our ability to acquire, discover, develop and advance product candidates into, and successfully complete, clinical trials;
- our ability to reduce the time or increase the likelihood of success of our research and development relative to the traditional drug discovery paradigm using our precision neuroscience platform;
- our ability to improve, and the rate of improvement in, our precision neuroscience platform, including any improvements to our multimodal patient datasets and our AI/ML methods, or to realize benefits from such improvements;
- our ability to translate patient data into Data Biopsy Signatures, to develop an encyclopedia of Precision Phenotypes, as well as any improved clinical trial outcomes or therapeutic benefit for patients derived therefrom;
- our expectations related to our precision neuroscience platform, including but not limited to whether it will have the same impact as data-driven precision medicine has had on the oncology field;
- our ability to achieve our mission to conquer one of the greatest medical challenges of our generation;
- our ability to scale our company;
- our intentions and our ability to establish collaborations and/or partnerships, and whether such collaborations and/or partnerships are successful;
- the timing or likelihood of regulatory filings and approvals for our product candidates;
- our commercialization, marketing and manufacturing, including any capabilities and expectations related thereto;
- our ability to keep pace with new technological developments;
- impact from future regulatory, judicial, and legislative changes or developments in the United States and foreign countries;
- our intentions with respect to the commercialization of our product candidates, if approved;

- the pricing and reimbursement of our product candidates, if approved;
- the potential effects of the COVID-19 pandemic, or other public health crises, on our preclinical and clinical programs and business;
- the implementation of our business model and strategic plans for our business and product candidates, including additional indications for which we may pursue;
- our ability to maintain our technical operations infrastructure to avoid errors, delays, or cybersecurity breaches;
- our ability to effectively manage our growth, including our ability to retain and recruit personnel, and maintain our culture;
- the scope of protection we are able to establish and maintain for intellectual property rights covering our product candidates, including the projected terms of patent protection;
- estimates of our expenses, future revenue, capital requirements, our needs for additional financing and our ability to obtain additional capital;
- our expected use of proceeds from this offering;
- the period over which we estimate our existing cash will be sufficient to fund our future operating expenses and capital expenditure requirements;
- the performance of our third-party suppliers and manufacturers;
- our expectations regarding the time during which we will be an emerging growth company under the JOBS Act;
- developments and projections relating to our competitors and our industry, including competing products; and
- other risks and uncertainties, including those listed under the caption “Risk Factors” in this prospectus.

We have based these forward-looking statements largely on our current expectations, estimates, forecasts and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy and financial needs. In light of the significant uncertainties in these forward-looking statements, you should not rely upon forward-looking statements as predictions of future events. Although we believe that we have a reasonable basis for each forward-looking statement contained in this prospectus, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur at all. You should refer to the section titled “Risk Factors” for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. Except as required by law, we undertake no obligation to publicly update any forward-looking statements, whether as a result of new information, future events or otherwise. The Private Securities Litigation Reform Act of 1995 and Section 27A of the Securities Act do not protect any forward-looking statements that we make in connection with this offering.

You should read this prospectus and the documents that we reference in this prospectus and have filed as exhibits to the registration statement, of which this prospectus is a part, completely and with the understanding that our actual future results may be materially different from what we expect. We qualify all of the forward-looking statements in this prospectus by these cautionary statements.

INDUSTRY AND MARKET DATA

Unless otherwise indicated, information contained in this prospectus concerning our industry and the markets in which we operate, including our general expectations and market position, market opportunity and market size, is based on information from various sources on assumptions that we have made that are based on such information and other, similar sources and on our knowledge of, and expectations about, the markets for our products. In some cases, we do not expressly refer to the sources from which this data is derived. This information involves a number of assumptions and limitations, and you are cautioned not to give undue weight to such estimates. While we believe the market position, market opportunity and market size information included in this prospectus is generally reliable, such information is inherently imprecise. In addition, projections, assumptions and estimates of our future performance and the future performance of the industry in which we operate is necessarily subject to a high degree of uncertainty and risk due to a variety of factors, including but not limited to those described in the section titled “Risk Factors” and elsewhere in this prospectus. These and other factors could cause results to differ materially from those expressed in the estimates made by independent third parties and by us.

USE OF PROCEEDS

We estimate that the net proceeds from this offering will be approximately $ million (or approximately $ million if the underwriters exercise their option to purchase additional shares in full), assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

Each $1.00 increase or decrease in the initial public offering price per share would increase or decrease, as applicable, our net proceeds, after deducting estimated underwriting discounts and commissions, by $ million (assuming no exercise of the underwriters' option to purchase additional shares). Each increase or decrease of 1.0 million shares in the number of shares offered by us would increase or decrease, as applicable, our net proceeds by $ million, assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The principal purposes of this offering are to obtain additional capital to fund our operations, create a public market for our common stock, facilitate our future access to the public equity markets, and increase awareness of our company among potential partners.

We currently intend to use the net proceeds from this offering, together with our existing cash, as follows:

- approximately $ million to fund the clinical and preclinical development of our current programs;
- approximately $ million to advance our precision neuroscience platform;
- approximately $ million to fund research and development activities for additional programs; and
- the remainder for working capital and other general corporate purposes.

We may also use a portion of the net proceeds to in-license, acquire, or invest in, complementary technologies, assets, or intellectual property. We regularly evaluate strategic opportunities; however, we have no current commitments to enter into any such license arrangements or acquisition agreements or to make any such investments.

Based on our current operating plan, we believe that our existing cash, together with the net proceeds from this offering, will be sufficient to meet our working capital and capital expenditure needs for at least the next months. Our expected use of net proceeds from this offering represents our current intentions based upon present plans and business conditions.

The net proceeds from this offering, together with our existing cash, will not be sufficient to fund any of our product candidates through regulatory approval, and we anticipate needing to raise additional capital to complete the development of and commercialize our product candidates. As of the date of this prospectus, we cannot predict with certainty all of the particular uses for the net proceeds to be received upon the completion of this offering, or the amounts that we will actually spend on the uses set forth above. The amounts and timing of any expenditures will vary depending on numerous factors, including the progress of our ongoing and planned clinical studies, the amount of cash used by our operations, competitive, scientific and data science developments, the rate of growth, if any, of our business, and other factors described in the section titled "Risk Factors." Accordingly, our management will have significant discretion and flexibility in applying the net proceeds from this offering, and investors will be relying on the judgment of our management regarding the application of these net proceeds. Due to the many inherent uncertainties in the development of our product candidates, the amounts and timing of our actual expenditures may vary significantly depending on numerous

factors, including the progress of our research and development, our ability to obtain additional financing, the cost and results of our preclinical activities, the timing of clinical studies we may commence in the future, the timing of regulatory submissions, any collaborations that we may enter into with third parties for our product candidates or strategic opportunities that become available to us, and any unforeseen cash needs.

Pending the uses described above, we intend to invest the net proceeds from this offering in interest-bearing obligations, investment-grade instruments, certificates of deposit, or direct or guaranteed obligations of the U.S. government.

DIVIDEND POLICY

We have never declared or paid any cash dividends on our capital stock and do not anticipate paying any cash dividends in the foreseeable future. We currently anticipate that we will retain all available funds for use in the operation and expansion of our business. Any future determination as to the declaration or payment of dividends on our common stock will be made at the discretion of our board of directors and will depend upon, among other factors, our financial condition, results from operations, current and anticipated cash needs, plans for expansion and other factors that our board of directors may deem relevant.

CAPITALIZATION

The following table sets forth our cash and total capitalization as of September 30, 2021:

- on an actual basis;
- on a pro forma basis to reflect the following immediately prior to the completion of this offering: (i) the conversion of all of our outstanding convertible preferred stock into an aggregate of shares of our common stock, (ii) the related reclassification of our convertible preferred stock aggregate carrying value to permanent equity, and (iii) the filing and effectiveness of our amended and restated certificate of incorporation, which will be effective immediately prior to the completion of this offering; and
- on a pro forma as adjusted basis to reflect: (i) the pro forma adjustments set forth above, and (ii) the issuance and sale of shares of common stock by us in this offering at the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The pro forma as adjusted information discussed below is illustrative only and will be adjusted based on the actual initial public offering price and other terms of this offering determined at pricing. This table should be read in conjunction with the section titled “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our unaudited condensed consolidated financial statements and related notes included elsewhere in this prospectus.

	As of September 30, 2021		
	Actual	Pro Forma	Pro Forma as Adjusted(1)
	(in thousands, except per share amounts)		
Cash	$	$	$
Convertible preferred stock warrant liability	$	$	$
Convertible preferred stock, $0.0001 par value per share; 755,000 shares authorized, shares issued and outstanding, actual; no shares authorized, issued or outstanding, pro forma and pro forma as adjusted			
Stockholders’ (deficit) equity:			
Preferred stock, $0.0001 par value per share; no shares authorized, issued or outstanding, actual; shares authorized, no shares issued or outstanding, pro forma and pro forma as adjusted	—		
Common stock, $0.0001 par value per share; 1,125,000 shares authorized, shares issued and outstanding, actual; shares authorized and shares issued and outstanding, pro forma; shares authorized and shares issued and outstanding, pro forma as adjusted			
Additional paid-in capital			
Accumulated deficit			
Total stockholders’ (deficit) equity			
Total capitalization	$	$	$

(1) The pro forma as adjusted information discussed above is illustrative only and will depend on the actual initial offering price and other terms of this offering determined at pricing. Each $1.00 increase or decrease in the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, would increase or decrease, as applicable, each of pro forma as adjusted cash, additional paid-in capital, total stockholders’

equity and total capitalization by approximately $ million, assuming that the number of shares of common stock offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1.0 million shares of common stock offered by us would increase or decrease, as applicable, each of pro forma as adjusted cash, additional paid-in capital, total stockholders' equity and total capitalization by approximately $ million, assuming that the assumed initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters exercise their option to purchase additional shares of our common stock in full, pro forma as adjusted cash, additional paid-in capital, total stockholders' equity, total capitalization and shares of common stock outstanding as of September 30, 2021 would be $ million, $ million, $ million, $ million, and shares, respectively.

The number of shares of our common stock to be outstanding after this offering on a pro forma and pro forma as adjusted basis is based on shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all of our shares of convertible preferred stock outstanding as of September 30, 2021 into an aggregate of shares of our common stock immediately prior to the completion of this offering) and excludes:

- shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2021, with a weighted-average exercise price of $ per share;
- shares of our common stock issuable upon the exercise of stock options granted subsequent to September 30, 2021, with a weighted-average exercise price of $ per share;
- shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2021 to purchase shares of our Series A-1 convertible preferred stock with a weighted-average exercise price of $ per share;
- shares of our common stock reserved for future issuance under the 2020 Plan as of September 30, 2021;
- shares of our common stock reserved for future issuance under the 2015 Plan, which we assumed and have subsequently suspended in connection with the closing of our acquisition of BlackThorn;
- shares of our common stock reserved for future issuance under the 2022 Plan, which will become effective on the date immediately prior to the date our registration statement relating to this offering becomes effective, as well as any future increases in the number of shares of common stock reserved for issuance under the 2022 Plan; and
- shares of our common stock reserved for future issuance under the ESPP, which will become effective on the date immediately prior to the date our registration statement relating to this offering becomes effective, as well as any future increases in the number of shares of common stock reserved for issuance under the ESPP.

DILUTION

If you purchase shares of our common stock in this offering, your ownership interest will be diluted to the extent of the difference between the initial public offering price per share of our common stock in this offering and the pro forma as adjusted net tangible book value per share of our common stock immediately after this offering.

As of September 30, 2021, we had a historical net tangible book value (deficit) of $ million, or $ per share of common stock. Our historical net tangible book value (deficit) represents our total tangible assets excluding deferred offering costs, less our total liabilities and convertible preferred stock, which is not included within stockholders' equity (deficit), divided by the total number of shares of our common stock outstanding as of September 30, 2021.

Our pro forma net tangible book value as of September 30, 2021, was $ million, or $ per share. Pro forma net tangible book value represents our total tangible assets excluding deferred offering costs, less our total liabilities, after giving effect to the automatic conversion of all outstanding shares of our convertible preferred stock as of September 30, 2021 into an aggregate of shares of our common stock as if such conversion had occurred on September 30, 2021. Pro forma net tangible book value per share represents pro forma net tangible book value divided by the total number of shares of common stock outstanding as of September 30, 2021, after giving effect to the conversion of our convertible preferred stock.

After giving further effect to the issuance and sale by us of the shares of our common stock in this offering at the assumed initial public offering price of $ per share, which is the midpoint of the estimated price range set forth on the cover page of this prospectus, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us, our pro forma as adjusted net tangible book value as of September 30, 2021 would be $ million, or $ per share. This represents an immediate increase in pro forma net tangible book value to our existing stockholders of $ per share and an immediate dilution to new investors of $ per share. Dilution per share to new investors represents the difference between the price per share to be paid by new investors for the shares of common stock sold in this offering and the pro forma as adjusted net tangible book value per share immediately after this offering.

The following table illustrates this dilution on a per share basis:

Assumed initial public offering price per share		$
Historical net tangible book value (deficit) per share as of September 30, 2021	$	
Pro forma increase in historical net tangible book value (deficit) per share as of September 30, 2021 attributable to the pro forma transactions described above		
Pro forma net tangible book value per share as of September 30, 2021		
Increase in pro forma net tangible book value per share attributable to new investors participating in this offering		
Pro forma as adjusted net tangible book value per share after this offering		
Dilution in pro forma as adjusted net tangible book value per share to new investors participating in this offering		$

The dilution information discussed above is illustrative only and will change based on the actual initial public offering price and other terms of this offering determined at pricing. Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share (which is the midpoint of the estimated price range set forth on the cover page of this prospectus) would increase (decrease) pro forma as adjusted net tangible book value per share to new investors by $, and would increase (decrease) dilution per share to new investors in this offering by $, assuming that the number of shares offered by us, as set forth on the cover page of this

prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us. Similarly, each increase or decrease of 1.0 million shares in the number of shares offered by us would increase (decrease) our pro forma as adjusted net tangible book value by approximately $ per share and increase (decrease) the dilution to new investors by $ per share, assuming the assumed initial public offering price remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

If the underwriters' option to purchase additional shares is exercised in full, the pro forma as adjusted net tangible book value per share of our common stock would be $ per share, and the dilution in pro forma net tangible book value per share to new investors in this offering would be $ per share, in each case assuming an initial public offering price of $ per share, which is the midpoint of the price range set forth on the cover page of this prospectus.

The following table summarizes, as of September 30, 2021, on a pro forma as adjusted basis, the number of shares of common stock purchased from us, the total consideration paid, or to be paid, and the average price per share paid, or to be paid, by existing stockholders and by the new investors, at the assumed initial public offering price of $ per share, the midpoint of the estimated initial public offering range set forth on the cover page of this prospectus, before deducting estimated underwriting discounts and commissions and offering expenses payable by us:

	Shares Purchased		Total Consideration		Weighted-Average Price Per Share
	Number	Percent	Amount	Percent	
	(in thousands, except share, per share and percent data)				
Existing stockholders		%	$	%	$
New investors					$
Total		100.0%	$	100.0%	

Each $1.00 increase (decrease) in the assumed initial public offering price of $ per share (which is the midpoint of the estimated initial public offering price range set forth on the cover page of this prospectus), would increase (decrease) the total consideration paid by new investors and total consideration paid by all stockholders by approximately $ million, assuming that the number of shares offered by us, as set forth on the cover page of this prospectus, remains the same, and after deducting estimated underwriting discounts and commissions and estimated offering expenses payable by us.

The above table assumes no exercise of the underwriters' option to purchase additional shares. If the underwriters' option to purchase additional shares were exercised in full, our existing stockholders would own % and our new investors would own % of the total number of shares of our common stock outstanding upon completion of this offering.

To the extent that stock options are exercised, new stock options are issued under our equity incentive plan or we issue additional shares of common stock in the future, there will be further dilution to investors participating in this offering. In addition, we may choose to raise additional capital because of market conditions or strategic considerations, even if we believe that we have sufficient funds for our current or future operating plans. If we raise additional capital through the sale of equity or convertible debt securities, the issuance of these securities could result in further dilution to our stockholders.

In addition, to the extent that any outstanding warrants to purchase Series A-1 convertible preferred stock are exercised, investors participating in this offering will experience further dilution.

The foregoing tables and calculations (other than historical net tangible book value) are based on shares of common stock outstanding as of September 30, 2021 (after giving effect to the conversion of all of our shares of convertible preferred stock outstanding as of September 30, 2021 into an aggregate of shares of our common stock immediately prior to the completion of this offering) and excludes:

- shares of our common stock issuable upon the exercise of stock options outstanding as of September 30, 2021, with a weighted-average exercise price of $ per share;
- shares of our common stock issuable upon the exercise of stock options granted subsequent to September 30, 2021, with a weighted-average exercise price of $ per share;
- shares of common stock issuable upon the exercise of warrants outstanding as of September 30, 2021 to purchase shares of our Series A-1 convertible preferred stock with a weighted-average exercise price of $ per share;
- shares of our common stock reserved for future issuance under the 2020 Plan as of September 30, 2021;
- shares of our common stock reserved for future issuance under the 2015 Plan, which we assumed and have subsequently suspended in connection with the closing of our acquisition of BlackThorn;
- shares of our common stock reserved for future issuance under the 2022 Plan, which will become effective on the date immediately prior to the date our registration statement relating to this offering becomes effective, as well as any future increases in the number of shares of common stock reserved for issuance under the 2022 Plan; and
- shares of our common stock reserved for future issuance under the ESPP, which will become effective on the date immediately prior to the date our registration statement relating to this offering becomes effective, as well as any future increases in the number of shares of common stock reserved for issuance under the ESPP.

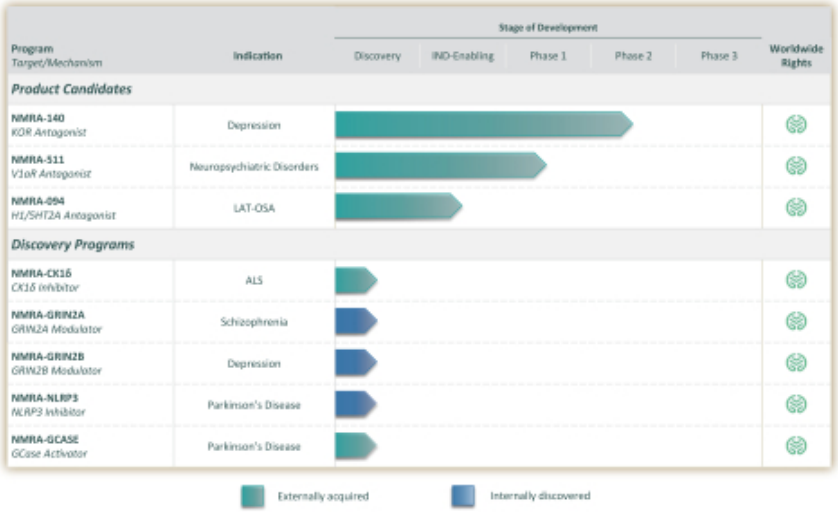
MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis of our financial condition and results of operations should be read together with the section titled "Summary Consolidated Financial Data," and our audited consolidated financial statements and unaudited condensed consolidated financial statements and related notes included elsewhere in this prospectus. This discussion and analysis and other parts of this prospectus contain forward-looking statements based upon current beliefs, plans and expectations related to future events and our future financial performance that involve risks, uncertainties, and assumptions, such as statements regarding our intentions, plans, objectives, and expectations for our business. Our actual results and the timing of selected events could differ materially from those discussed in the forward-looking statements as a result of several factors including those set forth in the section titled "Risk Factors." See also the section titled "Special Note Regarding Forward-Looking Statements."

Overview

We are a clinical-stage biotechnology company pioneering a precision medicine approach for brain diseases through the integration of data science and neuroscience. High failure rates have plagued neuroscience drug development for decades, contributing to lack of targeted, effective medicines for brain diseases. Our approach aims to redefine neuroscience research and development by applying proprietary AI/ML methods to multimodal patient datasets in order to match defined patient populations with targeted therapeutics designed to address the drivers of their underlying disease. We believe our precision neuroscience approach will help us to cut through patient heterogeneity, thereby increasing the probability of clinical success and improving patient outcomes. Through our internal discovery efforts and business development activities, we have rapidly scaled a pipeline currently consisting of eight clinical and preclinical precision neuroscience programs targeting a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases. Our team unites some of the world's leading data scientists, neuroscience drug developers and company builders to usher in a new era of precision neuroscience and to accelerate the development of novel, safe and effective therapies for patients and families affected by brain diseases.

We are building a broad pipeline of novel precision medicines for neuropsychiatric disorders and neurodegenerative disorders, each with a targeted approach to development. Since inception, we have rapidly scaled our pipeline through both internal discovery and external business development efforts. Today, our disclosed pipeline comprises eight programs, with two in clinical development, one in IND-enabling studies and five in the discovery stage, as summarized below:



We were incorporated in November 2019 and commenced operations thereafter. To date, we have focused primarily on building our organization, acquiring technologies and companies, developing our precision neuroscience platform, identifying and developing potential product candidates, executing clinical and preclinical studies, organizing and staffing our company, business planning, establishing our intellectual property portfolio, raising capital and providing general and administrative support for these operations. We do not have any products approved for sale, we have not generated any revenue from the sale of products, and we do not expect to generate revenue from the sale of our product candidates until we complete clinical development, submit regulatory filings, and receive approvals from the applicable regulatory bodies for such product candidates, if ever.

Since our inception, we have incurred significant net losses, which are primarily attributable to acquired intangible in-process research and development intangible asset (IPR&D) costs pursuant to our acquisitions of BlackThorn Therapeutics, Inc. (BlackThorn), Syllable Life Sciences, Inc. (Syllable), Propellex Bio, Inc. (Propellex) and Alairion, Inc. (Alairion), each of which occurred in 2020 and has been accounted for as an acquisition of assets. We expect to continue to incur significant losses for the foreseeable future as we continue to advance the development of our precision neuroscience platform and product candidates, and as we transition to operating as a public company. Our net losses were $99.3 million for the year ended December 31, 2020 and $ million for the nine months ended September 30, 2021. As of December 31, 2020 and September 30, 2021, we had accumulated deficits of $99.3 million and $ million, respectively. Our primary use of our capital resources is to fund our operating expenses, which consist primarily of expenditures related to identifying, acquiring, developing, and in-licensing our technology platforms and product candidates, and conducting preclinical studies and clinical trials, and to a lesser extent, general and administrative expenditures.

We expect to continue to incur net operating losses for the foreseeable future. In particular, we expect our expenses and losses to increase substantially as we continue our research and development efforts, advance our product candidates through preclinical and clinical development, enhance our precision neuroscience platform and programs, expand our product pipeline, seek regulatory approval, prepare for commercialization, as well as hire additional personnel, protect our intellectual property, and incur additional costs associated with being a public company. We also expect to increase the size of our administrative function to support the growth of our business. Our net losses may fluctuate significantly from period to period, depending on the timing of our clinical trials and our expenditures on research and development activities.

We have primarily funded our operations to date primarily from the sale and issuance of our convertible preferred stock and convertible promissory notes. From our inception through September 30, 2021, we have raised aggregate gross cash proceeds of $ million, including from the sale of convertible preferred stock and borrowings pursuant to convertible promissory notes and cash acquired in our acquisitions of assets. As of September 30, 2021, we had $ million in cash. Based upon our current operating plan, we believe that the net proceeds from this offering, together with our existing cash as of the date of this prospectus, will enable us to fund our operating expenses and capital expenditure requirements through at least the next months from the date of this offering.

We will need substantial additional funding in addition to the net proceeds of this offering to support our continuing operations and pursue our long-term business plan, including to complete the development and commercialization of our product candidates, if approved. Until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our operations through public or private equity offerings or debt financings or other capital sources, which may include strategic collaborations or other arrangements with third parties, or other sources of financing. We may not be able to raise additional capital on terms acceptable to us or at all. If we are unable to raise additional capital on acceptable terms when needed, our business, results of operations, and financial condition would be adversely affected. The amount and timing of our future funding requirements will depend on many factors including the successful advancement of our platforms, programs, and product candidates. Our ability to raise additional funds may also be adversely impacted by potential worsening global economic conditions and disruptions to, and volatility in, the credit and financial markets in the United States and worldwide, such as those resulting from the ongoing COVID-19 pandemic.

Recent Acquisitions of Assets

BlackThorn Therapeutics, Inc.

In September 2020, we acquired all of the outstanding equity of BlackThorn Therapeutics, Inc. (BlackThorn), a privately held company, that was utilizing novel technology-based approaches integrated with data and translational science to link behavioral deficits with brain physiology to discover and develop targeted treatments for neurobehavioral disorders. In connection with our acquisition of BlackThorn, we primarily acquired a group of similar IPR&D assets, comprising two clinical-stage research and development programs involving a Kappa Opioid Receptor Antagonist (Kappa or NMRA-140) and a Vasopressin Receptor Antagonist (V1a or NMRA-511), as well as a cloud-based computational psychiatry and data platform being developed to support drug target identification, patient stratification and objective clinical trial endpoints (collectively, the BlackThorn IPR&D).

The transaction was accounted for as an acquisition of assets. The total upfront consideration transferred to stockholders of BlackThorn consisted of (i) an aggregate of 45,178,495 shares of our Series A-1 convertible preferred stock, with an acquisition date fair value of $36.6 million, (ii) warrants to purchase 2,292,672 shares of our Series A-1 convertible preferred stock, with an acquisition date fair value of $0.7 million, plus (iii) cash of $0.1 million. We also agreed to settle $11.0 million in principal and accrued interest due from BlackThorn related to promissory notes that were issued between April and August 2020. As part of the acquisition, we incurred transaction costs of $1.6 million.

The consideration transferred was allocated between the acquired BlackThorn IPR&D in the amount of $48.3 million, which was included in acquired in-process research and development expenses in our consolidated statement of operations and comprehensive loss for the year ended December 31, 2020, and other net assets at $1.7 million.

The former BlackThorn stockholders are entitled to contingent consideration in the form of development, regulatory approval and sales-based milestones of up to an aggregate amount of (i) with respect to NMRA-140, in the form of development and regulatory approval milestones of up to an aggregate amount of $365.0 million, including the potential for a milestone payment of $75.0 million upon completion of the Phase 2a clinical trial of NMRA-140 if certain success criteria are achieved, and sales-based milestones of up to an aggregate amount of $450.0 million and (ii) with respect to NMRA-511, in the form of development and regulatory approval milestones of up to an aggregate amount of $100.0 million and sales-based milestones of up to an aggregate amount of $100.0 million (the BlackThorn Milestones). With the exception of one development milestone in the amount of $10.0 million that is required to be settled in cash, the remaining BlackThorn Milestone payments may be settled in cash or shares of our equity, or a combination of both, at our sole discretion. None of the BlackThorn Milestones had been achieved as of September 30, 2021, and no amounts were recognized relating to the BlackThorn contingent consideration during 2020 or the nine months ended September 30, 2021.

We also established a carveout plan, pursuant to which each former holder of BlackThorn stock options as of immediately prior to the BlackThorn acquisition closing date was allocated a certain number of units (the BlackThorn Carveout Units) each of which represents a right to receive a portion of the BlackThorn Milestones upon the later of (i) the achievement of a BlackThorn Milestone and (ii) the vesting of the unit. As of September 30, 2021, none of the BlackThorn Milestones had been achieved or were probable of being achieved, and therefore no related expenses had been recognized.

Syllable Life Sciences, Inc.

In September 2020, we acquired all of the outstanding equity of Syllable, a privately held company focused on the development of advanced machine learning and computer vision technologies to automatically decipher body language in humans and laboratory animals. We primarily acquired proprietary rights and IPR&D of a behavior analysis machine learning and computer vision software tool, which was being developed to identify and quantify behavior as an indicator of neurological conditions (the Syllable IPR&D).

The Syllable transaction was accounted for as an acquisition of assets. The total upfront consideration transferred to the former stockholders of Syllable consisted of 4,894,847 shares of our Series A-2 convertible preferred stock, with an estimated acquisition date fair value of $4.9 million. As part of the acquisition, we also incurred transaction costs of $0.4 million.

The consideration transferred was allocated between the acquired Syllable IPR&D in the amount of $5.9 million, which was included in acquired in-process research and development expenses in our consolidated statement of operations and comprehensive loss for the year ended December 31, 2020, and net liabilities we assumed of $0.7 million.

The former Syllable stockholders are entitled to contingent consideration in the form of future milestone payments of up to $5.0 million upon the achievement of specified development milestones (the Syllable Milestones). At our sole discretion, the payment of such contingent consideration may be settled in cash or in shares of our equity, or a combination of both. None of the Syllable Milestones had been achieved as of September 30, 2021, and no related amounts were recognized relating to the Syllable contingent consideration during 2020 or the nine months ended September 30, 2021.

Propellex Bio, Inc.

In September 2020, we acquired all of the outstanding equity of Propellex, a privately held company focused on developing treatments for Parkinson's disease and other neurodegenerative diseases and neurological pathologies using small molecules, and whose primary assets consisted of an exclusive license for various preclinical small-molecule inhibitors and certain preclinical research results considered to be a single identifiable IPR&D asset acquired (the Propellex IPR&D).

The Propellex transaction was accounted for as acquisition of assets. The total upfront consideration transferred to the former stockholders of Propellex consisted of 10,002,633 shares of our Series A-2 convertible preferred stock, with an estimated acquisition date fair value of $10.0 million. As part of the acquisition, we also incurred transaction costs of $0.5 million.

The consideration transferred was allocated between the Propellex IPR&D in the amount of $11.1 million, which was included in acquired in-process research and development expenses in our consolidated statement of operations and comprehensive loss for the year ended December 31, 2020, and net liabilities we assumed of $0.6 million.

The former Propellex stockholders are entitled to contingent consideration in the form of development and regulatory approval milestones of up to an aggregate amount of $62.5 million and in the form of sales-based milestones of up to an aggregate amount of $160.0 million (the Propellex Milestones). Except for milestones occurring on or prior to the acceptance of an investigational new drug (IND) application, which are required to be settled in stock, the remaining Propellex Milestones may be settled in cash or shares of our equity, or a combination of both, at our sole discretion. None of the Propellex Milestones had been achieved as of September 30, 2021, and no amounts were recognized relating to the Propellex contingent consideration during 2020 or the nine months ended September 30, 2021.

In April 2021, we terminated the Propellex IPR&D program.

Alairion, Inc.

In November 2020, we acquired all of the outstanding equity of Alairion, a privately held company focused on the treatment of sleep disorders. We primarily acquired a group of similar IPR&D assets comprised of two preclinical research and development programs involving a H1 receptor antagonist (H1) and a GABA receptor positive allosteric modulator (GABA), as well as a drug discovery and optimization technology platform (collectively, the Alairion IPR&D).

The Alairion transaction was accounted for as an acquisition of assets. The total upfront consideration transferred to the former stockholders of Alairion consisted of the settlement of a senior secured promissory note of $1.8 million due from Alairion related to a promissory note that was issued in September 2020. As part of the acquisition, we incurred transaction costs of $0.3 million.

The consideration transferred was allocated to the acquired Alairion IPR&D in the amount of $4.3 million, which was included in acquired in-process research and development expenses in our consolidated statement of operations and comprehensive loss for the year ended December 31, 2020, and net liabilities we assumed of $2.1 million.

The former Alairion stockholders are entitled to contingent consideration in the form of future milestone payments of up to $33.5 million upon the achievement of specified development events related to the Alairion IPR&D and $135.0 million upon the achievement of specified commercialization events related to the Alairion IPR&D (Alairion Milestones). At our sole discretion, the payment of such contingent consideration may be settled in cash or shares of our equity, or a combination of both. None of the Alairion Milestones had been achieved as of September 30, 2021, and no related amounts were recognized relating to the Alairion contingent consideration during 2020 or the nine months ended September 30, 2021.

For additional details regarding our acquisitions of assets, see Note 6 to our audited consolidated financial statements included elsewhere in this prospectus.

Strategic License and Collaboration Agreements

We have assumed license arrangements with certain third parties as a result of our acquisitions, and have entered into several additional agreements with Amgen. Our significant agreements are summarized below. For additional details, see Note 10 to our audited consolidated financial statements included elsewhere in this prospectus.

2015 TSRI License Agreement

In connection with the acquisition of BlackThorn in September 2020, we gained rights under a license agreement between BlackThorn and The Scripps Research Institute (TSRI) originally entered into in November 2015, as amended in November 2017 and April 2019 (the 2015 TSRI License Agreement). Pursuant to the 2015 TSRI License Agreement, TSRI granted BlackThorn a worldwide, exclusive license under certain patent rights and a worldwide, non-exclusive license under certain know-how relating to TSRI's Kappa Opioid Receptor (KOR or NMRA-140) program, vasopressin 1a receptor (V1aR or NMRA-511) Antagonist program and oxytocin receptors (OTR) positive allosteric modulator program (collectively, the TSRI Programs). In each case, the license agreement grants rights to use, manufacture and commercialize products (i) that are covered by the relevant licensed patents, (ii) that involve the use or incorporation of the licensed know-how or (iii) that are KOR, V1aR or OTR modulators discovered by BlackThorn within two years of the effective date of the 2015 TSRI License Agreement, for diagnostic, prophylactic and/or therapeutic treatment of humans and animals. The license is sublicensable under certain conditions. The technology licensed under the 2015 TSRI License Agreement is used in our NMRA-140 and NMRA-511 research and development programs.

In exchange for the exclusive rights above, we are obligated, among other things, to pay TSRI (i) a nominal annual license fee due and payable on the first day of each calendar year and after the fourth anniversary creditable against any royalties due for such calendar year, (ii) development and regulatory milestone payments of up to $1.5 million in aggregate for the first product from each TSRI Program, which are contingent upon achieving specific development and regulatory milestone events and (iii) commercial milestone payments of up to $3.5 million in aggregate for each occurrence, which are contingent upon achieving specified commercialization milestone events. We are also obligated to pay tiered low-single digit royalties on future net sales of each royalty-bearing product and a percentage ranging from the mid-single digits to sub teen double digits of any sublicensing revenues we receive. The royalties are payable on a product-by-product and country-by-country basis until the later

of expiration of the last to expire valid claim in the licensed patents production in the world and ten years after the first commercial sale of such product in such country. We also paid a change of control success fee to TSRI in shares of our Series A-1 convertible preferred stock with a fair value of $0.3 million. As of September 30, 2021, we had not recorded any milestone or royalty payments under the 2015 TSRI License Agreement.

Harvard License Agreement

In connection with the acquisition of Syllable, we gained rights to a license agreement between Syllable and Harvard (the Harvard License Agreement) entered into in June 2020. Pursuant to the Harvard License Agreement, Syllable obtained an exclusive, worldwide, royalty-bearing, sublicensable license under certain patent rights and copyrights covering certain behavior imagining and behavioral tracking software, to develop and commercialize products and services based thereon.

Under the Harvard License Agreement, Syllable was required to pay Harvard a change of control payment, which we agreed to pay on Syllable's behalf as part of the acquisition and which was part of the net liabilities we assumed in the transaction. In addition, we are obligated, among other things, to pay Harvard (i) nominal specified annual license maintenance fees that are creditable against any royalty amounts payable for licensed products sold in the same year, (ii) mid-single digit royalties on future net sales of each royalty-bearing product and (iii) a percentage, ranging from the high-teens to low-double-digits, of any sublicensing revenues we receive. The royalties are payable on a product-by-product and country-by-country basis until the later of expiration of the last to expire valid claim in the licensed patents covering such product and the fifteenth anniversary of the first commercial sale of such product in such country.

In March 2021, we entered into an amendment to the Harvard License Agreement to, among other things, extend the timeline for us to meet our development and commercial milestones. Under the Harvard License Agreement, as amended, we are obligated to meet certain development and commercial milestones between December 2021 and January 2024. Failure to meet such milestones would constitute a material breach of contract and would provide Harvard with the right to immediately terminate the agreement.

Amgen Licenses and Collaboration Agreement

In September 2021, we entered into two license agreements with Amgen (the Amgen Licenses) pursuant to which we obtained exclusive, worldwide licenses under specified patents and know-how to develop, manufacture, use, commercialize and distribute products containing compounds that are directed to, in one case, CK1d (the CK1d License), and in the other case, GCase (the GCase License), for any and all uses. Under the Amgen Licenses, we agreed to pay Amgen up to an aggregate of $360.0 million in commercial milestone payments upon the achievement of certain sales thresholds per licensed product under the CK1d License and up to an aggregate $360.0 million in commercial milestone payments upon the achievement of certain sales thresholds per licensed product under the GCase License. We also agreed to pay tiered royalties at percentages ranging from the low to high-single-digits on annual worldwide net sales of licensed products under the CK1d License, and royalties at a low-single-digit percentage on annual worldwide net sales of licensed products under the GCase License, payable on a licensed product-by-licensed product and country-by-country basis until the later of the expiration of the last to expire licensed patent or Neumora patent claiming the composition of matter of such licensed product and the tenth anniversary of the first commercial sale of such licensed product in such country. Under each Amgen License, the royalty payments are subject to reductions on a country-by-country basis for lack of patent coverage, generic entry, and payment obligations for third-party licenses. Additionally, under each of the Amgen Licenses, if we enter into a sublicense agreement prior to the second anniversary of the effective date of the Amgen Licenses, then we are also obligated to pay Amgen a low-double-digit percentage of sublicense income we receive for the CK1d and/or GCase programs.

Concurrently with the Amgen Licenses, we entered into a collaboration agreement with Amgen (the Amgen Collaboration Agreement) to discover drug targets, biomarkers, Precision Phenotypes and other insights

associated with central nervous system (CNS) diseases utilizing Amgen's deCODE genetics and human data research capabilities. Under the Amgen Collaboration Agreement, Amgen grants us an exclusive license under intellectual property generated in the collaboration to exploit therapeutic compounds and diagnostics for use with therapeutics in the CNS field and we grant Amgen an exclusive license under intellectual property generated in the collaboration to exploit therapeutic compounds and diagnostics for use with therapeutics outside of the CNS field.

The term of the Amgen Collaboration Agreement is up to five years. We are committed to making quarterly payments to Amgen for their collaboration activities over the next three years totaling $62.5 million, or $75.0 million if certain progress milestones are achieved. There are no development or commercial milestones or royalty payments under the collaboration, however, Amgen has an exclusive option to negotiate, and the right of first negotiation, to obtain exclusive, worldwide licenses to research, develop, commercialize and otherwise exploit up to two therapeutic compounds or any pharmaceutical product containing such therapeutic compound arising from the collaboration.

As part of the agreements, we issued to Amgen 157.0 million shares of our Series A-2 preferred stock. Additionally, Amgen purchased 100.0 million shares of our Series A-2 preferred stock at a purchase price of $1.00 per share, for total consideration of $100.0 million. Subject to certain conditions, Amgen is also obligated to provide us additional financing of up to $100.0 million.

COVID-19 Impact

While we are actively monitoring the impact of the COVID-19 pandemic on our business, the extent of the impact of the pandemic on our business, operations, and clinical development timelines and plans remains uncertain. To date, the COVID-19 pandemic has delayed patient enrollment in our ongoing clinical trials and may further delay our initiation of preclinical studies and clinical trials, interrupt our supply chain, disrupt regulatory activities or have other adverse effects on our business and operations. The extent of the impact of the COVID-19 pandemic on our preclinical studies or clinical trials will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration or severity of the pandemic or the effectiveness of containment actions or treatments.

In response to the COVID-19 pandemic we have taken temporary precautionary measures intended to help minimize our risk of exposure to the virus for our employees, including implementing policies that allow our employees to work remotely and suspending most non-essential travel for our employees, none of which have had an adverse impact on our business. Certain third-party service providers have also experienced shutdowns or other business disruptions. The extent to which the COVID-19 pandemic may affect our business, operations and development timelines and plans, including the resulting impact on expenditures and capital needs, remains uncertain.

The COVID-19 pandemic has also caused significant volatility in public equity markets and disruptions globally that could adversely affect the economies and financial markets, resulting in an economic downturn that could affect our financing prospects.

For additional details regarding the COVID-19 pandemic's impact on our business, operations and prospects, see the section titled "Risk Factors."

Components of Operating Results

Operating Expenses

Research and Development

Research and development expenses consist of external and internal expenses, and primarily relate to our discovery efforts and development of our platforms, programs, and product candidates. We account for acquired

in-process research and development expenses from our strategic acquisitions, which accounts for a significant portion of our operating expenses, separately from research and development expenses.

External research and development expenses include, among others, amounts incurred with contract research organizations (CROs), contract manufacturing organizations (CMOs), preclinical testing organizations and other vendors that conduct research and development activities on our behalf. Internal research and development expenses include, among others, personnel-related costs, including salaries, benefits and stock-based compensation for employees engaged in research and development functions, laboratory supplies and other non-capital equipment utilized for in-house research, software development costs and allocated expenses including facilities costs and depreciation and amortization.

Because we are working on multiple research and development programs at any one time, we track our external expenses by the stage of program, clinical or preclinical. However, our internal expenses, including unallocated costs, employees and infrastructure are not directly tied to any one program and are deployed across multiple programs. As such, we do not track internal expenses on a specific program basis.

We expense research and development costs as incurred. Amounts recorded for external goods or services incurred for research and development activities that have not yet been invoiced are included in accrued liabilities in our consolidated balance sheets and often represent estimates. We estimate accrued expenses and the related research and development expense based on the level of services performed but not yet invoiced pursuant to agreements established with our service providers, according to the progress of preclinical studies, clinical trials or related activities, and discussions with applicable personnel and service providers as to the progress or state of consummation of goods and service. Payments for these activities are based on the terms of the individual agreements, which may differ from the pattern of costs incurred, and are reflected in our consolidated financial statements as prepaid expenses or other current assets or accrued liabilities. Nonrefundable advance payments that we make for goods or services to be received in the future for use in research and development activities are recorded as prepaid expenses. Such amounts are recognized as an expense as the goods are delivered or the related services are performed, or until it is no longer expected that the goods will be delivered, or the services rendered.

We expect our research and development expenses to increase substantially for the foreseeable future as we incur costs to further develop our precision neuroscience platform and advance our programs and product candidates through clinical development and pursue regulatory approval of our product candidates. The process of conducting the necessary preclinical and clinical research to obtain regulatory approval is costly and time-consuming, and the successful development of our product candidates is highly uncertain. As a result of the uncertainties discussed below, we are unable to determine the duration and completion costs of our research and development projects or when and to what extent we will generate revenue from the commercialization and sale of our product candidates.

Our research and development expenses may vary significantly based on factors such as:

- the number and scope of preclinical and IND-enabling studies;
- the effectiveness of our precision neuroscience platform at identifying target patient populations and utilizing the platform to enrich our patient population in our clinical trials;
- employee-related costs for personnel engaged in the design, development, testing and enhancement of our precision neuroscience platform related technology;
- per patient trial costs;
- the number of trials required for approval;
- the number of sites included in the trials;
- the countries in which the trials are conducted;

- the length of time required to enroll eligible patients;
- the number of patients that participate in the trials;
- the drop-out or discontinuation rates of patients;
- potential additional safety monitoring requested by regulatory agencies;
- the duration of patient participation in the trials and follow-up;
- the cost and timing of manufacturing our product candidates;
- the phase of development of our product candidates;
- the efficacy and safety profile of our product candidates;
- the extent to which we establish additional collaboration or license agreements; and
- whether we choose to partner any of our product candidates and the terms of such partnership.

A change in the outcome of any of these variables with respect to the development of any of our product candidates could significantly change the costs and timing associated with the development of that product candidate. We may never succeed in obtaining regulatory approval for any of our product candidates. We may obtain unexpected results from our preclinical studies and future clinical trials.

Acquired In-Process Research and Development

Acquired in-process research and development expenses consist of existing research and development projects at the time of the acquisition. Projects that qualify as IPR&D assets represent those that have not yet reached technological feasibility and have no alternative future use. Our acquisitions of assets occurring in 2020 all included IPR&D assets that had not yet reached technological feasibility and had no alternative future use, which resulted in a write-off of these IPR&D assets to acquired in-process research and development expenses in our consolidated statement of operations and comprehensive loss.

General and Administrative

General and administrative expenses include, among others, personnel-related costs, including salaries, benefits, and stock-based compensation for our employees in executive, finance, and other administrative functions, legal fees, professional fees incurred for accounting, audit, and tax services, recruiting costs, and other allocated expenses, including facilities costs and depreciation and amortization not included in research and development expenses. Legal fees are included within general and administrative expenses and are related to corporate and intellectual property related matters.

We expect our general and administrative expenses to increase substantially in the foreseeable future as we continue to support our research and development activities, grow our business and, if any of our product candidates receive marketing approval, commence commercialization activities. We also anticipate incurring additional expenses associated with operating as a public company, including increased expenses related to audit, legal, regulatory, and tax-related services associated with maintaining compliance with the rules and regulations of the SEC and standards applicable to companies listed on a national securities exchange, additional insurance expenses, investor relations activities and other administrative and professional services.

Other Income (Expense)

Change in Fair Value of Convertible Promissory Notes

Change in fair value of convertible promissory notes is related to the remeasurement of the $55.9 million in convertible promissory notes we issued in 2020 (the 2020 Bridge Notes) that were accounted for under the fair

value option. Until settlement, fluctuations in the fair value are based on the remeasurement of these instruments at each reporting period. Our convertible promissory notes were settled upon the closing of our Series A-2 convertible preferred stock financing in September 2020.

Other Expenses, Net

Other expense, net consists primarily of impairment charges related to the disposal of property and equipment that were no longer in use after we early terminated one of our leases in San Francisco, California.

Results of Operations

For the Period from November 22, 2019 (Inception) to December 31, 2019

The following table summarizes our results of operations for the period from November 22, 2019 (inception) to December 31, 2019:

	Period from November 22, 2019 (Inception) to December 31, 2019 (in thousands)
Operating expenses:	
General and administrative	$ 21
Total operating expenses	21
Loss from operations	(21)
Net loss and comprehensive loss	$ (21)

General and Administrative Expenses

General and administrative expenses were $21,000 for the period from November 22, 2019 (inception) to December 31, 2019 and were primarily attributable to legal and formation start-up costs. Our principal operations commenced in January 2020 when we hired our executive management team and initiated our fundraising and business development activities.

For the Year Ended December 31, 2020

The following table summarizes our results of operations for the year ended December 31, 2020:

	Year Ended December 31, 2020 (in thousands)
Operating expenses:	
Research and development	$ 17,614
Acquired in-process research and development	69,512
General and administrative	8,392
Total operating expenses	95,518
Loss from operations	(95,518)
Other income (expense):	
Loss from change in fair value of convertible promissory notes	(3,275)
Other expenses, net	(479)
Total other income (expense)	(3,754)
Net loss and comprehensive loss	$ (99,272)

Research and Development Expenses

The following table summarizes our research and development expenses by program for the year ended December 31, 2020:

	Year Ended December 31, 2020 (in thousands)
Direct external program expenses:	
NMRA-140 program	$ 2,714
NMRA-511 program	928
Preclinical programs	704
Internal and unallocated expenses:	
Personnel-related costs	8,899
Other costs	4,369
Total research and development expenses	$ 17,614

Research and development expenses were $17.6 million for the year ended December 31, 2020 as we ramped up our research and development operations following our strategic acquisitions. Direct external program expenses consist of $3.9 million of CRO costs and $0.4 million of other external research and development costs. Internal and unallocated expenses consist of $8.9 million of personnel-related costs, including $1.3 million of stock-based compensation, and $4.4 million of other costs primarily related to $1.8 million for contracted research and consulting activities, $1.0 million in software development and related costs, $0.7 million in unallocated contract manufacturing costs, $0.3 million in laboratory equipment and supplies, and $0.2 million in allocated facilities and depreciation and amortization.

Acquired In-Process Research and Development Expenses

Acquired in-process research and development expenses were $69.5 million for the year ended December 31, 2020 and were attributable to costs to acquire IPR&D assets upon the closing of our acquisitions of assets, as these assets had not yet reached technological feasibility and had no alternative future use.

General and Administrative Expenses

General and administrative expenses were $8.4 million for the year ended December 31, 2020 and were primarily attributable to $3.6 million of salaries and other personnel-related costs, including $0.4 million of stock-based compensation, $3.3 million for professional services and consulting fees, including $1.4 million for legal services primarily related to general corporate matters and $0.7 million for accounting and audit services, $0.7 million of other allocated costs, including facilities and rent expenses, and $0.4 million for insurance and other costs.

Change in Fair Value of Convertible Promissory Notes

The change in fair value of convertible promissory notes was $3.3 million for the year ended December 31, 2020 and was related to the remeasurement of our 2020 Bridge Notes prior to settlement in September 2020. The change was primarily driven by redemption discounts on certain 2020 Bridge Notes.

Other Expenses, Net

Other expenses, net was $0.5 million for the year ended December 31, 2020 and was primarily attributable to $0.4 million for impairment charges related to the disposal of property and equipment that were no longer in use after we early terminated one of our leases in San Francisco, California.

Unaudited Pro Forma Net Loss Per Common Share Information

Immediately prior to the completion of this offering, all outstanding shares of our convertible preferred stock will convert into shares of our common stock. The unaudited pro forma basic and diluted net loss per common share for the year ended December 31, 2020 and nine months ended September 30, 2021 was computed using the weighted-average number of shares of common stock outstanding, including the pro forma effect of the conversion of all outstanding shares of convertible preferred stock into shares of common stock, as if such conversion had occurred at January 1, 2020 or January 1, 2021 irrespective of when the convertible preferred stock was issued. Pro forma net loss per share does not include the shares expected to be sold in this offering.

The following table provides the computation of unaudited pro forma basic and diluted net loss per common share for the period presented:

	Year Ended December 31, 2020	Nine Months Ended September 30, 2021
	(in thousands except per share amounts)	
Numerator:		
Net loss	$	$
Denominator:		
Weighted-average common shares outstanding		
Weighted-average convertible preferred shares outstanding		
Pro forma weighted-average common shares outstanding, basic and diluted		
Pro forma net loss per common share outstanding, basic and diluted	$	$

Liquidity and Capital Resources

Sources of Liquidity

As of September 30, 2021, we held $ million of cash. We have primarily funded our operations with the net proceeds from the sale and issuance of our convertible preferred stock and convertible promissory notes. From inception through September 30, 2021, we have raised aggregate cash proceeds $ million, including from the sale of convertible preferred stock and borrowings pursuant to convertible promissory notes and cash acquired in our acquisitions of assets.

During the three months ended September 30, 2021, we issued and sold 191,250,000 shares of our convertible preferred stock in additional closings, resulting in aggregate cash proceeds of $191.3 million. We also issued and sold 100,000,000 shares of our convertible preferred stock in connection with the collaboration and license agreements with Amgen, resulting in cash proceeds of $100.0 million.

Since our inception, we have not generated any revenue from the sale of products and we have incurred significant net losses and negative cash flows from operations. Our primary use of our capital resources is to fund our operating expenses, which consist primarily of expenditures related to identifying, acquiring, developing, and in-licensing our technology platforms, programs, and product candidates, and conducting preclinical studies and clinical trials, and to a lesser extent, general and administrative expenditures. We have not yet commercialized any products and we do not expect to generate revenue from sales of any product candidates for a number of years, if ever. We had accumulated deficits of $99.3 million and $ as of December 30, 2020 and September 30, 2021, respectively.

Future Funding Requirements

We expect our expenses and operating losses will increase substantially over the foreseeable future as we continue our research and development efforts, advance our product candidates through preclinical and clinical

development, enhance our precision neuroscience platform and programs, expand our product pipeline, seek regulatory approval, prepare for commercialization, as well as hire additional personnel, protect our intellectual property and incur additional costs associated with being a public company. We also expect to increase the size of our administrative function to support the growth of our business. Our net losses may fluctuate significantly from period to period, depending on the factors described below. We are subject to the risks typically related to the development of new products, and we may encounter unforeseen expenses, difficulties, complications, delays, and other unknown factors that may adversely affect our business. The expected increase in expenses will be driven in large part by our ongoing activities, and our future capital requirements will depend on many factors, including:

- the scope, timing, progress, costs and results of discovery, preclinical development and clinical trials for our current or future product candidates;
- the number of clinical trials required for regulatory approval of our current or future product candidates;
- the effectiveness of our precision neuroscience platform at identifying target patient populations and utilizing the platform to enrich our patient population in our clinical trials;
- the costs, timing and outcome of regulatory review of any of our current or future product candidates;
- the costs associated with acquiring or licensing additional product candidates, technologies or assets, including the timing and amount of any future milestone, royalty or other payments due in connection with such acquisition or license;
- the cost of manufacturing clinical and commercial supplies of our current or future product candidates;
- the costs and timing of preparing, filing and prosecuting patent applications, maintaining and enforcing our intellectual property rights and defending any intellectual property-related claims, including any claims by third parties that we are infringing upon their intellectual property rights;
- our ability to access additional multimodal patient datasets;
- our ability to maintain existing, and establish new, strategic collaborations or other arrangements and the financial terms of any such agreements, including the timing and amount of any future milestone, royalty or other payments due under any such agreement;
- the costs and timing of future commercialization activities, including manufacturing, marketing, sales and distribution, for any of our product candidates for which we receive marketing approval;
- the revenue, if any, received from commercial sales of our product candidates for which we receive marketing approval;
- expenses to attract, hire and retain skilled personnel;
- the costs of operating as a public company;
- our ability to establish a commercially viable pricing structure and obtain approval for coverage and adequate reimbursement from third-party and government payers;
- addressing any potential interruptions or delays resulting from factors related to the COVID-19 pandemic;
- the effect of competing technological and market developments; and
- the extent to which we acquire or invest in business, products and technologies.

Based upon our current operating plan, we believe that our existing cash as of the date of this prospectus will enable us to fund our operating expenses and capital expenditure requirements through at least the next 12 months from the date of this offering. In addition, based upon our current operating plan, we believe that the net proceeds from this offering together with our existing cash as of the date of this prospectus, will enable us to

fund our operating expenses and capital expenditure requirements through at least the next months from the date of this offering. However, we anticipate that we will need to raise additional financing in the future to fund our operations, including the commercialization of any approved product candidates. We have based this estimate on assumptions that may prove to be wrong, and we could utilize our available capital resources sooner than we expect. We may also raise additional financing on an opportunistic basis in the future. We expect to continue to expend significant resources for the foreseeable future.

To complete the development and commercialization of our product candidates, if approved, we will require substantial additional funding. Until such time as we can generate significant revenue from sales of our product candidates, if ever, we expect to finance our operations through public or private equity offerings or debt financings or other capital sources, which may include strategic collaborations or other arrangements with third parties, or other sources of financing. We may not be able to raise additional capital on terms acceptable to us or at all. To the extent that we raise additional capital through the sale of equity or convertible debt securities, the ownership interest of our stockholders will be or could be diluted, and the terms of these securities may include liquidation or other preferences that adversely affect the rights of our common stockholders. Debt financing and preferred equity financing, if available, may involve agreements that include covenants limiting or restricting our ability to take specific actions, including restricting our operations and limiting our ability to incur liens, issue additional debt, pay dividends, repurchase our common stock, make certain investments or engage in merger, consolidation, licensing, or asset sale transactions. If we raise funds through strategic collaborations, partnerships, and other similar arrangements with third parties, we may be required to grant rights to develop and market product candidates that we would otherwise prefer to develop and market ourselves. If we are unable to raise additional capital on acceptable terms when needed, our business, results of operations, and financial condition would be adversely affected.

Our ability to raise additional funds may be adversely impacted by potential worsening global economic conditions and the recent disruptions to, and volatility in, the credit and financial markets in the United States and worldwide resulting from the ongoing COVID-19 pandemic. If we fail to obtain necessary capital when needed on acceptable terms, or at all, it could force us to delay, limit, reduce or terminate our product development programs, future commercialization efforts or other operations. Because of the numerous risks and uncertainties associated with research, product development and commercialization of product candidates, we are unable to predict the timing or amount of our working capital requirements or when or if we will be able to achieve or maintain profitability.

Cash Flows

The following table summarizes our cash flows for each of the periods presented:

	Period from November 22, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
	(in thousands)	
Net cash (used in) provided by:		
Operating activities	$ —	$ (26,760)
Investing activities	—	(11,237)
Financing activities	—	230,099
Net increase in cash and restricted cash	$ —	$ 192,102

Operating Activities

Net cash used in operating activities for the year ended December 31, 2020 was $26.8 million, which consisted of a net loss of $99.3 million and our net operating assets and liabilities of $3.1 million, which were partially offset by $75.6 million in non-cash charges. Our net operating assets and liabilities primarily resulted

from a decrease of $2.3 million in accounts payable and accrued liabilities, an increase of $0.4 million in prepaid expenses and a decrease of $0.3 million in operating lease liabilities as we established principal operations. The non-cash charges primarily consisted of $69.5 million of IPR&D assets acquired that were expensed to research and development upon acquisition as the assets had not yet reached technological feasibility and had no alternative future use, $3.3 million fair value loss on remeasurement of the 2020 Bridge Notes accounted for under the fair value option, including $0.4 million of noncash interest expense, $1.7 million of stock-based compensation, $0.4 million of impairment of property and equipment, $0.4 million of noncash operating lease expense and $0.1 million of depreciation and amortization.

Net cash used in operating activities for the period from November 22, 2019 (inception) through December 31, 2019 consisted of a net loss of $21,000, offset by an increase in accrued liabilities of $21,000. We were incorporated on November 22, 2019 (inception) and did not commence principal operations until January 2020.

Investing Activities

Net cash used in investing activities for the year ended December 31, 2020 was $11.2 million, which consisted of $12.8 million in purchases of promissory notes receivable related to our strategic acquisitions and $1.3 million purchase of property and equipment as we established principal operations, partially offset by $2.8 million of cash acquired in connection with our acquisitions of assets.

Financing Activities

Net cash provided by financing activities for the year ended December 31, 2020 was $230.1 million, which consisted primarily of net proceeds of $171.0 million from the issuance and sale of shares of our Series A-2 convertible preferred stock, proceeds of $55.9 million from the issuance of our 2020 Bridge Notes and net proceeds of $3.2 million from the issuance and sale of shares of our common stock.

Contractual Obligations and Other Commitments

The following table summarizes our contractual obligations and other commitments as of December 31, 2020:

	Payments Due by Period (in thousands)				
	Less than 1 Year	1 to 3 Years	3 to 5 Years	More than 5 Years	Total
Operating lease obligations	$ 926	$ 1,384	$ —	$ —	$ 2,310
Total contractual obligations	$ 926	$ 1,384	$ —	$ —	$ 2,310

Our operating lease obligations relate to our office and laboratory facilities located in Massachusetts and California with noncancelable lease terms expiring between 2021 and 2023. The table does not include the operating lease we entered into in March 2021 for our office space in South San Francisco, California, which commenced in April 2021 and ends in December 2023. Payments associated with this operating lease agreement will result in additional operating lease obligations not included in the above table of approximately $1.3 million plus operating expenses.

The table also does not include unconditional purchase obligations that will be due to Amgen under our September 2021 collaboration arrangement over the next three years totaling $62.5 million, or $75.0 million if certain progress milestones are achieved before the end of the first two years.

In 2020, we entered in a number of acquisitions of assets that are summarized in the subsection titled “Recent Acquisitions of Assets” above. As part of these acquisitions of assets, we are obligated to pay cash and/or stock for future contingent payments that are dependent upon future events, and in some cases, vesting by the

recipient of the contingent payment, such as our achievement of certain development, regulatory, and commercial milestones. We have also assumed license arrangements with various third parties, primarily as a result of our acquisitions, and have entered into additional agreements that are summarized in the subsection titled "Strategic License and Collaboration Agreements" above. In accordance with these agreements, we are obligated to pay, among other items, future contingent payments that are dependent upon future events such as our achievement of certain development, regulatory, and commercial milestones royalties, and sublicensing revenue in the future, as applicable. As of December 31, 2020, the timing and likelihood of achieving the milestones and generating future product sales are uncertain and therefore, any related payments are not included in the table above.

In addition, we enter into agreements in the normal course of business with CROs, CMOs and other vendors for research and development services. Such agreements generally provide for termination upon limited written notice. These payments are therefore not included in our contractual obligations table above.

Off-Balance Sheet Arrangements

Since our inception, we did not have, and we do not currently have, any off-balance sheet arrangements as defined in the rules and regulations of the SEC.

Critical Accounting Policies and Estimates

Our management's discussion and analysis of the financial condition and results of operations is based on our consolidated financial statements, which have been prepared in accordance with the U.S. generally accepted accounting principles, or GAAP. The preparation of our consolidated financial statements requires us to make estimates and assumptions that affect the reported amounts of assets, liabilities, expenses, and related disclosures. Our estimates are based on historical experience and on various other factors that are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

While our significant accounting policies are described in Note 2 to our audited consolidated financial statements included elsewhere in this prospectus, we believe that the following accounting policies are critical to understanding our historical and future performance, as these policies relate to the more significant areas involving management's judgments and estimates.

Acquisitions

We evaluate mergers, acquisitions and other similar transactions to assess whether the transaction should be accounted for as a business combination or an acquisition of assets. We first identify who is the acquiring entity by determining if the target is a legal entity or a group of assets or liabilities. If control over a legal entity is being evaluated, we also evaluate if the target is a variable interest or voting interest entity. For acquisitions of voting interest entities, we apply a screen test to determine if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. If the screen is met, the transaction is accounted for as an acquisition of assets. If the screen is not met, further determination is required as to whether we have acquired inputs and processes that have the ability to create outputs which would meet the definition of a business. Significant judgment is required in the application of the screen test to determine whether an acquisition is a business combination or an acquisition of assets.

For an acquisition of assets, a cost accumulation model is used to determine the cost of the acquisition. Common stock and convertible preferred stock issued as consideration in an acquisition of assets are generally measured based on the acquisition date fair value of the equity interests issued. We also determine if any components of a transaction should be accounted for as a part of an acquisition of assets and which should be

accounted for separately. Direct transaction costs are recognized as part of the cost of an acquisition of assets. We also evaluate which elements of a transaction should be accounted for as a part of an acquisition of assets and which should be accounted for separately.

The cost of an acquisition of assets, including transaction costs, are allocated to identifiable assets acquired and liabilities assumed based on a relative fair value basis. Goodwill is not recognized in an acquisition of assets. Any difference between the cost of an acquisition of assets and the fair value of the net assets acquired is allocated to the non-monetary identifiable assets based on their relative fair values. Assets acquired as part of an acquisition of assets that are considered to be IPR&D are immediately expensed unless there is an alternative future use in other research and development projects.

In addition to upfront consideration, our acquisition of assets may also include contingent consideration payments to be made for future milestone events or royalties on net sales of future products. We assess whether such contingent consideration is subject to liability classification and fair value measurement or meets the definition of a derivative. Contingent consideration payments in an acquisition of assets not required to be classified as a liability, or are accounted for as derivatives that qualify for a scope exception from derivative accounting, are recognized when the contingency is resolved, and the consideration is paid or becomes payable. Contingent consideration payments required to be classified as a liability, or accounted for as derivatives and do not qualify for a scope exception from derivative accounting, are recorded at fair value on the date of the acquisition and are subsequently remeasured to fair value at each reporting date. At the time a contingent consideration payment is made, we will determine whether the payment should be expensed or capitalized as an intangible asset based on the status of the IPR&D project. Further, any future payments that are contingent upon continued services to us are treated as compensation and are recognized beginning when it is probable such amounts will become payable through the date that the contingency is met.

We classify cash payments related to purchased intangibles in an acquisition of assets, including IPR&D assets, as a cash outflow from investing activities because we expect to generate future income and cash flows from these assets if they can be developed into commercially successful products.

If the target legal entity is determined to be a variable interest entity and not a business, all tangible and intangible assets acquired, including any IPR&D assets but excluding goodwill, and liabilities assumed, including contingent consideration, are recorded at their fair values. If the acquisition is determined to be a business combination, all tangible and intangible assets acquired, including any IPR&D asset, and liabilities assumed, including contingent consideration, are recorded at their fair value. Goodwill is recognized for any difference between the consideration transferred and our fair value determination. In addition, direct transaction costs in connection with business combinations are expensed as incurred, rather than capitalized.

To date, we have obtained control over, and are considered the accounting acquiror of, all of the entities we have acquired. None of the legal entities we acquired were considered to be variable interest entities, had ever generated revenue, have significant continuing physical facilities or an employee base that will not be integrated into working to support our combined operations, nor did they have any market distribution system, sales force, customers base, long term operating rights or material production techniques or trade names of significance.

Research and Development Expenses and Related Accrued Expenses

We record research and development expenses to operations as incurred. Research and development expenses represent costs incurred by us for the discovery and development of our product candidates and the development of our precision neuroscience platform technology and include: internal research and development expense, including personnel-related expenses (such as salaries, benefits and non-cash stock-based compensation) and other expenses, including laboratory supplies and other non-capital equipment utilized for in-house research, research and consulting expenses, software development costs, license fees and allocated expenses, including facilities costs and depreciation and amortization; external research and development expenses incurred under arrangements with vendors conducting research and development services on our behalf,

such as CROs, preclinical testing organizations, or CMOs. Costs to develop our technologies are recorded as research and development expense unless the criteria to be capitalized as internal-use software costs is met.

We have entered into various agreements with CROs and other vendors for clinical, non-clinical and manufacturing services. Payments made prior to the receipt of goods or services to be used in research and development are capitalized and recognized as expense in the period in which the related goods are received or services are realized or consumed. If the costs have been prepaid, this expense reduces the prepaid expenses in the consolidated balance sheets, and if not yet invoiced, the costs are included in accrued liabilities in the consolidated balance sheets. These costs are a significant component of our research and development expenses. We record amortization of prepaid expenses for these costs based on the estimated amount of work completed and in accordance with agreements established with these third parties. Such payments are evaluated for current or noncurrent classification based on when they will be realized. We estimate and record accrued research and development expenses based on the level of services performed but not yet invoiced pursuant to agreements established with our service providers, according to the progress of preclinical studies, clinical trials or related activities, and discussions with applicable personnel and service providers as to the progress or state of consummation of goods and services.

During the course of a clinical trial, the rate of expense recognition is adjusted if actual results differ from our estimates. We make judgments and estimates of accrued expenses as of each balance sheet date in our consolidated financial statements based on the facts and circumstances known at that time. The clinical trial accrual is dependent in part upon the timely and accurate reporting of CROs, CMOs and other third-party vendors. Although we do not expect our estimates to be materially different from amounts actually incurred, our estimates may vary from the actual results. To date, we have not experienced material differences between our accrued expenses and actual expenses.

We have and may continue to enter into license agreements to access and utilize certain technology. We evaluate if the license agreement is an acquisition of an asset or a business. To date, none of our license agreements have been considered to be an acquisition of a business. For acquisitions of assets, the upfront payments to acquire such licenses, as well as any future milestone payments made before product approval, are immediately recognized as acquired in-process research and development expense when due, provided there is no alternative future use of the rights in other research and development projects. These license agreements may also include contingent consideration in the form of cash. We assess whether such contingent consideration is subject to liability classification and fair value measurement or meets the definition of a derivative.

Fair Value Option

We have elected the fair value option to account for our convertible promissory notes that were issued and settled during 2020 and recorded these convertible promissory notes at fair value with changes in fair value recorded as a component of other income (expense) in the statement of operations and comprehensive loss. We concluded that it was appropriate to apply the fair value option to the convertible notes because there were no non-contingent beneficial conversion options related to the convertible promissory notes. As a result of applying the fair value option, direct costs and fees related to the convertible promissory notes were expensed as incurred and were not deferred. The probability-adjusted model used in valuing the fair value of our convertible debt is based on significant unobservable inputs, including but not limited to:

- timing and probability of a qualified financing event, which is defined as financing event through the issuance of shares for total gross proceeds of at least $50.0 million in cash;
- discount rates; and
- fair value of the underlying convertible preferred stock.

Increases or decreases in the fair value of the convertible promissory notes can result from updates to assumptions such as the expected timing or probability of a qualified financing event, or changes in discount

rates. Judgment is used in determining these assumptions as of the initial valuation date and at each subsequent reporting period. Updates to assumptions could have a significant impact on our results of operations in any given period. The convertible promissory notes were settled in September 2020.

Stock-Based Compensation

We measure and record expense related to all equity awards granted to employees and non-employees, including stock options and restricted stock awards, based on estimated fair values as of their grant dates. For stock-based awards with service conditions only, we recognize expense on a straight-line basis over the requisite service period, which is generally the vesting period of the respective award. For awards with performance conditions, we evaluate the probability of achieving the performance conditions at each reporting date. We recognize expense using an accelerated attribution method when it is deemed probable that the performance condition will be met. Stock-based compensation is classified in our consolidated statements of operations and comprehensive loss based on the function to which the related services are provided and is recognized for the portion of awards that have vested. Forfeitures are accounted for as they occur.

The fair value of restricted stock awards is determined on the date of grant based on the estimated fair value of our common stock on that date. The fair value of stock options is determined using the Black-Scholes option pricing model, which requires inputs based on certain subjective assumptions. These assumptions include:

- *Fair Value of Common Stock*— See the subsection titled "—Common Stock Valuations" below.
- *Expected Volatility*—As there is no trading history for our common stock, we have determined expected volatility based on the average historical stock price volatility of comparable publicly traded companies and expect to continue to do so until such time as we have adequate historical data regarding the volatility of our own traded stock price. The comparable companies are chosen based on their similar size, stage in the life cycle or area of therapeutic focus. The historical volatility is calculated based on a period of time commensurate with the expected term assumption.
- *Expected Term*—The expected term of our stock options is estimated using the simplified method for awards that qualify as plain-vanilla stock options. The simplified method calculates the expected term as the average of the time-to-vesting and the contractual life of the stock options.
- *Risk-Free Interest Rate*—We base the risk-free interest rate on the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award.
- *Expected Dividend Yield*—The expected dividend yield is assumed to be zero as we have never paid and have no plans to pay dividends on our common stock in the foreseeable future.

See Note 13 to our audited consolidated financial statements included elsewhere in this prospectus for information concerning certain of the specific assumptions we used in applying the Black-Scholes option pricing model to determine the estimated fair value of our stock options granted in the periods presented. Such assumptions involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our stock-based compensation expense could be materially different.

The intrinsic value of all outstanding options as of September 30, 2021 was $ million, based on the assumed initial public offering price of $ per share, which is the mid-point of the estimated price range set forth on the cover page of this prospectus, of which $ million is related to vested options and $ million is related to unvested options.

Common Stock Valuations

As there has been no public market for our common stock to date, the estimated fair value of the common stock underlying our stock options was determined by our board of directors, with input from management,

considering our most recently available third-party valuations of common stock and our board of directors' assessment of additional objective and subjective factors that it believed were relevant, and factors that may have changed from the date of the most recent valuation through the date of the grant, which intended all options granted to be exercisable at a price per share not less than the per share fair value of our common stock underlying those options on the date of grant. We believe that our board of directors has the relevant experience and expertise to determine the fair value of our common stock. Prior to our initial public offering, given the absence of a public trading market for our common stock, the valuations of our common stock were determined in accordance with the guidelines outlined in the American Institute of Certified Public Accountants Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation* (Practice Aid). The Practice Aid identifies various available methods for allocating enterprise value across classes and series of capital stock to determine the estimated fair value of common stock at each valuation date. In accordance with the Practice Aid, our board of directors considered the following methods:

- *Current value method* (CVM). Under the CVM, enterprise value is determined based on the balance sheet. This value is then first allocated based on the liquidation preference associated with preferred stock issued as of the valuation date, and then any residual value is assigned to the common stock.
- *Option-pricing method* (OPM). Under the OPM, shares are valued by creating a series of call options with exercise prices based on the liquidation preferences and conversion terms of each equity class. The estimated fair values of the preferred and common stock are inferred by analyzing these options.
- *Probability-weighted expected return method* (PWERM). The PWERM is a scenario-based analysis that estimates value per share based on the probability-weighted present value of expected future investment returns, considering each of the possible outcomes available to us, as well as the economic and control rights of each share class.

The assumptions we use in the valuation model are based on future expectations combined with management judgment. In the absence of a public trading market, our board of directors with input from management exercised significant judgment and considered numerous objective and subjective factors to determine the fair value of our common stock as of the date of each option grant, including the following factors:

- contemporaneous independent valuations performed by an independent third-party valuation firm;
- the prices of shares of our convertible preferred stock sold to investors in arm's length transactions, and the rights, preferences, and privileges of our convertible preferred stock relative to our common stock;
- our stage of development and material risks related to our business;
- our results of operations and financial position, including our levels of available capital resources;
- progress of our research and development activities;
- progress of our technology platform;
- the lack of marketability of our common stock as a private company;
- the status of strategic transactions;
- the hiring of key personnel and the experience of management;
- the likelihood of achieving a liquidity event, such as an initial public offering or a sale of our company, given prevailing market conditions;
- the market performance of comparable publicly traded companies;
- trends and developments in our industry; and
- external market conditions affecting the life sciences and biotechnology industry sectors.

The assumptions underlying these valuations represented our board of directors and management develop best estimates based on application of these approaches and the assumptions underlying these valuations, giving careful

consideration to the advice from our third-party valuation expert. Such estimates involve inherent uncertainties and the application of significant judgment. As a result, if factors or expected outcomes change and we use significantly different assumptions or estimates, our equity-based compensation could be materially different.

Following the closing of our initial public offering, our board of directors will determine the fair market value of our common stock based on the closing price as reported on the date of grant on the primary stock exchange on which our common stock is traded.

For our valuations performed prior to August 2021, we determined the OPM method was the most appropriate method for determining the fair value of our common stock based on our stage of development and other relevant factors. For our valuations performed in August 2021 and subsequently, we determined a hybrid method that probability-weighted the OPM and an IPO scenario was the most appropriate method for determining the fair value of our common stock based on our stage of development and other relevant factors.

JOBS Act Accounting Smaller Reporting Company Elections

We are an "emerging growth company," as defined in the JOBS Act. Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act until those standards apply to private companies.

We have elected to use this extended transition period for complying with certain new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date we (i) are no longer an emerging growth company or (ii) affirmatively and irrevocably opt out of the extended transition period provided in the JOBS Act. As a result, our consolidated financial statements may or may not be comparable to companies that comply with new or revised accounting pronouncements as of public companies' effective dates.

We are also a "smaller reporting company," as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company.

We have elected to take advantage of certain of the scaled disclosures available to smaller reporting companies, and will be able to take advantage of these scaled disclosures for so long as the market value of our voting and non-voting common stock held by non-affiliates is less than $250.0 million measured on the last business day of our second fiscal quarter, or our annual revenue is less than $100.0 million during the most recently completed fiscal year and the market value of our voting and non-voting common stock held by non-affiliates is less than $700.0 million measured on the last business day of our second fiscal quarter.

Quantitative and Qualitative Disclosures About Market Risk

We are exposed to market risks in the ordinary course of our business. These risks primarily include interest rate sensitivities.

Interest Rate Risk

We held cash of $ million as of September 30, 2021 deposited with several financial institutions that may exceed the Federal Deposit Insurance Corporation's insurance limits. Historical fluctuations in interest rates have not been significant for us and we do not believe that a hypothetical 1% change in market interest rates during any of the periods presented would have had a material effect on our consolidated financial statements included elsewhere in this prospectus. We had no outstanding debt as of December 31, 2020 or September 30, 2021.

Recent Accounting Pronouncements

See Note 2 to our audited consolidated financial statements included elsewhere in this prospectus for more information about recent accounting pronouncements, the timing of their adoption, and our assessment, to the extent we have made one yet, of their potential impact on our consolidated financial condition or results of operation.

BUSINESS

Our Mission

We are in the midst of a global brain disease crisis that is having a profound, enduring impact on patients, their families and society. Neuropsychiatric disorders and neurodegenerative diseases affect approximately 1.5 billion individuals globally, are typically chronic and progressive in nature and are associated with significant disability and a reduced quality of life. Over $110 billion is estimated to have been spent on neuroscience research and development since 2019 in the United States alone, representing approximately 33% of all disease-specific spending. However, only approximately 12% of all new therapies approved during that time period have been for the treatment of brain diseases. We believe the relative lack of progress and innovation within the broader central nervous system (CNS) landscape is due in large part to the complex, heterogeneous nature of such diseases, which makes defining patient populations and matching them with appropriate therapies challenging. As a result, patients, families and communities affected by brain diseases have been left behind.

The time has come to take a fundamentally different approach to the way treatments for brain diseases are developed. We founded Neumora to pioneer a new era of “precision neuroscience” medicines using our proprietary approach that leverages recent advances in data science and artificial intelligence and machine learning (AI/ML) technology to cut through the heterogeneity inherent in brain disease. By approaching patient enrichment and clinical development strategies through this lens, we aim to match the right patient populations to the right targeted therapeutics, thereby driving innovation and the potential for clinical success in this field and, ultimately, provide better therapies to patients. Our goal is to build a global, fully integrated precision neuroscience company that is purpose-built at scale to achieve our ambitious mission of conquering one of the greatest medical challenges of our generation.

Overview

We are a clinical-stage biotechnology company pioneering a precision medicine approach for brain diseases through the integration of data science and neuroscience. High failure rates have plagued neuroscience drug development for decades, contributing to a lack of targeted, effective medicines for brain diseases. Our approach aims to redefine neuroscience research and development by applying proprietary AI/ML methods to multimodal patient datasets in order to match defined patient populations with targeted therapeutics designed to address the underlying drivers of their disease. We believe our precision neuroscience approach will help us to cut through patient heterogeneity, thereby providing the potential to increase the probability of clinical success and improve patient outcomes. Through our internal discovery efforts and business development activities, we have rapidly scaled a pipeline currently consisting of eight clinical and preclinical precision neuroscience programs targeting a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases. Our team unites some of the world’s leading data scientists, neuroscience drug developers and company builders to usher in a new era of precision neuroscience and to accelerate the development of novel therapies for patients and families affected by brain diseases.

Patients with common neuropsychiatric disorders and neurodegenerative diseases, such as depression, schizophrenia, Parkinson’s disease and Alzheimer’s disease, can present with diverse symptoms and have multiple underlying disease drivers. However, despite the inherent heterogeneity of these disorders, patients are diagnosed based on broad disease classifications defined by subjective clinical symptoms rather than specific underlying genetics and biological mechanisms. As a result, clinical development in neuroscience to date has taken a “one-size-fits-all” based approach, where the inability to enrich for homogeneous cohorts of patients has led to a lower rate of clinical success.

Recent advancements in oncology provide a relevant analog for the impact of applying data-driven, precision medicine approaches to improve patient outcomes. For decades, cancers were classified based primarily on the affected organs, as researchers did not have the tools or technologies to develop effective treatments targeting the biological drivers of these malignancies. However, through the clinical implementation

of biopsies, high-throughput sequencing and the advancement in data science tools, the oncology field developed the ability to define cancers more precisely based on the rich insights generated from these data. Our goal is to extend a similar data-driven, precision approach for the treatment of brain diseases that leverages recent advancements in data science techniques to gain insight into the complex drivers of brain disease.

Our Precision Neuroscience Approach

We are taking a data-driven precision neuroscience approach to match the right patients to the right targeted therapeutics. Our platform is powered by advanced proprietary AI/ML methods that integrate and analyze datapoints from individual patients across multiple modalities of data to create what we refer to as "Data Biopsy Signatures," which represent maps of underlying disease mechanisms. Our platform then leverages these Data Biopsy Signatures to inform clinically relevant homogeneous patient populations, which we refer to as "Precision Phenotypes." These Precision Phenotypes serve as guides to match the right patients to the right targeted therapeutic. We believe we are the only company applying this approach, which has the potential to redefine neuroscience research and development, thereby increasing the probability of clinical success and creating more therapeutics that drive patient impact to address the global brain crisis.

Our precision neuroscience approach has four key components:

(1) **Inputs:** Multimodal patient datasets collected from public, partnered and internally generated proprietary sources, currently encompassing a library of billions of datapoints across five data modalities: genetic, imaging, EEG, digital and clinical, which we collect and ingest, or "onboard";

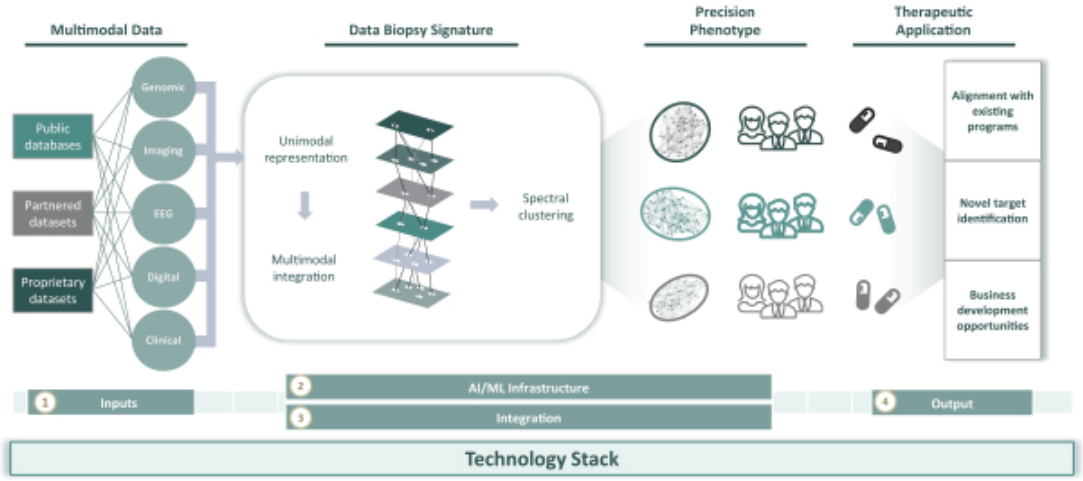
(2) **Infrastructure:** A data science platform that leverages proprietary AI/ML methods supported by a robust technology stack to organize, optimize, process and analyze the onboarded data;

(3) **Integration:** The application of our proprietary AI/ML methods to transform the rich multimodal patient datapoints drawn from our library into Data Biopsy Signatures that inform Precision Phenotypes; and

(4) **Output:** Therapeutic applications that leverage insights from our Precision Phenotypes to develop precision therapeutics that are targeted for distinct populations of patients who are more likely to respond.

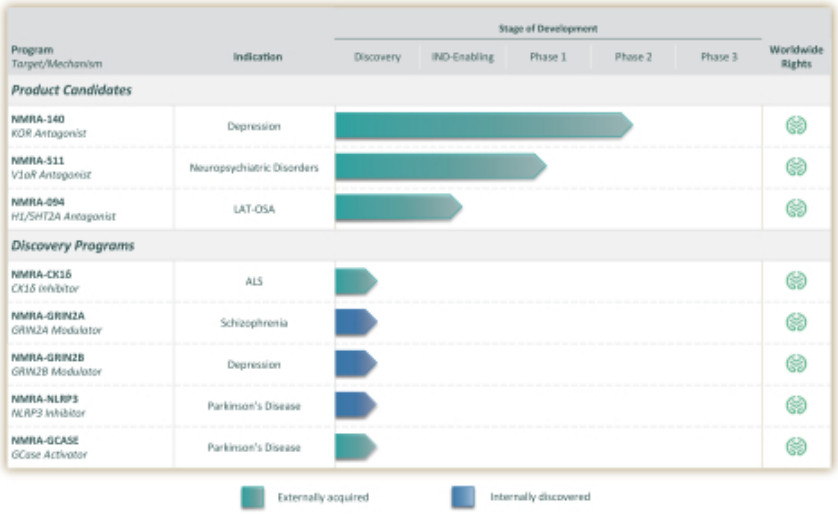
We plan to generate therapeutic applications to match the right patients to the right targeted therapeutics in three different ways: (i) by creating a drug signature for an existing program, which we refer to as a "pharmacological fingerprint," that can inform or align to a Precision Phenotype; (ii) by identifying novel targets through insights generated from our Precision Phenotypes, thus creating new programs; or (iii) by leveraging insights generated from our Precision Phenotypes to create new business development opportunities. As the last step in our precision development process, we intend to use the insights from Precision Phenotypes to inform the design of our clinical trials.

Our approach has been created through the tight integration of our data science and neuroscience expertise and our proprietary platform is protected by a broad and multi-faceted intellectual property portfolio. We believe our approach yields a powerful data flywheel of learning that positions us to generate a proprietary and dynamic "encyclopedia" of Precision Phenotypes across a broad range of neuropsychiatric disorders and neurodegenerative diseases in a repeatable and scalable manner to guide the development of novel precision therapeutics.



Our Precision Neuroscience Pipeline

We are building a broad pipeline of novel precision medicine candidates for neuropsychiatric disorders and neurodegenerative diseases, each with a targeted approach to development. Our precision neuroscience approach is flexible, and we are able to apply it in a modular fashion, which allows us to tailor our approach to both internal or external programs and at any stage of development. Since inception, we have rapidly scaled our pipeline through both internal discovery and external business development efforts. To date, our disclosed pipeline comprises eight programs, with two in clinical development, one in investigational new drug (IND)-enabling studies and five in the discovery stage.



NMRA-140 is an investigational antagonist of the kappa opioid receptor (KOR) in development for the treatment of major depressive disorder (MDD), which is a chronic neuropsychiatric disorder with significant unmet need given that nearly 70% of MDD patients fail to achieve remission with first-line treatment. The KOR/dynorphin system is a well-characterized pathway known to modulate depressive-like states. We believe that defining a precision subset of patients with MDD will identify those more likely to respond to a KOR antagonist. When we acquired BlackThorn Therapeutics, Inc. (BlackThorn) in September 2020, BlackThorn had initiated a Phase 2a clinical trial of BTRX-

335140, now known as NMRA-140, in adult patients with MDD. This Phase 2a clinical trial was initiated as a double-blind, placebo-controlled, randomized trial of NMRA-140 in 120 patients. We subsequently modified the trial to generate more unique data by increasing the target enrollment to 180 patients and added additional digital instrumentation to further augment and support our precision neuroscience approach. We have also created our OPKR1 (the gene encoding KOR) genetic-prediction model, which we intend to apply to peripheral DNA samples collected from patients enrolled in the trial. We plan to leverage the genetic, digital and clinical data generated from this trial to support future clinical development of NMRA-140. We anticipate topline results from the current trial will be available in .

NMRA-511 is an investigational antagonist of vasopressin 1a receptor (V1aR). Vasopressin plays a role in the regulation of aggression, affiliation, stress and anxiety response. Based on our encouraging preclinical findings in non-human primates as well as preclinical and clinical results from third parties, we believe V1aR has the potential to be a promising novel target for multiple neuropsychiatric disorders across the spectrum of anxiety, aggression and stress. Given the pan-diagnostic potential of this target, our approach is to quantify the neural signature that is reactive to a V1aR antagonist, which will define the pharmacological fingerprint. Our Phase 1b clinical trial is designed to generate a pharmacological fingerprint for NMRA-511 that could be aligned with a Precision Phenotype generated from multimodal patient datasets related to anxiety, post-traumatic stress and other neuropsychiatric disorders. We anticipate topline results from the Phase 1b data generation clinical trial will be available in .

NMRA-094 is an investigational dual antagonist of H1/5-HT2A receptors that we are developing for the treatment of low arousal threshold-obstructive sleep apnea (LAT-OSA). Approximately 40% of obstructive sleep apnea (OSA) patients have a phenotype of excessive sleep fragmentation, which is characterized by numerous brief arousals and awakenings that disrupt restorative sleep due to interruptions in airflow. Sleep fragmentation is associated with increased risk of cardiovascular disease and all-cause mortality. Histamine and 5-HT are two critical arousal mechanisms in the CNS, and their antagonism is believed to reduce sleep fragmentation. Patients with excessive sleep fragmentation have a low arousal threshold (LAT), which can be quantified by polysomnographic measures. We will identify a Precision Phenotype of the LAT-OSA population through multimodal clinical measures, including polysomnography in our Phase 1 clinical trials for NMRA-094. NMRA-094 is currently in IND-enabling studies to support a Phase 1 clinical trial that we expect to initiate for NMRA-094 in LAT-OSA.

NMRA-CK1d is a CK1d inhibitor program that we intend to develop for amyotrophic lateral sclerosis (ALS). CK1d is a kinase that has been identified as a proximal upstream regulator of TDP-43 phosphorylation, a key driver of TDP-43-driven pathology in approximately 95% of sporadic ALS cases. There is also genetic evidence linking TDP-43 to both familial and sporadic ALS. We are generating Precision Phenotypes for ALS from our integrated multimodal datasets and are in the process of creating a pharmacological fingerprint for our NMRA-CK1d program, which we will then align with a Precision Phenotype for future development. Our NMRA-CK1d program is in the discovery phase of development, and we may seek to identify other potential Precision Phenotypes associated with TDP-43-driven pathologies beyond ALS.

NMRA-GRIN2A is a GRIN2A positive allosteric modulator program designed to be selective for the GluN2A receptor subunit of the N-methyl-D-aspartate (NMDA) receptor that we intend to develop for the treatment of schizophrenia. Recent breakthroughs in psychiatric genetic studies have provided genetic evidence in support of the role of GRIN2A in schizophrenia. Furthermore, human studies suggest NMDA receptor antagonists (e.g., ketamine) lead to a schizophrenia-like syndrome, which provides compelling evidence for this target. We are generating Precision Phenotypes for schizophrenia from our integrated multimodal datasets and are in the process of creating a pharmacological fingerprint for our NMRA-GRIN2A program, which we will then align with a Precision Phenotype for future development. Our NMRA-GRIN2A program is in the discovery phase of development.

NMRA-GRIN2B is a GRIN2B negative allosteric modulator program designed to be selective for the GluN2B receptor subunit of the NMDA receptor that we intend to develop for subpopulations of patients with

MDD. Non-selective antagonism of the NMDA receptor is a clinically validated approach for a subpopulation of MDD, as evidenced by the approval of SPRAVATO (esketamine). Previous GRIN2B-selective approaches have inferred the same clinical efficacy as non-selective agents, but with less risk of dissociative side effects. We are generating Precision Phenotypes for MDD from our integrated multimodal datasets, which we will then align with the pharmacological fingerprint for our NMRA-GRIN2B program to define a Precision Phenotype for future development. Our NMRA-GRIN2B program is in the discovery phase of development.

NMRA-NLRP3 is an inhibitor program focused on targeting the NLRP3 inflammasome for the treatment of certain neurodegenerative conditions. The NLRP3 inflammasome can be activated in brain microglia and other cell types by a range of proteins linked to neurodegeneration, including alpha-synuclein, which suggests the inflammasome may have a mechanistic role in Parkinson's disease (PD). We are generating Precision Phenotypes for PD from our integrated multimodal datasets, which we will then align with the pharmacological fingerprint for our NMRA-NLRP3 program to define a Precision Phenotype for future development. Our NMRA-NLRP3 program is in the discovery phase of development.

NMRA-GCase is an activator program focused on elevating the activity of the enzyme glucocerebrocidase (GCase) that we intend to develop for the treatment of PD. Mutations in the GBA gene, which codes for the enzyme GCase, are the single largest genetic risk factor for PD. GCase deficiencies lead to lysosomal storage disorders, and a subgroup of patients with PD have lysosomal dysfunction. Leveraging the work from our NMRA-NLRP3 program, we are generating Precision Phenotypes for PD from our integrated multimodal datasets, which we will then align with our NMRA-GCase program to define a Precision Phenotype for future development. Our NMRA-GCase program is in the discovery phase of development.

Our Team and Investors

Our people are the backbone of the company and our most important asset. We have assembled a diverse team of experienced company builders, leading neuroscience drug developers and data scientists, complemented by world-class scientific and technical advisors and a board of directors and investors. This group shares a long-term vision to position us to execute on our mission to build a "precision neuroscience" company that is fundamentally shifting the approach to discovering and developing therapeutics for brain diseases.

- ***Experienced Company Builders.*** We have multiple individuals with experience building disruptive biotechnology companies. Our Co-Founder, and Chief Executive Officer and Chairman of our board of directors, Paul Berns, is a Managing Director at ARCH Venture Partners and was previously the President, Chief Executive Officer and Chairman of the Board of Anacor Pharmaceuticals, acquired by Pfizer in 2016. Our President and Chief Operating Officer, Lori Lyons-Williams, previously served as Chief Commercial Officer at Dermira, acquired by Eli Lilly in 2020. Carol Suh, our Co-Founder and Vice President of Business Development, is a Partner at ARCH Venture Partners and has built a number of biotechnology companies. Dr. Joshua Pinto serves as our Chief Financial Officer and has, from his time as an investment banker, experience advising leading biotechnology companies across their life cycles at Credit Suisse.
- ***Leading Neuroscience Drug Developers.*** Our scientific leadership team includes world-class scientists with extensive neuroscience drug development experience. Dr. John Dunlop, our Chief Scientific Officer, previously served as Vice President at Amgen, where he led the neuroscience research program, and prior to that was the Vice President and Head of Neuroscience at AstraZeneca and Pfizer. Our Chief Medical Officer, Dr. Jane Tiller held several positions at Bristol Myers Squibb including Vice President of Global Medical for Neuroscience, Virology & Immunoscience. Prior to that, Dr. Tiller served as Vice President of Neuroscience and Pain at Cephalon. Dr. Nick Brandon, our Chief Research Officer, previously served as Chief Scientist of AstraZeneca's Neuroscience Innovative Medicines and Early Development Division, as well as Head of Psychiatry and Behavioral Disorders in Pfizer's Neuroscience Research Unit.

- ***Expert Data Scientists.*** Our Chief Data Sciences Officer, Dr. John Reynders, leads our team of data scientists. Dr. Reynders is an experienced data scientist with over two decades of experience in computational science and its integration in the drug development process. He has served as Vice President of Data Science, Genomics and Bioinformatics at Alexion Pharmaceuticals, Founding Chief Information Officer at Moderna Therapeutics and Head of Neuroscience Biomarkers and Integrative Solutions at Johnson & Johnson. Our Vice President, Head of Data Sciences, Dr. Andrew Jaffe, is a leader in the field of computational neurogenetics and was previously an associate professor at Johns Hopkins University.
- ***Scientific and Technical Advisory Boards.*** We have built a scientific advisory board with research and drug development expertise spanning molecular genetics, neurobiology, molecular cell biology, neural circuitry, medicinal chemistry, translational medicine and the development of statistical methodologies across a broad spectrum of neuropsychiatric disorders and neurodegenerative diseases. We have also established a technical advisory board with expertise that includes computational and cognitive neuroscience, brain behavior mapping, the identification of biomarkers and treatment response, and the application of data science, AI/ML and digital tools to the development and delivery of therapeutics.
- ***Board of Directors and Investors with Shared Long-Term Vision.*** Our board of directors is comprised of renowned company builders, operators, leaders, scientists, drug developers and investors with experience across a diverse array of companies. We have raised over $500 million of capital as of September 30, 2021. We are supported by a group of leading institutional investors and our strategic collaborator, Amgen, who share our vision of building a groundbreaking, precision neuroscience company.

Our Strategy

We are taking a fundamentally different approach to the way treatments for brain diseases are developed across neuropsychiatric disorders and neurodegenerative diseases. Our mission is to usher in a new era of precision neuroscience to transform care for patients and families affected by these diseases. The key components of our business strategy to deliver on our mission are to:

- ***Build a leading global precision neuroscience company to revolutionize the treatment of brain diseases.*** We founded Neumora to pioneer a new era of precision neuroscience medicines that aims to improve the standard of care for patients with brain diseases. By leveraging our proprietary data sciences platform to deconvolve the inherent heterogeneity of these diseases, we are advancing a pipeline of product candidates for large, underserved patient populations with neuropsychiatric disorders and neurodegenerative diseases. We plan to supplement our current pipeline through strategic transactions and business development, and, as our pipeline and capabilities mature over time, become the partner of choice for neuroscience-focused companies. Our company is being built to operate at scale, and we will continue to invest in our technology and infrastructure to support our goal of driving global impact for patients, families and communities affected by brain diseases.
- ***Create a dynamic encyclopedia of Precision Phenotypes across neuropsychiatric disorders and neurodegenerative diseases, which will serve as a proprietary roadmap for therapeutic application.*** Our scalable precision neuroscience platform integrates multiple modalities of data into Data Biopsy Signatures to identify and define patient subtypes through the development of homogeneous patient populations and the translation of those populations to Precision Phenotypes. We are creating an encyclopedia of Precision Phenotypes across neuropsychiatric disorders and neurodegenerative diseases that will serve as a proprietary roadmap that we can use to match the right patients to the right targeted therapeutics in a repeatable and scalable fashion.
- ***Build an industry-leading pipeline of precision neuroscience therapeutics.*** Our data science approach objectively defines Precision Phenotypes to inform the patient selection process in advance of lengthy and costly proof of concept and pivotal clinical trials. This data science driven approach allows us to

design our clinical development programs by targeting upfront the patient populations that we believe will respond most favorably. We are applying this approach to more efficiently prioritize and develop our current pipeline of eight programs. We will also use this approach to inform our discovery, translational and clinical strategies.

- ***Continually evaluate strategic external opportunities to maximize our patient impact.*** To maximize the value of our data science driven approach, we will not be constrained solely to the development of internally discovered assets. We believe our precision neuroscience platform has the potential to identify Precision Phenotypes that may be applicable to partnered programs. We will continue to actively evaluate in- and out-licensing opportunities, strategic collaborations and corporate acquisitions to optimize our product pipeline, enhance our data science platform and leverage our encyclopedia of Precision Phenotypes to pioneer a new era of "precision neuroscience" medicines for patients. To further our goal of delivering transformative therapies to the broadest possible patient population, we intend to become a global, fully integrated precision neuroscience company.
- ***Further enhance our intellectual property portfolio to protect our precision neuroscience platform by covering our molecules, AI/ML methods and Precision Phenotypes.*** Our intellectual property estate is broad and multi-faceted. Our molecule patents include composition of matter and method of treatment patents that span a diverse set of targets and indications. Our AI/ML patents cover key artificial intelligence algorithms and machine learning-based processes for discovering, diagnosing and monitoring Precision Phenotypes from multimodal data. Our Precision Phenotypes are protected by biomarker patents that cover methods of diagnosing and treating the relevant patients with our molecules, which uniquely extends and enhances the patent lifecycle for our programs.

Our company has been purpose-built at scale to achieve our ambitious mission of changing the paradigm for developing treatments for diseases of the brain. We intend to continue to invest at scale in our platform, our people and our programs to achieve our goal of building a global, fully integrated precision neuroscience company.

Industry Background and Historical Challenges

The market for therapeutics for brain diseases is large, accounting for more than $80 billion in worldwide revenue in 2020. However, approximately half of the patient population suffering from brain diseases remains underserved due to poor efficacy and side-effect profiles of existing therapeutics. For example, depression is an underserved neuropsychiatric disorder that is estimated to affect 5% of the global adult population, approximately one-third of such patients are resistant to current treatment options, leading to devastating effects in the quality of life of these patients and their families.

The human brain is complex – it possesses a large number of cell types and has diverse signaling pathways and intricate neural circuitry – factors that make it challenging to gain a deep understanding of the underlying drivers of brain disease. Historical and current attempts at developing effective therapeutics for brain diseases have been focused on targeting patients who are classified by broad symptomatic domains. This "all comers" approach ignores the reality that different causal mechanisms may relate to the same brain disease – which we refer to as the heterogeneity problem. This paradigm has made the process of choosing, measuring and interpreting clinical endpoints with the most relevance difficult. The challenge is exacerbated during later stages of clinical development as therapies advance into larger trials which are lengthy and costly.

The heterogeneity problem affecting brain diseases has contributed to high clinical failure rates in this field. Additionally, from 2006 to 2015, clinical trial success rates for new drug candidates targeting broad neuropsychiatric disorders and other neuro-related diseases were approximately 6% and 8%, respectively, compared to success rates as high as 26% for certain other indications.

While the patient heterogeneity problem is not confined to brain diseases, other therapeutic areas, such as oncology, have developed data-driven, precision medicine approaches to enrich for homogeneous patient

populations (e.g., tissue biopsies), which are not practical for brain diseases. The inability to enrich for homogeneous cohorts of patients has led to high failure rates, large trials, and long timelines relative to other therapeutic areas. To address this challenge in neuroscience drug development and recapitulate the data-driven success we have seen in other therapeutic areas, a precision medicine approach is needed.

Our Precision Neuroscience Approach

We are taking a data-driven precision neuroscience approach to match the right patients to the right targeted therapeutics. Our platform is powered by advanced proprietary AI/ML methods that integrate and analyze datapoints from individual patients across multiple modalities of data to create what we refer to as "Data Biopsy Signatures," which represent maps of underlying disease mechanisms. Our platform then leverages these Data Biopsy Signatures to inform clinically relevant homogeneous patient populations, which we refer to as "Precision Phenotypes." These Precision Phenotypes serve as guides to match the right patients to the right targeted therapeutic. We believe we are the only company applying this approach, which has the potential to redefine neuroscience research and development, thereby increasing the probability of clinical success and creating more therapeutics that drive patient impact to address the global brain crisis.

Our precision neuroscience approach has four key components:

(1) **Inputs**: Multimodal patient datasets collected from public, partnered and internally generated proprietary sources, currently encompassing a library of billions of datapoints across five data modalities: genetic, imaging, EEG, digital and clinical, which we collect and ingest, or "onboard";

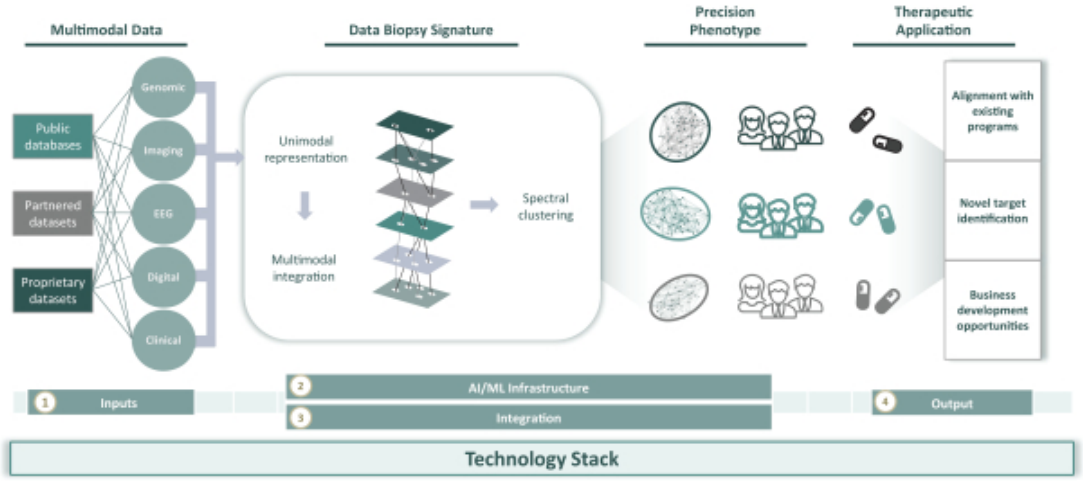
(2) **Infrastructur**e: A data science platform that leverages proprietary AI/ML methods supported by a robust technology stack to organize, optimize, process and analyze the onboarded data;

(3) **Integration**: The application of our proprietary AI/ML methods to transform the rich multimodal patient datapoints drawn from our library into Data Biopsy Signatures that inform Precision Phenotypes; and

(4) **Output**: Therapeutic applications that leverage insights from our Precision Phenotypes to develop precision therapeutics that are targeted for distinct populations of patients who are more likely to respond.

We plan to generate therapeutic applications to match the right patients to the right targeted therapeutics in three different ways: (i) by creating a drug signature for an existing program, which we refer to as a "pharmacological fingerprint," that can inform or align to a Precision Phenotype; (ii) by identifying novel targets through insights generated from our Precision Phenotypes, thus creating new programs; or (iii) by leveraging insights generated from our Precision Phenotypes to create new business development opportunities. As the last step in our precision development process, we intend to use the insights from Precision Phenotypes to inform the design of our clinical trials.

Our approach has been created through the tight integration of our data science and neuroscience expertise and our proprietary platform is protected by a broad and multi-faceted intellectual property portfolio. We believe our approach yields a powerful data flywheel of learning that positions us to generate a proprietary and dynamic "encyclopedia" of Precision Phenotypes across a broad range of neuropsychiatric disorders and neurodegenerative diseases in a repeatable and scalable manner to guide the development of novel precision therapeutics.



The Inputs: Our Vast Library of Multimodal Patient Datasets

Our approach starts with the collection and ingestion, or "onboarding," of multimodal patient datasets. Multimodal data means multiple types of data, which currently includes genomic, imaging, EEG, digital and clinical data collected from both single patients and unique cohorts of patients. We believe that multimodal data is critical for precision neuroscience because it enables us to use multiple lenses of data and insights to cut through the complexity of brain disorders. Interrogating multiple types of data, and linking disparate modes of systems-level and patient-level data, provide more opportunities to identify distinct characteristics that define patient groups. This enables a more comprehensive and precise understanding of the distinct disease drivers of that patient group.

Our platform has integrated billions of unique patient data points across modalities. Notably, our data platform is dynamic and scalable which allows us to add other data or modalities as they become available. We will continue to enhance our data library to build a robust collection of multimodal patient datasets across neuropsychiatric disorders and neurodegenerative diseases.

We collect our datasets from three sources: publicly available datasets, partnerships and the generation of proprietary datasets.

- Public datasets: To date, we have onboarded over 600 terabytes of longitudinal multimodal data. These longitudinal datasets consist of genetic, imaging, EEG, digital and clinical data across a range of neuropsychiatric disorders and neurodegenerative diseases, including schizophrenia, depression, anxiety, bipolar, ALS and PD. As the quality, quantity and availability of multimodal data continues to accelerate at a rapid pace, we believe our platform puts us in a unique position to onboard these datasets as they become available and continuously update and expand our proprietary encyclopedia of Precision Phenotypes.
- Partnered datasets: We will look to external partners such as academic institutions, hospital systems, governments, healthcare technology platform companies and commercial partners for additional sources of data to support our efforts. We will look to either onboard partnered data or work with partners to interrogate their data and inform unique insights about Precision Phenotypes for neuropsychiatric disorders and neurodegenerative diseases. For example, as part of our strategic collaboration with Amgen, we are working with deCODE genetics to interrogate their industry-leading genetic and medical data to help inform unique insights into Precision Phenotypes in the neuroscience field.

- Proprietary datasets: We currently generate proprietary data in three ways: (1) through our clinical trials; (2) through the use of translational screening platforms; and (3) derived data via the application of our proprietary, multimodal AI/ML methods to all of our data sources. Each of these data generation processes creates a feedback learning loop that improves and informs our multimodal, AI/ML methods.

Once the data is onboarded, there is a critical set of steps to organize, or stage, the data to enable our AI/ML analysis. In particular, we stage the data to enable the access and movement of large amounts (terabyte scale) of data around our cloud in a secure, fast, cost-effective fashion, which is a prerequisite to enable data analysis. To achieve this, we utilize staging technologies designed to optimize the flow and accessibility of data in our cloud-based system. Through our data engineering capabilities, we have created a streamlined process for rapidly onboarding and staging complex multimodal data, which has decreased our lead time to initiate data analysis from weeks to days. We are then able to leverage this onboarded and staged data to support multiple programs both within and across indications.

The Infrastructure: Our Proprietary AI/ML Methods

We have built a suite of tools in a cloud-enabled infrastructure that is the backbone for our precision neuroscience approach and has been built to support analytics across all of our programs. The infrastructure utilizes proprietary unimodal feature engineering algorithms and proprietary multimodal AI/ML methods that include integration, clustering, and end-to-end optimization capabilities that are supported by our technology stack. To date, we have logged over 1.5 million super computing hours across our projects, demonstrating the scale of our infrastructure and capabilities.

Proprietary Unimodal Feature Engineering Algorithms

We have built proprietary unimodal feature engineering algorithms with an initial focus on genetic, imaging, EEG, digital and clinical data modalities. In this step, we design features for each modality best able to discern clinically relevant differences in patient populations. The feature engineering algorithms prepare and optimize the features for multimodal AI/ML analysis. The table below is a summary of our current feature engineering capabilities across the five initial modalities: genetic, imaging, EEG, clinical and digital.

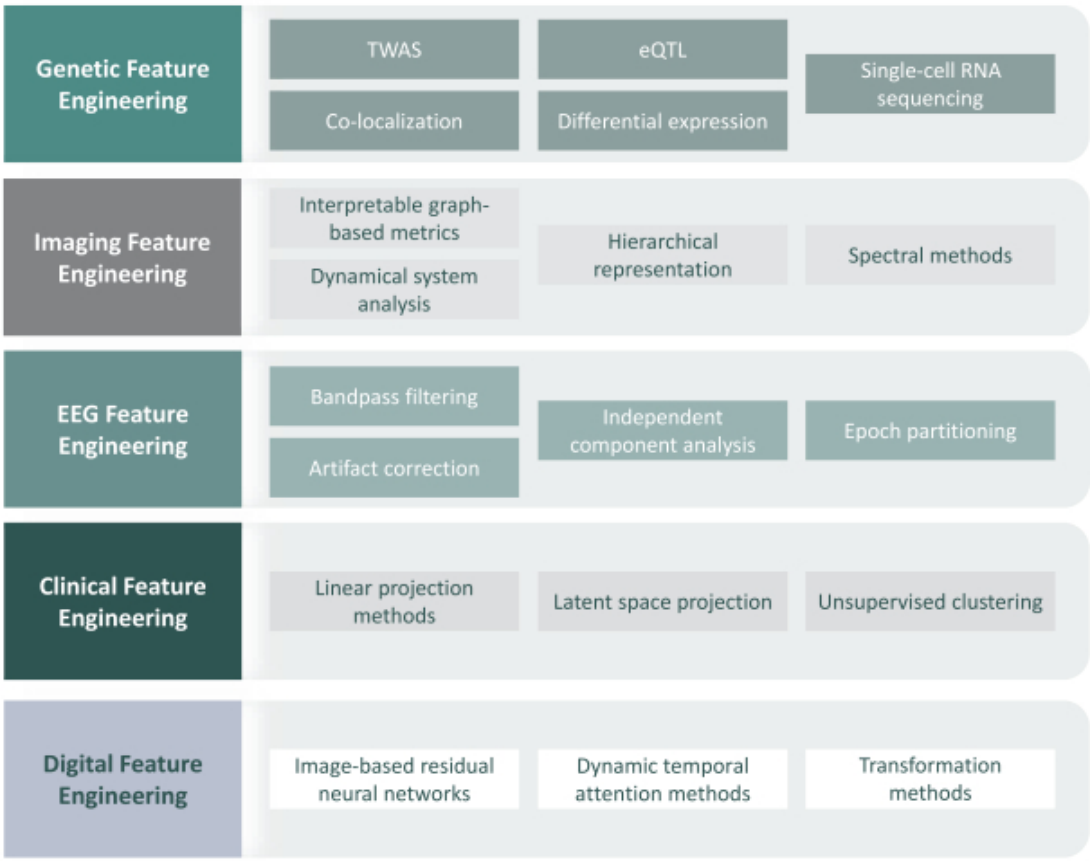


Figure 3: Proprietary unimodal feature engineering

Proprietary Multimodal AI/ML Methods

Once we have identified unimodal features, the data is ready for multimodal analyses. We have built proprietary AI/ML capabilities to integrate the unimodal features extracted through the feature engineering process into a compact, multimodal representation that integrates clinical and biological information across multiple data modalities for each patient. We use hypothesis-free, unsupervised AI/ML methods to enable the data to assign these patients into homogeneous subgroups of the broader heterogeneous population in an unbiased way. Below are the key proprietary AI/ML capabilities that we are developing:

- Deep Neural Networks: We use deep neural networks to combine each of the unimodal data components into a compact multimodal representation that highlights the most important factors of differentiation for each patient.
- Spectral Clustering Algorithms: We use proprietary clustering algorithms to group the integrated multimodal data into homogeneous subsets of patients. Our clustering techniques are designed to ensure cluster stability, robustness and interpretability.
- Alignment Techniques: We will align our Precision Phenotypes with pharmacological fingerprints using end-to-end AI/ML methods.

- Projection Techniques: We intend to map insights leveraged from our Precision Phenotype to clinical trial inclusion/exclusion criterion and diagnostic practice by using AI/ML methods which match data dimensions to standard clinical measures.

Our Cloud-Driven Technology Stack

To support our data science platform, we have assembled a cloud-driven technology stack that is purpose-built to enable the unimodal and multimodal components of our platform. Our technology stack spans eight areas:

- Cloud Engines: Utilizing both the Amazon AWS and Google Cloud platforms, we leverage cloud solutions to enable an agile and scalable high-performance computing environment for our precision platform.
- High Performance Storage: The data-intensive nature of our algorithms requires storage systems with low-latency and high-bandwidth integrated with high-performance computing clusters to enable computational throughput for our precision platform.
- HW Acceleration: Graphic Processing Units (GPUs) are superior to Central Processing Units (CPUs) for many neural network and associated AI/ML calculations in our platform. Our cloud solution enables on-demand provisioning of GPU clusters to enable burst hardware accelerated high-performance computing throughput for our algorithms.
- Computational Orchestration: The unimodal feature engineering and multimodal AI/ML components of our platform are each comprised of multiple computational modules which are coordinated and run in parallel through an orchestration layer. This enables the modules to sequence, share, and output their collective calculations into an integrated set of results.
- Data Staging: In concert with computational orchestration, data staging is a series of processes which configure data in optimal support of computational requirements, flowing data between high-performance storage, high-resilience storage, and long-term storage to balance speed and cost.
- Scalable DB Query: Some aspects of our system require very large out-of-core relational database queries against multi-terabyte datasets, which leverage the Google Cloud BigQuery environment to ensure rapid return of large-scale data queries.
- Service Layer: The complexity of our system is managed by enabling the reuse of common elements and components across our environment through a service layer providing standardized and reusable algorithmic, integration, query, and data management services.
- Monitoring: The throughput, uptime, and cost of the system is managed through multiple layers of monitoring to track in real-time and optimize CPU/GPU, network, and storage utilization across the entire cloud environment.

The technology stack we built enables fast and flexible scaling of storage and compute resources to manage the complex flow of modeling and analytics required through all stages of our precision neuroscience platform. By leveraging cloud solutions, we can provision super-computer scale throughput, including hardware acceleration of neural network methods, and integrate these systems with high-performance data storage systems, all on-demand. This enables a balance of high-throughput and cost-effective computation to drive our precision platform and its application across multiple programs and projects.

Integration: Transforming Rich Multimodal Patient Data into Data Biopsy Signatures and Precision Phenotypes

Our platform has been purpose-built to leverage patient data to cut through disease heterogeneity to support the development of precision neuroscience therapeutics. We do this by transforming rich multimodal patient data

into Data Biopsy Signatures and Precision Phenotypes. As shown in the figure below, this process involves three critical steps: (1) unimodal feature representation; (2) multimodal integration; and (3) interpretable cluster formation to inform Precision Phenotypes:

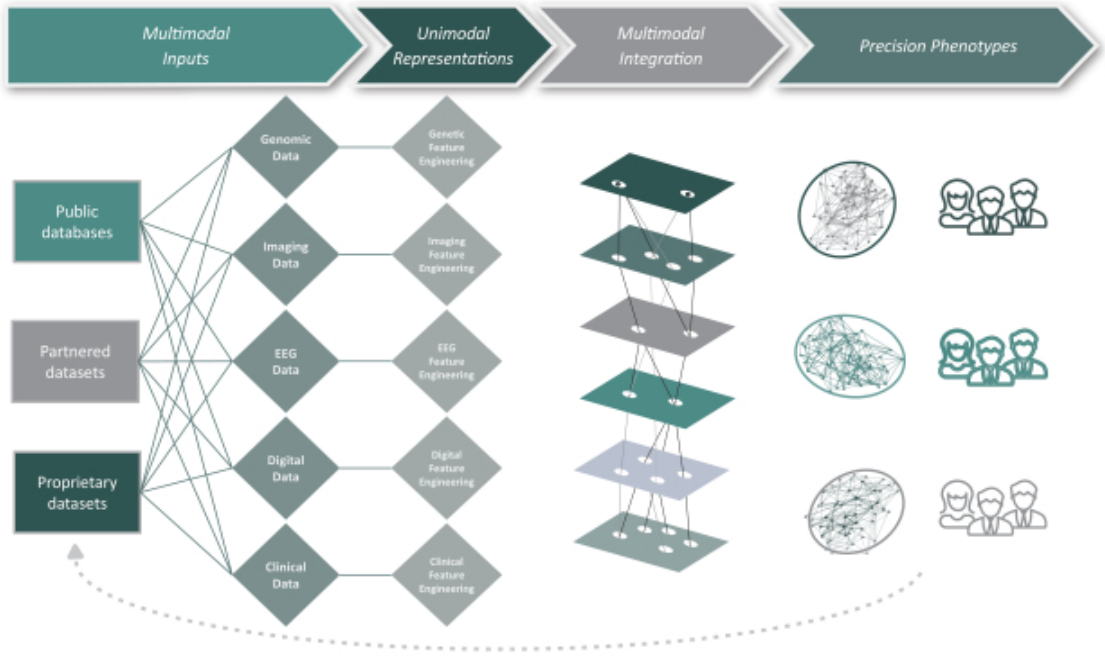


Figure 4: Our proprietary, integrated precision neuroscience platform

- Unimodal Feature Representation: Patient data is the cornerstone of our platform process. We start with data extracted from multimodal patient datasets across five domains: genetics, imaging, EEG, digital and clinical. We take the raw data and apply our feature engineering algorithms to each data mode to create features for our multimodal integration step. This feature engineering process is designed to enable differentiation of patient populations into subgroups.
- Multimodal Integration: These engineered unimodal feature representations are then ingested by our deep neural network technology which combines the features from each patient into a compact multimodal representation, or Data Biopsy Signature, for each patient.
- Cluster Formation: We then apply our spectral clustering algorithms, which can group these Data Biopsy Signatures from each patient to create Precision Phenotypes, which represent homogeneous patient populations. These Precision Phenotypes define clearly delineated groups that are optimized for clinically relevant interpretation.

The Output: Developing Therapeutics for Precision Phenotypes to Drive Patient Impact

We aim to enhance the value of our portfolio by defining distinct populations of patients who are more likely to respond to a given therapeutic. We call these distinct patient populations Precision Phenotypes. We plan to generate therapeutic applications to match the right patients to the right targeted therapeutics in three different ways: (i) by creating a drug signature for an existing program, which we refer to as a “pharmacological fingerprint,” that can inform or align to a Precision Phenotype; (ii) by identifying novel targets through insights

generated from our Precision Phenotypes, thus creating new programs; or (iii) by leveraging insights generated from our Precision Phenotypes to create new business development opportunities. As the last step on our precision development process, we intend to use the insights from Precision Phenotypes to inform the design of our clinical trial. By matching the right patient with the right drug, we believe our Precision Phenotype approach will lead to improved clinical outcomes and enable us to identify new precision therapeutics for patients with neuropsychiatric disorders and neurodegenerative diseases.

Align to Existing Programs

We create pharmacological fingerprints for our programs that we then align to a Precision Phenotype. Depending on the stage and origin of the program, we can create the pharmacological fingerprint either in parallel with or sequential to Precision Phenotype generation. This provides us with breadth and flexibility since it means we can elect to generate the pharmacological fingerprint during either the preclinical or clinical stage of development and to both programs that have been discovered internally or programs we acquire. Our existing pipeline reflects this flexibility, as we have generated Precision Phenotypes for indications targeted by our internally discovered programs while we are also generating Precision Phenotypes in parallel with ongoing clinical trials for our acquired programs.

Identify Novel Targets

As an example of the flexibility of our approach, we expect to leverage our encyclopedia of Precision Phenotypes to identify novel precision drug targets or pathways that forms the basis of new therapeutic programs. Once a Precision Phenotype is identified, we can look back at the data and interrogate the underlying systems biology to identify novel targets and explore pathways that underpin the disease drivers for that Precision Phenotype. If novel targets or pathways are identified, we can initiate a new program against that target and Precision Phenotype.

Create New Business Development Opportunities

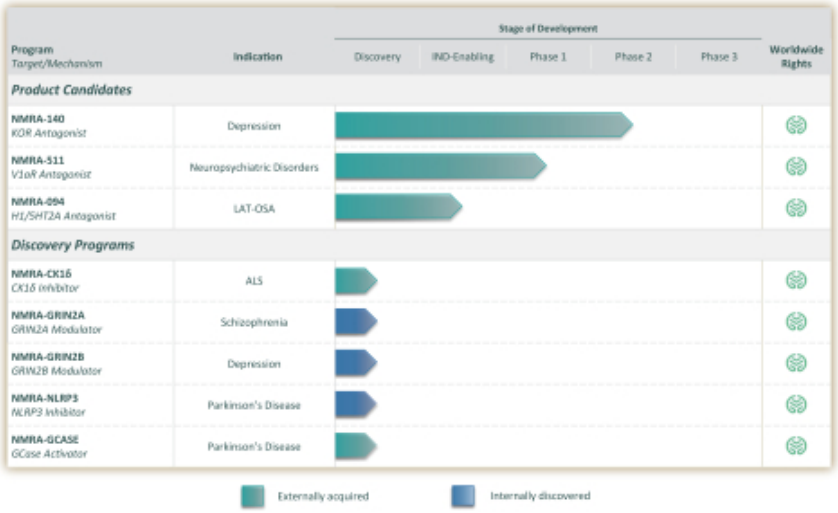
As another example of the breadth of our approach, we intend to leverage the encyclopedia of Precision Phenotypes we are building to identify business development opportunities that can become new programs or accelerate existing programs.

Creating an Encyclopedia of Precision Phenotypes across Neuropsychiatric Disorders and Neurodegenerative Diseases

We are generating a proprietary and dynamic encyclopedia of Precision Phenotypes across neuropsychiatric disorders and neurodegenerative diseases. We believe this encyclopedia will provide a proprietary roadmap of Precision Phenotypes within heterogeneous brain diseases that we can use to match the right patients to the right targeted therapeutics in a continuous and scalable fashion. The encyclopedia will continue to grow as we onboard data for new and existing neuropsychiatric disorders and neurodegenerative diseases.

Our Precision Neuroscience Pipeline

We are building a broad pipeline of novel precision medicine candidates for neuropsychiatric disorders and neurodegenerative diseases, each with a targeted approach to development. Our precision neuroscience approach is flexible, and we are able to apply it in a modular fashion, which allows us to tailor our approach to both internal or external programs and at any stage of development. Since inception, we have rapidly scaled our pipeline through both internal discovery and external business development efforts. To date, our disclosed pipeline comprises eight programs, with two in clinical development, one in IND-enabling studies and five in the discovery stage.



NMRA-140 (KOR)

NMRA-140 is an investigational antagonist of the KOR in development for the treatment of MDD, which is a chronic neuropsychiatric disorder with significant unmet need given that nearly 70% of MDD patients fail to achieve remission with first-line treatment. The KOR/dynorphin system is a well-characterized pathway known to modulate depressive-like states. We believe that defining a precision subset of patients with MDD will identify those more likely to respond to a KOR antagonist. When we acquired BlackThorn in September 2020, BlackThorn had initiated a Phase 2a clinical trial of BTRX-335140, now known as NMRA-140, in adult patients with MDD. This Phase 2a clinical trial was initiated as a double-blind, placebo-controlled, randomized trial of NMRA-140 in 120 patients. We subsequently modified the trial to generate more unique data by increasing the target enrollment to 180 patients and added additional digital instrumentation to further augment and support our precision neuroscience approach. We have also created our OPKR1 (the gene encoding KOR) genetic-prediction model, which we intend to apply to peripheral DNA samples collected from patients enrolled in the trial. We plan to leverage the genetic, digital and clinical data generated from this trial to support future clinical development of NMRA-140. We anticipate topline results from the current trial will be available in .

Indication Overview

MDD is a chronic psychiatric condition characterized by low mood and impairment in functioning, including episodes where an individual experiences a loss of interest or pleasure in daily activities and has symptoms such as problems with sleep, eating, energy, concentration or sense of self-worth. MDD affects an estimated 16.1 million adults in the United States.

Most currently approved therapeutics indicated to treat MDD target monoamine neurotransmitters. Approved therapeutics include selective serotonin reuptake inhibitors (SSRIs), serotonin and norepinephrine reuptake inhibitors (SNRIs) include and atypical antipsychotics. Nearly 70% of MDD patients fail to achieve remission with first-line treatment, which can be associated with negative side effects, including weight gain, sexual dysfunction, drowsiness, nausea and insomnia. Approximately 40% of patients on therapy discontinue treatment due to loss of response or adverse side effects.

Target Rationale

NMRA-140 is an investigational, small molecule inhibitor of the KOR, which we believe represents a novel potential approach to the treatment of MDD. The KOR and its ligand dynorphin are expressed in brain regions

that regulate the effects of stress on mood and cognition. Activation of KOR modulates neuronal circuits associated with many neuropsychiatric disorders, including depression, anxiety, schizophrenia and post-traumatic stress disorder (PTSD). The KOR/dynorphin system is an important mediator of stress-induced alterations in reward processing and dysphoric states. Evidence from postmortem studies in subjects diagnosed with MDD show dysregulation of genes associated via pathway with KOR across brain regions associated with social-bond formation, introspection, suicide and others.

There are multiple lines of converging clinical evidence implicating the role of the KOR system in dysphoria. KOR agonists have been shown to produce dysphoric effects in humans, suggesting KOR antagonists could be effective anti-depressants. Buprenorphine, a Mu opioid partial agonist/kappa antagonist used for treatment of opioid dependence, has also shown anti-depressive effects thought to be driven by KOR antagonism. We believe that the development of a highly selective and potent antagonist of KOR, which is paired with a Precision Phenotype, offers the opportunity for a novel, targeted anti-depressant therapy.

Pharmacological Properties

NMRA-140 is a potent and highly selective antagonist for KOR and, in preclinical studies, has shown 300-fold selectivity over the Mu opioid receptor. We believe this selectivity is important to avoid the potential negative effects of Mu antagonism on mood. An additional potential advantage of utilizing an antagonist such as NMRA-140 is that we believe it will not have the abuse liability associated with a mixed agonist/antagonist such as buprenorphine.

We evaluated the safety, tolerability and pharmacokinetics of NMRA-140 in a randomized, double-blind, placebo-controlled Phase 1 clinical trial consisting of single ascending dose (SAD) and multiple ascending dose (MAD) portions. In the SAD portion of the trial, 56 healthy subjects were randomized to receive either a single dose of NMRA-140 or placebo at doses ranging up to 240 mg. In the MAD portion, 32 healthy subjects were randomized to receive 10 daily doses ranging up to 160 mg. Food effect was also assessed in the SAD portion of the trial. In the Phase 1 trial, NMRA-140 showed generally dose-proportional pharmacokinetic results with a half life supportive of once-daily oral dosing.

NMRA-140 was found to be well-tolerated at all dose levels with no serious adverse events reported during the treatment and follow-up periods of the Phase 1 trial. In the ongoing Phase 2a clinical trial, we are monitoring visual acuity and corneal integrity based on an ocular phototoxicity finding that was observed in a preclinical rodent study at a dose exposure 14-fold higher than the 80 mg dose currently under clinical evaluation.

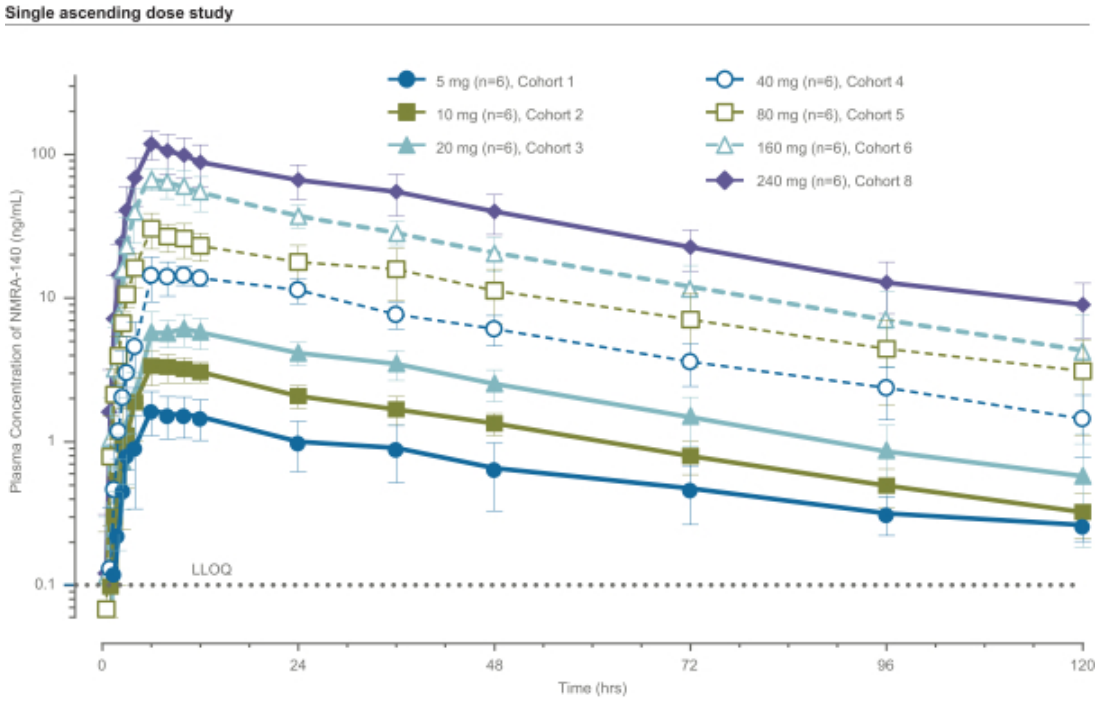


Figure 5: Single ascending dose study of NMRA-140 in healthy subjects (n=56)

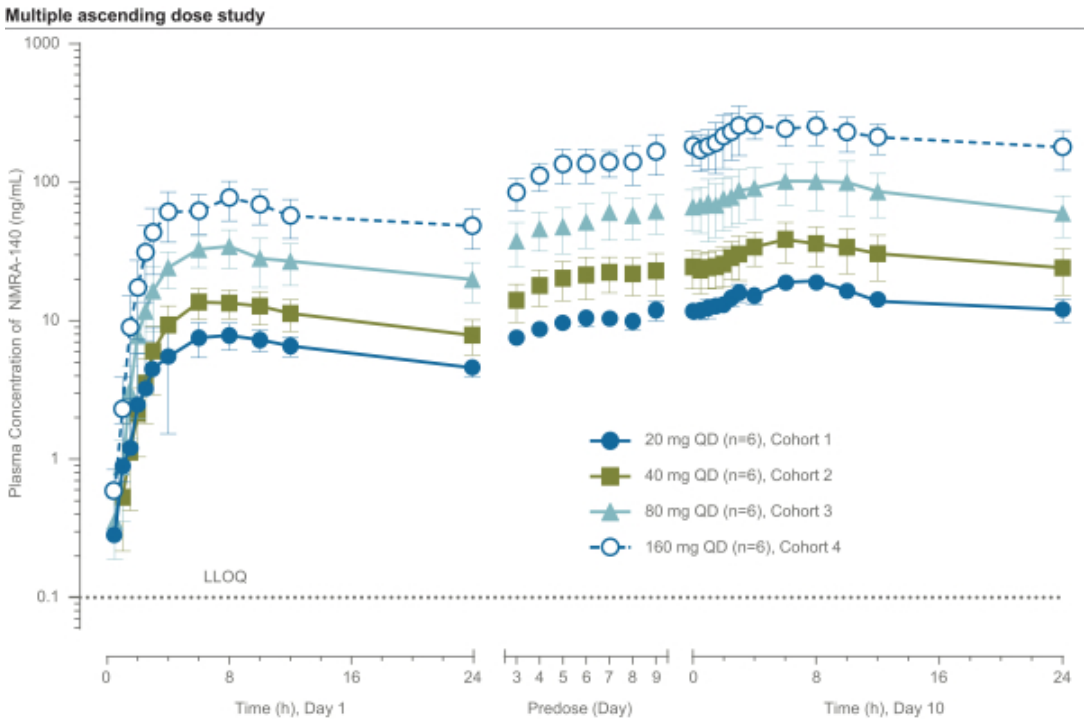


Figure 6: Multiple ascending dose study of NMRA-140 in healthy subjects (n=32)

We observed target engagement and receptor occupancy in a Phase 1 clinical trial in healthy human volunteers using a positron emission tomography (PET) ligand. Based on the results of the Phase 1 SAD/MAD and PET clinical trials, we were able to model receptor occupancy at various doses, and a dose of 80 mg is predicted to achieve approximately 80% to 90% receptor occupancy for 24 hours allowing for once daily dosing. We are evaluating the 80 mg dose in the ongoing Phase 2a clinical trial.

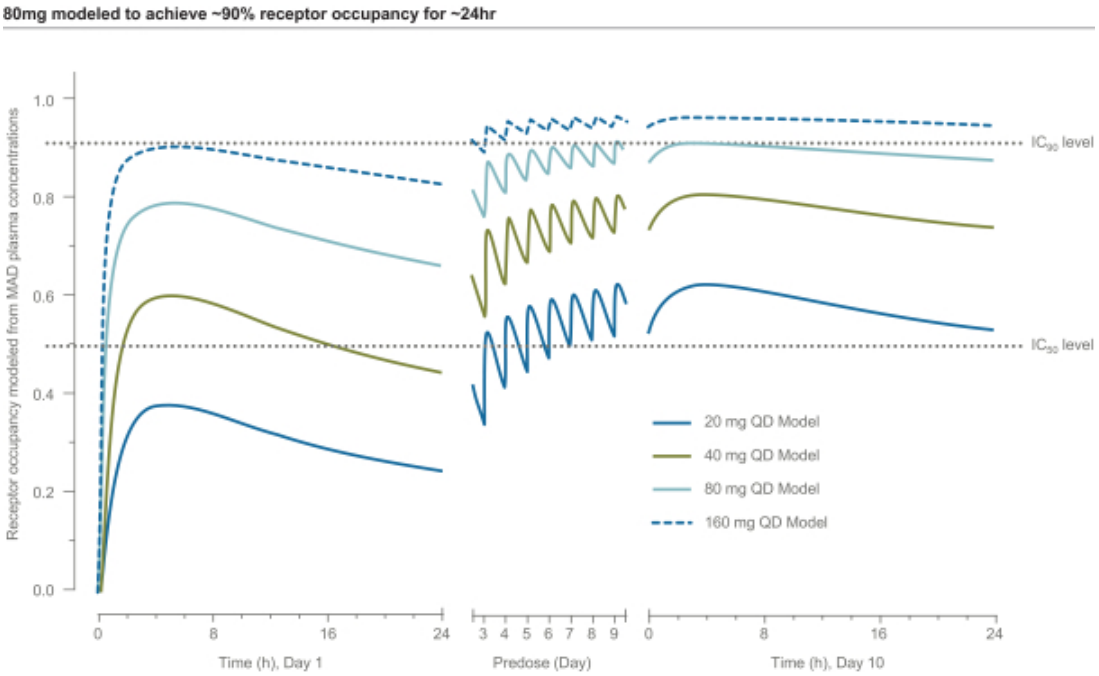


Figure 7: Receptor occupancy of NMRA-140 modeled at various doses

Data Science Approach

We are generating unique data for NMRA-140 in our ongoing Phase 2a clinical trial across genetic, digital and clinical modalities. We plan to leverage the data generated from this trial to support future clinical development of NMRA-140.

- Genetics: We have created a proprietary genetic model that is designed to predict expression of the OPRK1 gene, the gene that encodes the KOR, in the human brain based on sequence information (SNIPs) from peripheral DNA found in blood or saliva. We believe this model may yield a potential biomarker for treatment response to enable patient enrichment in future studies.
- Digital: We are utilizing two proprietary digital tools to explore objective measures of motivation and to identify novel digital signatures.
- Clinical: We are generating data in our Phase 2a clinical trial based on well-accepted measures of depression.

Development Plan

When we acquired BlackThorn in September 2020, BlackThorn had initiated a Phase 2a clinical trial of BTRX-335140, now known as NMRA-140, in adult patients with MDD. This trial was initiated as a double-

blind, placebo-controlled, randomized trial of NMRA-140 in 120 patients. The enrollment criteria were based on a rules list BlackThorn generated from an analysis of the Fast-fail Trial in Mood and Anxiety Spectrum Disorders (FAST-MAS) data. The rules list enriches for patients with pronounced anhedonia and is based on baseline scores across Hamilton Depression Rating Scale 17 item version (HAM-D17), Snaith Hamilton Assessment of Pleasure Scale (SHAPS) and Hamilton Anxiety Rating Scale (HAM-A). We believe that an effective KOR antagonist may have potential in MDD beyond anhedonia. We subsequently modified the trial to generate more unique data by increasing the target enrollment to 180 patients and added additional digital instrumentation to further augment and support our precision approach. We have also created our OPKR1 (the gene encoding KOR) genetic-prediction model, which we intend to apply to peripheral DNA samples from the clinical trial to evaluate the relationship between predicted gene expression and clinical response. We plan to leverage the genetic, digital and clinical data generated from this trial to support future clinical development of NMRA-140. We anticipate topline results from the current trial will be available in .

NMRA-511

NMRA-511 ***is an investigational antagonist of V1aR. Vasopressin plays a role in the regulation of aggression, affiliation, stress and anxiety response. Based on our encouraging preclinical findings in non-human primates as well as preclinical and clinical results from third parties, we believe V1aR has the potential to be a promising novel target for multiple neuropsychiatric disorders across the spectrum of anxiety, aggression and stress. Given the pan-diagnostic potential of this target, our approach is to quantify the neural signature that is reactive to a V1aR antagonist, which will define the pharmacological fingerprint for NMRA-511. Our Phase 1b clinical trial is designed to generate a pharmacological fingerprint for NMRA-511 that could be aligned with multiple neuropsychiatric disorders. We anticipate topline results from the Phase 1b data generation clinical trial will be available in .***

Indication Overview

Disorders with symptoms of anxiety, stress and aggression are some of the most common forms of mental illness in the United States. Related disorders include obsessive-compulsive disorder, PTSD, SAD, and generalized anxiety disorder (GAD). Aggression and violent behavior are found in a range of neuropsychiatric and neurodegenerative diseases, including dementia and Huntington's disease. Anxiety affects approximately 40 million adults in the United States every year. GAD alone affects 6.8 million adults in the United States. SAD affects approximately 15 million adults, and PTSD affects approximately 7.7 million adults in the United States (although now classified as separate from anxiety disorders in DSM V, there is significant overlap in the neural signature of PTSD and anxiety).

First-line anxiety treatments include anti-depressants such as SSRIs and SNRIs and buspirone, a serotonin 5-HT1A receptor agonist. However, first-line treatments often provide only modest relief and often take weeks to have an effect. Benzodiazepines targeting the GABA-A receptor are also known to have anti-anxiety activity and are prescribed as a second-line treatment or in combination with SSRI/SNRIs. However, benzodiazepines have negative side effects including cognitive impairment and sedation, and are prone to physical and psychological dependence. Therefore, we believe there is still a significant unmet need for safe and effective treatments for patients that suffer from the spectrum of anxiety and stress disorders.

Target Rationale

NMRA-511 is an investigational small molecule antagonist of V1aR, which we believe represents a novel approach to the treatment of neuropsychiatric disorders. V1aR is the receptor for arginine vasopressin (AVP), a neuropeptide implicated in a range of physiological processes, including mood and stress.

Preclinical studies support the involvement of the vasopressin system in mediating behaviors across multiple relevant symptoms, including physiological stress responses, aggression, avoidance, fear and anxiety. In

rodents, aversive stimuli increased vasopressin levels in brain regions implicated in anxiety pathophysiology, as demonstrated through functional neuroimaging and increased V1a receptor binding in hypothalamic regions important in mediating stress responses. Direct administration of vasopressin into the brain of rodents can increase fear and anxiety-like behavior, while systemic administration of V1a receptor antagonists and deletion of the V1aR gene resulted in decreased anxiety-like behaviors. Moreover, evidence that the V1a receptor is important in mediating aggression has been demonstrated using the selective V1a receptor antagonist, SRX251, which reduced aggressive behaviors and suppressed activity in key brain regions involved in aggression. Recently, a small study with SRX246, a V1a receptor antagonist, in human subjects demonstrated reduced anxiety induced by unpredictable threats.

Pharmacological Properties

NMRA-511 is a potent and highly selective antagonist for V1aR. In preclinical studies, NMRA-511 exhibited greater than 3,000-fold selectivity over the V1b and V2 receptors and approximately 300-fold selectivity over the oxytocin receptor. In a human threat test (HTT) of anxiety in marmosets, NMRA-511 reduced measures of anxiety. We believe these data suggest that NMRA-511 has the potential to address anxiety disorders. In the marmoset study, the dose associated with anxiolysis also resulted in changes in EEG spectral frequency in the alpha, beta and theta bands. In a human Phase 1 SAD/MAD clinical trial, quantitative EEG (qEEG) analysis showed corresponding changes in human subjects, potentially suggesting proof of mechanism. NMRA-511 showed oral bioavailability across animal species (20% to 78% bioavailability), with physicochemical and permeability results suggesting a high oral absorption potential in humans.

Data Science Approach

We are in the process of generating Precision Phenotypes for neuropsychiatric disorders from our integrated multimodal patient datasets that could be used to align with the pharmacological fingerprint of NMRA-511. To define the pharmacological fingerprint of NMRA-511, we are generating data across three modalities of genetics, imaging and clinical.

- Genetics: We are assessing genetic prediction models for AVPR1a, the gene that encodes the V1aR, in the human brain based on the sequence information from peripheral DNA found in blood or saliva. This could potentially yield a biomarker of treatment response to enable patient enrichment in future studies.
- Imaging: We will use pharmaco-fMRI in the Phase 1b clinical trial to evaluate the effects of V1aR antagonism on relevant brain circuits underlying anxiety and stress response. In addition, the fMRI signature generated from the Phase 1b study can form the basis of a pharmacological fingerprint that could align with Precision Phenotypes across multiple indications.
- Clinical: In future clinical trials, we will assess measures of efficacy that are associated with the representative indication.

Development Plan

We plan to evaluate NMRA-511 in a Phase 1b clinical trial that will initiate in 2021. This trial will be a pharmaco-fMRI study conducted in healthy subjects (n £ 50) utilizing a single-dose, balanced cross-over design. Each subject will receive NMRA-511 and placebo with a wash-out period between doses. Subjects will be imaged in the resting state and during the threat of shock task in both conditions (drug versus placebo). We believe the fMRI signature generated from healthy subjects will provide a more homogeneous signature of neural circuitry activation of NMRA-511 that can then be used to map across our multimodal patient datasets relevant to neuropsychiatric disorders, such as those related to anxiety, stress and aggression. We also plan to collect somatic biomarkers such as heart rate and galvanic skin response.

NMRA-094

NMRA-094 is an investigational dual antagonist of H1/5-HT2A receptors that we are developing for the treatment of LAT-OSA. Approximately 40% of OSA patients have a phenotype of excessive sleep fragmentation, which is characterized by numerous brief arousals and awakenings that disrupt restorative sleep due to interruptions in airflow. Sleep fragmentation is associated with increased risk of cardiovascular disease and all-cause mortality. Histamine and 5-HT are two critical arousal mechanisms in the CNS, and their antagonism is believed to reduce sleep fragmentation. Patients with excessive sleep fragmentation have a LAT, which can be quantified by polysomnographic measures. We will identify a Precision Phenotype of the LAT-OSA population through multimodal clinical measures, including polysomnography in our Phase 1 clinical trials for NMRA-094. NMRA-094 is currently in IND-enabling studies to support a Phase 1 clinical trial that we expect to initiate for NMRA-094 in LAT-OSA.

Indication Overview

OSA is a sleep disorder characterized by a recurrent obstruction of the airway during sleep resulting in arousal and awakening. Unfavorable upper airway flow and changes in upper airway function during sleep combine to cause the obstruction, but the physiology is not fully understood. OSA is associated with cardiovascular complications and mortality. LAT-OSA describes patients with increased likelihood to be aroused from sleep. Approximately six million patients have been diagnosed with OSA in the United States. The standard of care for LAT-OSA is Continuous Positive Airway Pressure (CPAP); however, 20% of LAT-OSA patients fail CPAP, primarily due to compliance issues, which underscores the high unmet medical need for an effective therapeutic.

Target Rationale

NMRA-094 is designed to antagonize histamine H1 receptors and serotonin 5-HT2A receptors, both of which are critical mechanisms of arousal in the CNS. Histamine is a small monoamine signaling molecule present both in the immune system and brain. In the brain, histamine promotes arousal and suppresses REM sleep. The H1 receptor depolarizes postsynaptic neurons and is crucial for the wake-promoting effects of histamine.

Previous third-party clinical studies demonstrated that H1 and 5-HT2A receptor antagonists caused sedation. H1 and 5-HT2A receptor antagonists are often used off-label for insomnia and over half of all OTC sleep aids contain H1 receptor antagonists, such as diphenhydramine or doxylamine.

Pharmacological Properties

NMRA-094 is a potent and selective dual antagonist of H1 and 5-HT2A receptors.

In preclinical studies in rats, NMRA-094 decreased the number of transitions from sleep to wake (TRANS), a measure of arousals, and increased the average sleep bout length (ASBL), a measure of sleep consolidation.

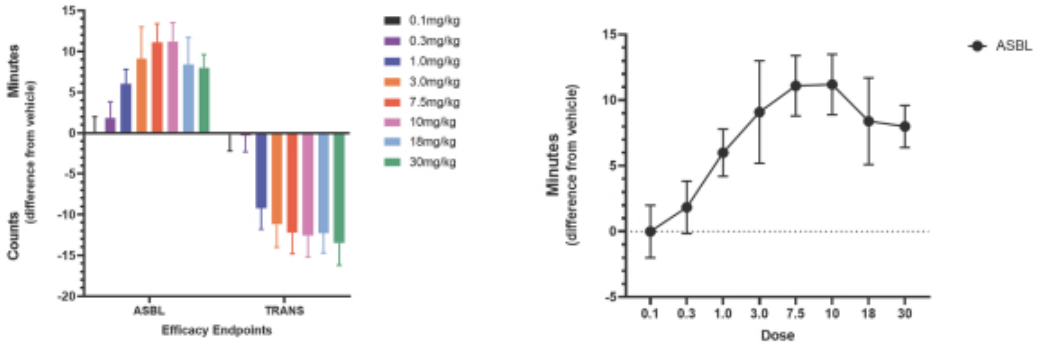


Figure 8: Preclinical studies of NMRA-094 in rats assessing ASBL and TRANS

Graph (A) demonstrates that oral administration of NMRA-094 produced a dose-dependent increase in ASBL and decrease in TRANS in preclinical rat studies. Graph (B) demonstrates that a dose response analysis of the effect of NMRA-094 on ASBL identified 3.0 mg/kg PO as the optimal dose in the study.

Data Science Approach

We are in the process of generating a Precision Phenotype of LAT-OSA from multimodal patient data as measured by polysomnography that could be used to align with the pharmacological fingerprint of NMRA-094.

- Polysomnography: The low arousal threshold is identified through polysomnography, or sleep study, which monitors brain activity (EEG), eye movements (EOG), muscle activity (EMG) and heart rhythm (ECG). Clinical research has identified a set of indices on standard polysomnography that reliably identifies the low arousal threshold phenotype.

Development Plan

We are evaluating NMRA-094 in GLP toxicology studies and anticipate progressing towards an anticipated IND filing. The Phase 1 clinical trial will consist of a SAD/MAD in healthy volunteers and a single dose crossover in LAT-OSA patients.

NMRA-CK1d

NMRA-CK1d is a CK1d inhibitor program that we intend to develop for ALS. CK1d is a kinase that has been identified as a proximal upstream regulator of TDP-43 phosphorylation, a key driver of TDP-43-driven pathology in approximately 95% of sporadic ALS cases. There is also genetic evidence linking TDP-43 to both familial and sporadic ALS. We are generating Precision Phenotypes for ALS from our integrated multimodal datasets and are in the process of creating a pharmacological fingerprint for our NMRA-CK1d program, which we will then align with a Precision Phenotype for future development. Our NMRA-CK1d program is in the discovery phase of development, and we may seek to identify other potential Precision Phenotypes associated with TDP-43-driven pathologies beyond ALS.

Indication Overview

ALS is a rapidly progressing neurodegenerative disease that affects motor neurons in the brain and spinal cord. As motor neurons die, the brain loses the ability to initiate and control muscle movement, and patients may lose the ability to speak, eat, move and breathe. Approximately 5,000 people in the United States are diagnosed with ALS each year, and approximately 16,000 patients live with ALS in the United States at a given time. ALS usually affects patients between the ages of 40 and 70.

Existing therapeutics have modest effects on survival and physical functioning with no effect on mortality and patients have an average life expectancy of two to five years from diagnosis, emphasizing the high unmet medical need.

Target Rationale

CK1d is a key proximal kinase phosphorylating TDP-43, a protein implicated in the pathology of both sporadic and familial ALS. Protein aggregates containing phosphorylated TDP-43 are present in degenerating motor neurons of ALS patients. It is hypothesized that reduction of TDP-43 phosphorylation with a CK1d inhibitor will reduce TDP-43 driven pathology and slow disease progression. Published data have demonstrated that CK1d inhibitors reverse aberrant TDP-43 related phenotypes both *in vitro* and *in vivo*.

Pharmacological Properties

NMRA-CK1d inhibitors have nanomolar potency, are selective over a number of other kinases and exhibit cell-based activity. Compounds have properties consistent with favorable CNS penetration and we are initiating experiments in both *in vitro* cell models and *in vivo*.

Data Science Approach

We are in the process of generating Precision Phenotypes from multimodal ALS datasets that we plan to align with the pharmacological fingerprint of NMRA-CK1d compounds. To define the pharmacological fingerprint for the CK1d program, we are looking to generate data across the two modalities of genetics and clinical.

- Genetics: We have onboarded the Answer ALS dataset and have analyzed the genetic architecture of ALS through multiple lenses, including TWAS, EQTL, differential expression, GWAS and co-localization
- Clinical: We have also applied our proprietary AI/ML methods to identify novel clusters of ALS patients based upon clinical data, which align with disease progression.

Development Plan

Our NMRA-CK1d program is in the discovery stage.

NMRA-GRIN2A

NMRA-GRIN2A is a GRIN2A positive allosteric modulator program designed to be selective for the GluN2A receptor subunit of the NMDA receptor that we intend to develop for the treatment of schizophrenia. Recent breakthroughs in psychiatric genetic studies have provided genetic evidence in support of the role of GRIN2A in schizophrenia. Furthermore, human studies suggest NMDA receptor antagonists (e.g., ketamine) lead to a schizophrenia-like syndrome, which provides compelling evidence for this target. We are in the process of generating Precision Phenotypes for schizophrenia and creating a pharmocological fingerprint for our NMRA-GRIN2A program.

Indication Overview

Schizophrenia is a debilitating neuropsychiatric disorder characterized by positive symptoms (e.g., delusions, hallucinations), negative symptoms (e.g., diminished emotional expression) and cognitive symptoms (e.g., deficits in types of memory). The disease is also associated with a 10 to 25 year reduction in life expectancy overall. It is estimated that approximately three million people in the United States have schizophrenia.

No therapies with a novel mechanism of action have been recently approved for schizophrenia, with all currently approved anti-psychotics based on mechanisms originally based on chlorpromazine, which was developed in the 1950s. Currently approved therapies focus on treating the positive symptoms of schizophrenia and have little impact on the negative or cognitive symptoms. They also have serious side-effects, including movement and metabolic effects, which historically has resulted in poor compliance.

Target Rationale

NMRA-GRIN2A is an investigational allosteric modulator of GRIN2A/GluN2A-containing NMDA glutamate receptors. Glutamate is the major excitatory neurotransmitter in the brain, and dysregulation of glutamate levels and downstream pathways has long been hypothesized to be a key molecular driver of schizophrenia. Recently large studies of the genetic basis of schizophrenia have identified the GRIN2A gene, which produces the GluN2A subunit of the NMDA receptor, as a critical genetic risk factor for the disease. Human pharmacology experiments have indicated that decreases in NMDA receptor activity can lead to schizophrenia-like symptoms in healthy volunteers. These studies suggest compounds which elevate NMDA receptor activity have the potential to treat the disease.

Pharmacological Properties

We have identified a series of investigational GRIN2A positive allosteric modulators that are designed to be potent, selective and orally bioavailable, and which are in the lead optimization stage. The lead molecules have been through cell-based assays to evaluate potential mechanism and selectivity. Currently, we are characterizing lead compounds in animal models to confirm target engagement and efficacy.

Data Science Approach

We are in the process of generating Precision Phenotypes from multimodal schizophrenia datasets that we plan to align with the pharmacological fingerprint of NMRA-GRIN2A compounds. To define the pharmacological fingerprint for the GRIN2A program, we are looking to generate data across the four modalities of genetics, imaging, EEG and clinical.

- Genetics: We have developed a proprietary TWAS-based genetic signature that may serve as a potential biomarker of treatment response to enable patient enrichment in our clinical studies.
- Imaging: We have developed proprietary hierarchical imaging feature signatures which we have applied to the imaging data in the Bipolar & Schizophrenia Network on Intermediate Phenotypes (B-SNIP) dataset which we have co-clustered with clinical data.
- EEG: GRIN2A targeted therapeutics can also be paired with quantitative biomarkers for patient stratification. Mismatch negativity (MMN) is a biomarker measured by EEG based on the brain's response to unexpected stimuli. MMN as a biomarker is robustly impaired in schizophrenia patients, translatable between rodents and humans, sensitive to NMDA receptor activity and linked to circuit level brain dysfunction. We have developed a proprietary EEG data processing pipeline and have onboarded the B-SNIP dataset which includes EEG data.
- Clinical: In future clinical trials we will assess measures of efficacy that are associated with Precision Phenotypes for schizophrenia.

Development Plan

Our NMRA-GRIN2A program is in the discovery stage.

NMRA-GRIN2B

NMRA-GRIN2B is a GRIN2B negative allosteric modulator program designed to be selective for the GluN2B receptor subunit of the NMDA receptor that we intend to develop for subpopulations of MDD.

Antagonism of the NMDA receptor is a clinically validated approach for subpopulations of MDD, as evidenced by the approval of esketamine. Early clinical studies with GRIN2B-selective compounds suggest similar clinical efficacy as ketamine but with less side effects associated with them. We are generating Precision Phenotypes for MDD from our integrated multimodal datasets, which we will then align with the pharmacological fingerprint for our NMRA-GRIN2B program to define a Precision Phenotype for future development.

Indication Overview

Similar to NMRA-140, we are evaluating NMRA-GRIN2B in subsets of patients with MDD.

Target Rationale

Ketamine, a non-selective NMDA antagonist, and its enantiomer (SPRAVATO from Johnson & Johnson) have demonstrated a rapid and durable effect in subpopulations of patients with depression; however, they produce psychiatric side effects. Other NMDA antagonists selective for the GRIN2B receptor have shown similar efficacy with less risk for psychiatric side effects. Preclinical data in rodents has suggested the efficacy of ketamine is through antagonism of GluN2B containing receptors. In model systems GRIN2B antagonism has been shown to increase specific signaling pathway activity on specific cell-types, which can rapidly reverse signaling depression-related deficits. Preliminary human data with a PET ligand which measures synapse density suggests depressed patients with fewer synapses may be more responsive to NMDA inhibition therapies.

Pharmacological Properties

We have identified a series of potent, selective, orally bioavailable and brain penetrant GRIN2B negative allosteric modulators which are at the lead optimization stage. The lead molecules have been through cell-based assays to confirm mechanism and selectivity.

Data Science Approach

We are in the process of generating Precision Phenotypes from multimodal MDD datasets that we plan to align with the pharmacological fingerprint of NMRA-GRIN2B compounds. To define the pharmacological fingerprint for the GRIN2A program, we are looking to generate data across the four modalities of genetics, imaging, EEG and clinical.

- Genetics: We have developed a proprietary TWAS-based genetic signature that may serve as a potential biomarker of treatment response to enable patient enrichment in our clinical studies.
- Imaging: We will leverage pharmaco-fMRI to determine if GRIN2B NAMs modify brain circuits underlying depression. It is also possible to use PET imaging to measure synaptic integrity to define patients with high, medium and low levels of synapses which could predict response to this mechanism.
- EEG: We believe GRIN2B NAMs can also be paired with EEG for patient stratification, which we will leverage in future studies. In preclinical studies, GRIN2B NAMs showed a unique EEG signature.
- Clinical: In future clinical trials, we will assess measures of efficacy that are associated with Precision Phenotypes for MDD.

Development Plan

Our NMRA-GRIN2B program is in the discovery stage.

NMRA-NRLP3

NMRA-NLRP3 is an inhibitor program focused on targeting the NLRP3 inflammasome for the treatment of certain neurodegenerative conditions. The NLRP3 inflammasome can be activated in brain microglia and other

cell types by a range of proteins linked to neurodegeneration, including alpha-synuclein, which suggests the inflammasome may have a mechanistic role in PD. We are in the process of generating Precision Phenotypes for PD from our integrated multimodal datasets, which we will then align with the pharmacological fingerprint for our NMRA-NLRP3 program to define a Precision Phenotype for future development.

Indication Overview

PD is a neurodegenerative disorder resulting in progressive and debilitating motor symptoms, such as hypokinesia, or decreased body movement, and bradykinesia, or rigidity, tremor, and postural instability. PD patients lose dopamine-producing neurons in the substantia nigra, the region of the brain responsible for motor control. Approximately one million people in the United States have PD.

Current therapeutics for PD focus on increasing levels of dopamine to manage disease symptoms. For example, levodopa/l-dopa is converted into dopamine in the brain while mono-amine oxidase-B and catechol-O-methyl transferase inhibitors reduce the breakdown of dopamine. Each therapeutic class has meaningful limitations in efficacy and side-effects.

Target Rationale

The NLRP3 inflammasome is a central component of the innate immune system and is chronically activated in neurodegenerative and inflammatory diseases. It is essential for triggering innate immunity and protecting the host from a variety of pathogens and cellular stressors. Pathological proteins associated with PD, ALS, and AD including alpha-synuclein, TDP-43, beta-amyloid and tau have also been shown to activate the NLRP3 inflammasome. For example, post-mortem analysis of human brains from PD patients showed elevated NLRP3 expression in dopamine producing neurons. Rare NLRP3 mutations can be protective in PD due to downregulation of NLRP3 protein expression. A growing body of work in PD model systems has shown that inhibition of the NLRP3 inflammasome can impact various disease phenotypes in a therapeutically relevant manner.

Pharmacological Properties

We have has identified multiple series of investigational NLRP3 inhibitors that showed potency and selectivity in preclinical studies. We have evaluated compounds in a range of cellular assays in different immortalized cell lines and primary immune cells.

Data Science Approach

We are in the process of generating Precision Phenotypes from multimodal PD datasets that we plan to align with the pharmacological fingerprint of NMRA-NLRP3 compounds. To define the pharmacological fingerprint for the NLRP3 program, we are looking to generate data across the two modalities of genetics and clinical.

- Genetics: We have onboarded the Parkinson’s Progression Markers Initiative (PPMI) dataset and have analyzed the genetic architecture of PD through multiple lenses, including TWAS, EQTL, differential expression, GWAS and co-localization. These genomics pipelines originally developed for the CK1d program over a course of months were redeployed and leveraged for the NLRP3 platform in a matter of weeks.
- Clinical: We are in the process of applying our proprietary AI/ML methods to identify Precision Phenotypes of PD patients based upon the clinical data and genetics from the PPMI dataset.

Development Plan

Our NMRA-NLRP3 program is in the discovery stage.

NMRA-GCase

NMRA-GCase is an activator program focused on elevating the activity of the enzyme GCase that we intend to develop for the treatment of PD. Mutations in the GBA gene, which codes for the enzyme GCase, the single largest genetic risk factor for PD. GCase deficiencies lead to lysosomal storage disorders, and a subgroup of patients with PD have lysosomal dysfunction. Leveraging the work from our NMRA-NLRP3 program, we are generating Precision Phenotypes for PD from our integrated multimodal datasets, which we will then align with the pharmacological fingerprint for our NMRA-GCase program to define a Precision Phenotype for future development.

Indication Overview

PD is a neurodegenerative disorder resulting in progressive and debilitating motor symptoms, such as hypokinesia, or decreased body movement, and bradykinesia, or rigidity, tremor, and postural instability. PD patients lose dopamine-producing neurons in the substantia nigra, the region of the brain responsible for motor control. Approximately one million people in the United States have PD.

Target Rationale

The GBA gene encodes the enzyme GCase, a lysosomal glycoside hydrolase. Homozygous or compound heterozygous mutation carriers in GBA present with Gaucher's disease, a lysosomal storage disorder. Mutations in the GBA gene are associated with PD (approximately 10% of PD patients). Functional GCase is crucial for the recycling and disposal of proteins and lipids in the lysosome. Numerous scientific studies have demonstrated that GCase mutations trigger lysosomal dysfunction, cell toxicity, inflammation and the accumulation of alpha-synuclein (a hallmark of PD), which is toxic to neurons.

Pharmacological Properties

We have identified and validated multiple chemical hits as GCase activators. We are characterizing these compounds to identify a lead series.

Data Science Approach

We are in the process of generating Precision Phenotypes from integrated multimodal PD datasets that we will plan to align with the pharmacological fingerprint of NMRA-GCase compounds. To define the pharmacological fingerprint for the GCase program, we are looking to generate data across the modalities of genetics, imaging, fluid biomarkers, including lysosomal metabolites, and clinical. This program will be able to leverage the genetic and clinical data sciences work from the NLRP3 program in PD.

Development Plan

Our NMRA-GCase program is in the discovery stage.

Intellectual Property

Our success depends in large part upon our ability to obtain and maintain proprietary protection for our products and technologies and to operate without infringing the proprietary rights of others. Our policy is to protect our proprietary position by, among other methods, filing U.S. and foreign patent applications that relate to our proprietary technologies, inventions and improvements that are important to the development and implementation of our business. We also rely on trademarks, trade secrets, know-how and continuing technological innovation.

Patent Portfolio

Our patent portfolio includes three primary types of patents and patent applications: (i) molecule patents that cover composition of matter and methods of treatment; (ii) patents directed to our precision neuroscience platform that cover key artificial intelligence algorithms and machine learning-based processes for discovering, diagnosing, and monitoring Precision Phenotypes from multimodal data; and (iii) biomarker patents that cover methods of diagnosing and treating distinct sets of patients, which we refer to as Precision Phenotypes, with our molecules. As of September 30, 2021, we own, co-own, or have an exclusive license to over 140 patents and pending applications in the United States and foreign jurisdictions. These include 14 issued U.S. patents and 19 issued foreign patents.

The term of any individual issued patent depends upon the legal term of the patent in the country in which it is obtained. In most countries that we file, the patent term is 20 years from the earliest date of filing a nonprovisional patent application related to the issued patent. However, the actual protection afforded by an issued patent varies on a product-by-product basis, from country to country, and depends upon many factors, including the type of patent, the scope of its coverage, the availability of regulatory-related extensions, the availability of legal remedies in a particular country, and the validity and enforceability of the patent. A U.S. patent also may be accorded patent term adjustment, or PTA, under certain circumstances to compensate for delays in obtaining the patent from the USPTO. In some instances, such a PTA may result in a U.S. patent term extending beyond 20 years from the earliest date of filing a non-provisional patent application related to the U.S. patent. In addition, in the United States, the term of a U.S. patent that covers an FDA-approved drug may also be eligible for patent term extension, which permits patent term restoration as compensation for the patent term lost during the FDA regulatory review process.

Molecule Patent Portfolio

Our molecule patents include 49 owned and exclusively licensed patents and patent applications, of which include six issued U.S. patents and 16 issued foreign patents. A further breakdown of our molecule patents and applications as of September 30, 2021 is below:

- **NMRA-140:** We own, co-own or exclusively license two patent families that include four issued U.S. patents, 16 issued foreign patents and additional pending U.S. and foreign patent applications related to NMRA-140. We co-own one of the patent families with TSRI, and TSRI owns and has granted us an exclusive license to the other patent family. All of these patents and applications cover composition of matter. The issued U.S. and foreign patents and future patents that issue from these families are expected to expire between 2033 and 2038, excluding any patent term adjustment or patent term extension.
- **NMRA-511:** We own one issued U.S. patent and 16 additional pending U.S. and foreign patent applications related to NMRA-511. These patents and applications cover composition of matter. The issued U.S. patent and future patents that issue are expected to expire in 2038, excluding any patent term adjustment or patent term extension.
- **NMRA-094:** We own one issued U.S. patent and two additional pending US and foreign patent applications related to NMRA-094. This patent and these applications cover composition of matter. The issued U.S. patent and future patents that issue are expected to expire in 2040, excluding any patent term adjustment or patent term extension.

Precision Neuroscience Platform Patent Portfolio

Our precision neuroscience platform is covered by process patents and patent applications relating to multimodal methods of identifying and monitoring subpopulations of patients, that we call Precision Phenotypes, that we believe will be higher responders to a specific therapeutic than populations comprised of traditional diagnostic groups. The process patents and patent applications are directed to (i) the use of tools to detect and

capture data from patients using specific modalities, unimodal processing and/or diagnostic techniques for specific modality types; and (ii) multimodal machine learning and AI based processes for combining different types of data to identify and monitor patient subpopulations. Our precision neuroscience patent portfolio includes several patent families, comprising eight issued U.S. patents, three issued foreign patents and additional pending U.S. and foreign patent applications. The issued U.S. and foreign patent and future patents that issue from these families are expected to expire between 2038 and 2041, excluding any patent term adjustment.

The precision neuroscience platform patent portfolio also includes the following components:

- Multimodal Processes: The platform patents include coverage for multimodal processes that span various modalities including genetic, transcriptomic, proteomic, *in vitro* cell, MRI, EEG, voice, facial, behavioral, clinical and others.
- Syllable Portfolio: The platform patents also include several active patent families from our acquisition of Syllable, covering methods of automatically identifying animal behaviors using three-dimensional video data.

Biomarker Patent Portfolio

Our Precision Phenotypes are covered by biomarker patents and applications directed to unimodal and multimodal biomarkers that identify patients that respond to specific drugs. The biomarker patents are process patents for identifying and diagnosing patients with selected biomarkers, and methods of treating patients with those biomarkers with neural drugs. Generally speaking, those selected biomarkers include genetic, proteomic, task based, clinical assessment based, and others.

Trade Secrets

In addition to our reliance on patent protection for our inventions, product candidates and platforms, we also rely on trade secrets, know-how, confidentiality agreements and continuing technological innovation to develop and maintain our competitive position. For example, some elements of manufacturing processes, proprietary assays, analytics techniques and processes, knowledge gained through clinical experience such as approaches to dosing and administration and management of patients, as well as our platform algorithms, and related processes and software, are based on unpatented trade secrets and know-how that are not publicly disclosed. It is our policy to require our employees, consultants, outside scientific collaborators, sponsored researchers and other advisors to execute confidentiality agreements upon the commencement of employment or consulting relationships with us. These agreements provide that all confidential information concerning our business or financial affairs developed or made known to the individual or entity during the course of the party's relationship with us is to be kept confidential and not disclosed to third parties except in specific circumstances. In the case of employees, the agreements provide that all inventions conceived of by the individual during the course of employment, and which relate to or are reasonably capable of being used in our current or planned business or research and development are our exclusive property. In addition, we take other appropriate precautions, such as physical and technological security measures, to guard against misappropriation of our proprietary technologies by third parties.

Trademarks

We also protect our brands through the procurement of trademark rights and have a portfolio of registered and pending trademark applications in the United States and abroad. As of September 30, 2021, the portfolio includes trademark applications for the marks NEUMORA, DIGITAL BIOPSY, and PRECISION PHENOTYPE that have been published by the U.S. patent and trademark office.

In-Licensing and Collaboration Agreements

*The Exclusive License Agreements with Amgen for CK1*d *and GCase*

In September 2021, we entered into two exclusive license agreements with Amgen (the Amgen Licenses) with one of the agreements covering development of products directed to casein kinase 1 delta (the CK1d License) and the other covering development of products directed to ß-Glucocerebrosidase (the GCase License).

Under each Amgen License, Amgen granted to us a worldwide, exclusive, sublicensable license under certain of its patents and know-how to research, develop, manufacture, use and commercialize specified products containing compounds that, with respect to the CK1d License, are directed to CK1d, including compounds developed by us prior to the effective date of the CK1d License, and with respect to the GCase License, are directed to GCase, collectively referred to as the licensed products, for any and all uses. The license grants are subject to Amgen's right to use the licensed patents and know-how solely for internal research use. Until a specified period of time following the achievement of the first successful Phase 2 clinical trial for any licensed product, if we choose to sell, transfer, sublicense or divest rights to a licensed product in certain major markets, Amgen has a time-limited, exclusive right of first negotiation to enter into an agreement with us for such rights. Amgen also agreed to transfer to us certain licensed materials and licensed know-how relating to the licensed products.

Under each Amgen License, we are solely responsible for the research, development, manufacturing and commercialization of the licensed products. We are obligated to use commercially reasonable efforts to develop, manufacture, obtain regulatory approval, and commercialize at least one licensed product under each Amgen License. Under each Amgen License, we also agreed, until a specified period of time following first commercial sale of the first licensed product in the United States, not to clinically develop, commercialize, or manufacture any compounds or products, other than the licensed products, that are directed to CK1d or GCase, unless we treat them as licensed products that are subject to diligence, milestone and royalty obligations under the Amgen Licenses. If we choose not to treat such compounds or products obtained through a transaction with a third party as a licensed product, then we are obligated to divest or terminate the program for such compounds or products.

Under the Amgen Licenses, we agreed to pay Amgen up to an aggregate of $360.0 million in commercial milestone payments upon the achievement of certain sales thresholds per licensed product under the CK1d License and up to an aggregate $360.0 million in commercial milestone payments upon the achievement of certain sales thresholds per licensed product under the GCase License. We also agreed to pay tiered royalties at percentages ranging from the low to high-single-digits on annual worldwide net sales of licensed products under the CK1d License, and royalties at a low-single-digit percentage on annual worldwide net sales of licensed products under the GCase License, payable on a licensed product-by-licensed product and country-by-country basis until the later of the expiration of the last to expire licensed patent or Neumora patent claiming the composition of matter of such licensed product and the tenth anniversary of the first commercial sale of such licensed product in such country. Under each Amgen License, the royalty payments are subject to reductions on a country-by-country basis for lack of patent coverage, generic entry and payment obligations for third-party licenses. Additionally, under each of the Amgen Licenses, if we enter into a sublicense agreement prior to the second anniversary of the effective date of the Amgen Licenses, then we are also obligated to pay Amgen a low-double-digit percentage of sublicense income we receive for the CK1d and/or GCase programs.

Each of the Amgen Licenses continues in force until the expiration of all royalty payment obligations to Amgen. We may terminate either Amgen License at-will with 30 days' prior written notice to Amgen at any time prior to the initiation of clinical development for any licensed product or 120 days' prior written notice to Amgen at any time thereafter. Either party may terminate either Amgen License upon written notice for the other party's material breach that remains uncured for ninety days or upon the other party's bankruptcy or insolvency. Amgen may also terminate either Amgen License upon written notice if we breach our obligations to not clinically develop, commercialize or manufacture compounds or products directed to CK1d or GCase, other than licensed products, unless we treat them as licensed products or divest or terminate the program(s) for such compounds or products.

Upon termination of either of the Amgen Licenses, all rights and licenses granted by Amgen to us under that license will terminate, except that, under the CK1d License, we will retain rights to the compounds directed to CK1d that were developed by us prior to the effective date of the CK1d License. In addition, with respect to all other licensed products, at Amgen's election and in return for tiered royalties at percentages ranging from the low to mid-single-digits on annual worldwide net sales under the CK1d License, and royalties at a low-single-digit percentage on annual worldwide net sales under the GCase License, we will grant to Amgen an automatic, worldwide, perpetual, sublicensable, irrevocable and exclusive license to exploit such licensed products, under all patent rights and know-how controlled by us that cover such licensed products and are necessary to exploit any such licensed product as it exists as of the termination date.

Research Collaboration Agreement with Amgen

In September 2021, we entered into a research collaboration and license agreement with Amgen (the Amgen Collaboration Agreement) to discover drug targets, biomarkers, Precision Phenotypes and other insights associated with CNS diseases that are generated by Amgen's deCODE genetics and human data research capabilities. The term of the Amgen Collaboration Agreement is five years. Over the first three years of the Amgen Collaboration Agreement, we will pay Amgen $62.5 million, or $75.0 million if at least one progress milestone is achieved before the end of the first two years of the Amgen Collaboration Agreement. We will mutually agree on the compensation structure for the fourth and fifth years of the Amgen Collaboration Agreement.

The collaboration is governed by a joint research committee comprised of an equal number of representatives from us and from Amgen. Amgen has granted to us an exclusive, worldwide, sublicensable, fully paid-up, royalty-free license under Amgen's rights in and to the patents and know-how generated in the performance of the collaboration activities that are controlled by Amgen, to exploit therapeutic compounds and diagnostics for use with therapeutics to treat, ameliorate or prevent diseases with effects that manifest primarily in the CNS (the CNS Field). We have granted to Amgen an exclusive, worldwide, sublicensable, fully paid-up, royalty-free license under our rights in and to the patents and know-how generated in the performance of the collaboration activities that are controlled by us, to exploit therapeutic compounds and diagnostics for use with therapeutics outside of the CNS Field.

We also granted to Amgen an exclusive option to negotiate, and the right of first negotiation, to obtain exclusive, worldwide licenses to research, develop, commercialize and otherwise exploit up to two therapeutic products arising from the collaboration, which is exercisable on a product-by-product basis until a specified period of time following the achievement of the first successful Phase 2 clinical trial for such product.

Either party may terminate the Amgen Collaboration Agreement upon material breach of the other party that is not cured within 90 days after written notice is given or for the other party's insolvency or bankruptcy. In addition, the Amgen Collaboration Agreement terminates automatically on the third anniversary of the effective date if the parties are unable to agree on the compensation structure for the fourth and fifth years of the agreement.

As part of the agreements, we issued to Amgen 157.0 million shares of our Series A-2 Preferred Stock. Additionally, Amgen purchased 100.0 million shares of our Series A-2 Preferred Stock at a purchase price of $1.00 per share, for total consideration of $100.0 million. Subject to certain conditions, Amgen is also obligated to provide us additional financing of up to $100.0 million.

2015 TSRI License Agreement

In connection with the acquisition of BlackThorn in September 2020, we gained rights to a license agreement between BlackThorn and TSRI entered into in November 2015, as amended in November 2017 and April 2019 (2015 TSRI License Agreement). Pursuant to the 2015 TSRI License Agreement, TSRI granted us a

worldwide, exclusive license under certain patent rights and a worldwide, non-exclusive license under certain know-how relating to TSRI's Kappa Opioid Receptor (KOR or NMRA-140), V1aR Receptor (V1aR or NMRA-511) Antagonist and oxytocin receptors (OTR) positive allosteric modulator programs (collectively, the TSRI Programs), in each case that is sublicensable under certain conditions, to use, manufacture and commercialize products (i) that are covered by the relevant licensed patents, (ii) that involve the use or incorporation of the licensed know-how or (iii) that are KOR, V1aR or OTR modulators discovered by BlackThorn within two years of the effective date of the 2015 TSRI License Agreement for the diagnostic, prophylactic and/or therapeutic treatment of humans and animals. The licensed patent rights are subject to TSRI's right to use the licensed patents for internal research and educational purposes and to grant non-exclusive licenses to other non-profit or academic institutions to use the licensed patent rights for internal research and educational purposes.

We are subject to certain research and development milestone timeline obligations and have agreed to use commercially reasonable efforts to obtain regulatory approvals and to commercialize the licensed products.

Under the 2015 TSRI License Agreement, BlackThorn issued TSRI shares of its capital stock representing one percent of all outstanding shares of its capital stock calculated on a fully-diluted basis. We paid a change of control success fee to TSRI in shares of our Series A-1 convertible preferred stock with a fair value of $0.3 million.

We are obligated to pay TSRI a specified nominal annual license fee that is creditable against any royalties due for that calendar year. Upon achieving specified development and regulatory milestone events, we are obligated to pay TSRI milestone payments in the aggregate of up to $1.5 million for each TSRI Program and upon achieving specified commercial milestone events, we are obligated to pay TSRI milestone payments in the aggregate of up to $3.5 million for each occurrence. We are also obligated to pay TSRI a percentage ranging from the mid-single digits to sub-teen double digits of any sublicensing revenues we receive from a sublicensee. We also agreed to pay TSRI, on a product-by-product and country-by-country basis, royalties in the low-single digit percentages on worldwide net sales of products, which are either tiered or not tiered depending on the category of product, until the later of the expiration of the last to expire licensed patent in the world and the tenth anniversary of the first commercial sale of such licensed product in such country, subject to certain reductions for generic entry, lack of patent coverage and payment obligations for third-party licenses.

The 2015 TSRI License Agreement continues in force until the expiration of all royalty payment obligations to TSRI. We may terminate the 2015 TSRI License Agreement for any reason upon 90 days' prior written notice to TSRI. TSRI may immediately terminate the 2015 TSRI License Agreement if we fail to make a payment and do not cure within 20 days after written notice from TSRI, default on our indemnification or insurance obligations, become insolvent or bankrupt, are convicted of a felony relating to the development, manufacture, or commercialization of the licensed products, underpay by a certain percentage within any specified period of time, or default in the performance of any of our other obligations and fail to remedy the default within 60 days after written notice from TSRI. In the event we do not use commercially reasonable efforts to achieve the research and development milestones within the agreed upon time period and do not either meet the milestone or make substantial progress towards achieving the goals of the applicable research and development plan for such Program, in each case, within a specified cure period, TSRI has the right, based on the decision of an arbitrator, to either terminate the 2015 TSRI License Agreement with respect to a particular Program or terminate the 2015 License Agreement in its entirety. Upon any termination, all rights and licenses granted by TSRI to us will terminate. We also agreed to grant to TSRI, in return for royalties at a low-single-digit percentage of TSRI's net sales of licensed products, an irrevocable, exclusive, worldwide, perpetual, sublicensable license to data, information, or other materials exclusively controlled by us that directly relate to the licensed products, to research, develop, manufacture and commercialize the licensed products for the diagnostic, prophylactic and/or therapeutic treatment of humans and animals.

Harvard License Agreement

In connection with the acquisition of Syllable, we gained rights to a license agreement between Syllable and President and Fellows of Harvard College (Harvard), entered into in June 2020 (as amended in March 2021, the Harvard License Agreement). Pursuant to the Harvard License Agreement, Syllable was granted an exclusive, worldwide, royalty-bearing, sublicensable license under certain patent rights and copyrights covering behavior imaging and behavioral tracking software, to develop, manufacture and commercialize products and services covered by such patent rights or that incorporate or use such software, in the field of methods, equipment, systems and services included within such patent rights. The licensed patent rights are subject to Harvard's and other non-profit organizations' right to use the patent rights and software for research, educational and scholarly purposes and to one for-profit third party's right to use certain existing patent rights and software for internal research and development purposes, which was secured under a previously existing agreement.

We have agreed to use commercially reasonable efforts to develop licensed products in accordance with a development plan and to commercialize licensed products. Additionally, we have obligations to achieve certain development and commercial milestones within specified time periods between December 2021 and January 2024. Failure to meet such milestones constitutes a material breach of contract that entitles Harvard to terminate the Harvard License Agreement.

Under the Harvard License Agreement, Syllable paid a nominal upfront licensing fee and issued shares of its common stock representing five percent of its capital stock on a fully diluted basis. Syllable was also required to pay Harvard a change of control payment, which we agreed to pay on Syllable's behalf as part of the acquisition and which was part of the net liabilities we assumed in the transaction. We are obligated to pay Harvard specified nominal annual license maintenance fees that are creditable against any royalty amounts payable for licensed products sold in the same year. We agreed to pay Harvard royalties in the mid-single digits on net sales, which are payable on a country-by-country and product-by-product basis until the later of (i) the expiration of the last to expire valid claim in the licensed patents that cover such product and (ii) the fifteenth anniversary of the first commercial sale of such product in such country. In addition, we are obligated to pay Harvard a percentage of sublicense income we receive, ranging from the high-teens to low-double-digits, based on the effective date of the sublicense agreement.

The Harvard License Agreement will remain in force until the later of the (i) expiration of the last to expire valid claim in the licensed patents and (ii) the fifteenth anniversary of the first commercial sale of the last licensed product offered for sale. We may terminate the Harvard License Agreement for convenience upon 120 days' prior written notice to Harvard. Harvard may terminate the Harvard License Agreement upon notice if we become insolvent or bankrupt, or without notice, if we fail to meet development milestones or default in our obligations relating to procuring and maintaining insurance. Either party may terminate the Harvard License Agreement upon material breach of the other party that is not cured within 30 days after receiving written notice of breach.

Government Regulation

Government authorities in the United States, at the federal, state and local level, and other countries extensively regulate, among other things, the research, development, testing, manufacture, quality control, approval, labeling, packaging, storage, record-keeping, promotion, advertising, distribution, marketing and export and import of drug products. A new drug must be approved by the FDA through the New Drug Application (NDA) process before it may be legally marketed in the United States. We, along with any third-party contractors, will be required to navigate the various preclinical, clinical and commercial approval requirements of the governing regulatory agencies of the countries in which we wish to conduct studies or seek approval of our products and product candidates. The process of obtaining regulatory approvals and the subsequent compliance with applicable federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources.

U.S. Drug Development Process

In the United States, the FDA regulates drugs under the federal Food, Drug, and Cosmetic Act (FDCA) and its implementing regulations. The process of obtaining regulatory approvals and the subsequent compliance with appropriate federal, state, local and foreign statutes and regulations require the expenditure of substantial time and financial resources. The process required by the FDA before a drug may be marketed in the United States generally involves the following:

- completion of preclinical laboratory tests, animal studies and formulation studies in accordance with FDA's Good Laboratory Practice (GLP) requirements and other applicable regulations;
- submission to the FDA of an IND, which must become effective before human clinical trials may begin;
- approval by an independent Institutional Review Board (IRB) or ethics committee at each clinical site before each trial may be initiated;
- performance of adequate and well-controlled human clinical trials in accordance with good clinical practices (GCPs) to establish the safety and efficacy of the proposed drug for its intended use;
- preparation of and submission to the FDA of an NDA after completion of all pivotal trials;
- a determination by the FDA within 60 days of its receipt of an NDA to file the application for review
- satisfactory completion of an FDA advisory committee review, if applicable;
- satisfactory completion of an FDA inspection of the manufacturing facility or facilities at which the drug is produced to assess compliance with current Good Manufacturing Practice (cGMP) requirements to assure that the facilities, methods and controls are adequate to preserve the drug's identity, strength, quality and purity, and of selected clinical investigation sites to assess compliance with GCPs; and
- FDA review and approval of the NDA to permit commercial marketing of the product for particular indications for use in the United States.

The preclinical developmental stage generally involves laboratory evaluations of chemistry, formulation and stability, as well as studies to evaluate the product candidate's toxicity in animals, in an effort to support subsequent clinical testing. The conduct of preclinical studies is subject to federal regulations and requirements, including GLP regulations.

Prior to beginning the first clinical trial with a product candidate in the United States, the trial sponsor must submit an IND to the FDA. An IND is a request for authorization from the FDA to administer an investigational biologic to humans. The central focus of an IND submission is on the general investigational plan and the protocol(s) for clinical studies. The IND also includes results of animal and *in vitro* studies assessing the toxicology, pharmacokinetics, pharmacology and pharmacodynamic characteristics of the product candidate, chemistry, manufacturing and controls information, and any available human data or literature to support the use of the product candidate. An IND must become effective before human clinical trials may begin. The IND automatically becomes effective 30 days after receipt by the FDA, unless the FDA, within the 30-day time period, raises safety concerns or questions about the proposed clinical trial. In such a case, the IND may be placed on clinical hold and the IND sponsor and the FDA must resolve any outstanding concerns or questions before the clinical trial can begin. Submission of an IND therefore may or may not result in FDA authorization to begin a clinical trial.

Clinical trials involve the administration of the investigational product to human subjects under the supervision of qualified investigators, generally physicians not employed by or under the trial sponsor's control, in accordance with GCPs, which include the requirement that all research subjects provide their informed consent for their participation in any clinical study. Clinical trials are conducted under protocols detailing, among other

things, the objectives of the study, the parameters to be used in monitoring subject safety and the effectiveness criteria to be evaluated. A separate submission to the existing IND must be made for each successive clinical trial conducted during product development and for any subsequent protocol amendments. Furthermore, an independent IRB for each site proposing to conduct the clinical trial must review and approve the plan for any clinical trial and its informed consent form before the clinical trial begins at that site, and must monitor the study until completed. Regulatory authorities, the IRB or the sponsor may suspend a clinical trial at any time on various grounds, including a finding that the subjects are being exposed to an unacceptable health risk or that the trial is unlikely to meet its stated objectives. Some studies also include oversight by an independent group of qualified experts organized by the clinical study sponsor, known as a data safety monitoring board, which provides authorization for whether or not a study may move forward at designated check points based on access to certain data from the study, and may halt the clinical trial if it determines that there is an unacceptable safety risk for subjects or other grounds, such as no demonstration of efficacy. There are also requirements governing the reporting of ongoing clinical studies and clinical study results to public registries, including clinicaltrials.gov.

Human clinical trials are typically conducted in three sequential phases that may overlap or be combined:

- Phase 1: The product candidate is initially introduced into healthy human subjects or patients with the target disease or condition. These studies are designed to test the safety, dosage tolerance, absorption, metabolism and distribution of the investigational product in humans, the side effects associated with increasing doses, and, if possible, to gain early evidence on effectiveness.
- Phase 2: The product candidate is administered to a limited patient population with a specified disease or condition to evaluate the preliminary efficacy, optimal dosages and dosing schedule and to identify possible adverse side effects and safety risks. Multiple Phase 2 clinical trials may be conducted to obtain information prior to beginning larger and more expensive Phase 3 clinical trials.
- Phase 3: The product candidate is administered to an expanded patient population to further evaluate dosage, to provide statistically significant evidence of clinical efficacy and to further test for safety, generally at multiple geographically dispersed clinical trial sites. These clinical trials are intended to establish the overall risk/benefit ratio of the investigational product and to provide an adequate basis for product approval.

In some cases, the FDA may require, or sponsors may voluntarily pursue, additional clinical trials after a product is approved to gain more information about the product. These so-called Phase 4 studies, may be conducted after initial marketing approval, and may be used to gain additional experience from the treatment of patients in the intended therapeutic indication. In certain instances, the FDA may mandate the performance of Phase 4 clinical trials as a condition of approval of an NDA.

Concurrent with clinical trials, companies usually complete additional animal studies and must also develop additional information about the chemistry and physical characteristics of the drug and finalize a process for manufacturing the product in commercial quantities in accordance with cGMP requirements. The manufacturing process must be capable of consistently producing quality batches of the product candidate and, among other things, the manufacturer must develop methods for testing the identity, strength, quality and purity of the final drug. In addition, appropriate packaging must be selected and tested, and stability studies must be conducted to demonstrate that the product candidate does not undergo unacceptable deterioration over its shelf life.

While the IND is active and before approval, progress reports summarizing the results of the clinical trials and nonclinical studies performed since the last progress report must be submitted at least annually to the FDA, and written IND safety reports must be submitted to the FDA and investigators for serious and unexpected suspected adverse events, findings from other studies suggesting a significant risk to humans exposed to the same or similar drugs, findings from animal or *in vitro* testing suggesting a significant risk to humans, and any clinically important increased incidence of a serious suspected adverse reaction compared to that listed in the protocol or investigator brochure.

In addition, during the development of a new drug, sponsors are given opportunities to meet with the FDA at certain points. These points may be prior to submission of an IND, at the end of Phase 2, and before an NDA is submitted. Meetings at other times may be requested. These meetings can provide an opportunity for the sponsor to share information about the data gathered to date, for the FDA to provide advice, and for the sponsor and the FDA to reach agreement on the next phase of development. Sponsors typically use the meetings at the end of the Phase 2 trial to discuss Phase 2 clinical results and present plans for the pivotal Phase 3 clinical trials that they believe will support approval of the new drug.

U.S. Review and Approval Process

Assuming successful completion of all required testing in accordance with all applicable regulatory requirements, the results of product development, preclinical and other non-clinical studies and clinical trials, along with descriptions of the manufacturing process, analytical tests conducted on the chemistry of the drug, proposed labeling and other relevant information are submitted to the FDA as part of an NDA requesting approval to market the product. Data can come from company-sponsored clinical studies intended to test the safety and effectiveness of a use of the product, or from a number of alternative sources, including studies initiated by independent investigators. The submission of an NDA is subject to the payment of substantial user fees, unless a waiver or exemption applies.

The FDA conducts a preliminary review of all NDAs within the first 60 days after submission, before accepting them for filing, to determine whether they are sufficiently complete to permit substantive review The FDA may request additional information rather than accept an NDA for filing. In this event, the NDA must be resubmitted with the additional information. The resubmitted application also is subject to review before the FDA accepts it for filing. Once filed, the FDA has a goal of ten months from the filing date to complete a standard review of an NDA for a drug that is a new molecular entity. This review typically takes twelve months from the date the NDA is submitted to FDA because the FDA has approximately two months to make a “filing” decision after it the application is submitted. The FDA reviews an NDA to determine, among other things, whether a product is safe and effective for its intended use and whether its manufacturing is sufficient to assure and preserve the product’s identity, strength, quality and purity.

The FDA may refer an application for a novel drug to an advisory committee. An advisory committee is a panel of independent experts, including clinicians and other scientific experts, that reviews, evaluates and provides a recommendation as to whether the application should be approved and under what conditions. The FDA is not bound by the recommendations of an advisory committee, but it considers such recommendations carefully when making decisions.

Before approving an NDA, the FDA will typically inspect the facility or facilities where the product is manufactured. The FDA will not approve an application unless it determines that the manufacturing processes and facilities are in compliance with cGMP and adequate to assure consistent production of the product within required specifications. Additionally, before approving a NDA, the FDA will typically inspect one or more clinical sites to assure compliance with GCPs. If the FDA determines that the application, manufacturing process or manufacturing facilities are not acceptable, it will outline the deficiencies in the submission and often will request additional testing or information. Notwithstanding the submission of any requested additional information, the FDA ultimately may decide that the application does not satisfy the regulatory criteria for approval.

After the FDA evaluates an NDA and conducts inspections of manufacturing facilities where the investigational product and/or its drug substance will be produced, the FDA may issue an approval letter or a Complete Response Letter (CRL). An approval letter authorizes commercial marketing of the product with specific prescribing information for specific indications. A CRL will describe all of the deficiencies that the FDA has identified in the NDA, except that where the FDA determines that the data supporting the application are inadequate to support approval, the FDA may issue the CRL without first conducting required inspections and/or

reviewing proposed labeling. In issuing the CRL, the FDA may recommend actions that the applicant might take to place the NDA in condition for approval, including requests for additional information or clarification. The FDA may delay or refuse approval of an NDA if applicable regulatory criteria are not satisfied, require additional testing or information and/or require post-marketing testing and surveillance to monitor safety or efficacy of a product.

If regulatory approval of a product is granted, such approval will be granted for particular indications and may entail limitations on the indicated uses for which such product may be marketed. For example, the FDA may approve the NDA with a Risk Evaluation and Mitigation Strategy (REMS) to ensure the benefits of the product outweigh its risks. A REMS is a safety strategy to manage a known or potential serious risk associated with a medicine and to enable patients to have continued access to such medicines by managing their safe use, and could include medication guides, physician communication plans, or elements to assure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. The FDA also may condition approval on, among other things, changes to proposed labeling or the development of adequate controls and specifications. The FDA may also require one or more Phase 4 post- market studies and surveillance to further assess and monitor the product's safety and effectiveness after commercialization, and may limit further marketing of the product based on the results of these post-marketing studies.

In addition, the Pediatric Research Equity Act (PREA) requires a sponsor to conduct pediatric clinical trials for most drugs, for a new active ingredient, new indication, new dosage form, new dosing regimen or new route of administration. Under PREA, NDAs and supplements must contain a pediatric assessment unless the sponsor has received a deferral or waiver. The required assessment must evaluate the safety and effectiveness of the product for the claimed indications in all relevant pediatric subpopulations and support dosing and administration for each pediatric subpopulation for which the product is safe and effective. The sponsor or FDA may request a deferral of pediatric clinical trials for some or all of the pediatric subpopulations. A deferral may be granted for several reasons, including a finding that the drug is ready for approval for use in adults before pediatric clinical trials are complete or that additional safety or effectiveness data needs to be collected before the pediatric clinical trials begin. The FDA must send a non-compliance letter to any sponsor that fails to submit the required assessment, keep a deferral current or fails to submit a request for approval of a pediatric formulation.

Expedited Development and Review Programs

The FDA offers a number of expedited development and review programs for qualifying product candidates. For example, the Fast Track program is intended to expedite or facilitate the process for reviewing new product candidates that are intended to treat a serious or life-threatening disease or condition and demonstrate the potential to address unmet medical needs for the disease or condition. Fast Track designation applies to the combination of the product and the specific indication for which it is being studied. The sponsor of a Fast Track product candidate has opportunities for more frequent interactions with the applicable FDA review team during development and, once an NDA is submitted, the product candidate may be eligible for priority review. A Fast Track product candidate may also be eligible for rolling review, where the FDA may consider for review sections of the NDA on a rolling basis before the complete application is submitted, if the sponsor provides a schedule for the submission of the sections of the NDA, the FDA agrees to accept sections of the NDA and determines that the schedule is acceptable, and the sponsor pays any required user fees upon submission of the first section of the NDA.

A product candidate intended to treat a serious or life-threatening disease or condition may also be eligible for Breakthrough Therapy designation to expedite its development and review. A product candidate can receive Breakthrough Therapy designation if preliminary clinical evidence indicates that the product candidate, alone or in combination with one or more other drugs or biologics, may demonstrate substantial improvement over existing therapies on one or more clinically significant endpoints, such as substantial treatment effects observed early in clinical development. The designation includes all of the Fast Track program features, as well as more intensive FDA interaction and guidance beginning as early as Phase 1 and an organizational commitment to expedite the development and review of the product candidate, including involvement of senior managers.

Any marketing application for a drug submitted to the FDA for approval, including a product candidate with a Fast Track designation and/or Breakthrough Therapy designation, may be eligible for other types of FDA programs intended to expedite the FDA review and approval process, such as priority review and accelerated approval. A product candidate is eligible for priority review if it is designed to treat a serious or life-threatening disease or condition, and if approved, would provide a significant improvement in safety or effectiveness compared to available alternatives for such disease or condition. For new-molecular-entity NDAs, priority review designation means the FDA's goal is to take action on the marketing application within six months of the 60-day filing date.

Additionally, product candidates studied for their safety and effectiveness in treating serious or life-threatening diseases or conditions may receive accelerated approval upon a determination that the product has an effect on a surrogate endpoint that is reasonably likely to predict clinical benefit, or on a clinical endpoint that can be measured earlier than irreversible morbidity or mortality, that is reasonably likely to predict an effect on irreversible morbidity or mortality or other clinical benefit, taking into account the severity, rarity, or prevalence of the condition and the availability or lack of alternative treatments. As a condition of accelerated approval, the FDA will generally require the sponsor to perform adequate and well-controlled post-marketing clinical studies to verify and describe the anticipated effect on irreversible morbidity or mortality or other clinical benefit. Products receiving accelerated approval may be subject to expedited withdrawal procedures if the sponsor fails to conduct the required post-marketing studies in a timely manner or if such studies fail to verify the predicted clinical benefit. In addition, the FDA currently requires as a condition for accelerated approval pre-approval of promotional materials, which could adversely impact the timing of the commercial launch of the product.

Fast Track designation, Breakthrough Therapy designation, priority review, and accelerated approval do not change the standards for approval, but may expedite the development or approval process. Even if a product candidate qualifies for one or more of these programs, the FDA may later decide that the product no longer meets the conditions for qualification or decide that the time period for FDA review or approval will not be shortened.

Orphan Drug Designation and Exclusivity

Under the Orphan Drug Act, the FDA may grant orphan designation to a drug intended to treat a rare disease or condition, defined as a disease or condition with a patient population of fewer than 200,000 individuals in the United States, or a patient population greater than 200,000 individuals in the United States and when there is no reasonable expectation that the cost of developing and making available the drug in the United States will be recovered from sales in the United States for that drug. Orphan drug designation must be requested before submitting an NDA. After the FDA grants orphan drug designation, the generic identity of the therapeutic agent and its potential orphan use are disclosed publicly by the FDA.

If a product that has orphan drug designation subsequently receives the first FDA approval for a particular active ingredient for the disease for which it has such designation, the product is entitled to orphan product exclusivity, which means that the FDA may not approve any other applications, including a full NDA, to market the same drug for the same indication for seven years, except in limited circumstances, such as a showing of clinical superiority to the product with orphan drug exclusivity or if the FDA finds that the holder of the orphan drug exclusivity has not shown that it can assure the availability of sufficient quantities of the orphan drug to meet the needs of patients with the disease or condition for which the drug was designated. Orphan drug exclusivity does not prevent the FDA from approving a different drug for the same disease or condition, or the same drug for a different disease or condition. Among the other benefits of orphan drug designation are tax credits for certain research and a waiver of the NDA application user fee.

A designated orphan drug may not receive orphan drug exclusivity if it is approved for a use that is broader than the indication for which it received orphan designation. In addition, orphan drug exclusive marketing rights in the United States may be lost if the FDA later determines that the request for designation was materially defective or, as noted above, if a second applicant demonstrates that its product is clinically superior to the

approved product with orphan exclusivity or the manufacturer of the approved product is unable to assure sufficient quantities of the product to meet the needs of patients with the rare disease or condition.

Post-approval Requirements

Drug products manufactured or distributed pursuant to FDA approvals are subject to pervasive and continuing regulation by the FDA, including, among other things, requirements relating to record-keeping, reporting of adverse experiences, periodic reporting, product sampling and distribution, and advertising and promotion of the product. After approval, most changes to the approved product, such as adding new indications or other labeling claims, are subject to prior FDA review and approval. There also are continuing, annual program fees for any marketed products. Drug manufacturers and their subcontractors are required to register their establishments with the FDA and certain state agencies, and are subject to periodic unannounced inspections by the FDA and certain state agencies for compliance with cGMP, which impose certain procedural and documentation requirements upon us and our third-party manufacturers. Changes to the manufacturing process are strictly regulated, and, depending on the significance of the change, may require prior FDA approval before being implemented. FDA regulations also require investigation and correction of any deviations from cGMP and impose reporting requirements. Accordingly, manufacturers must continue to expend time, money and effort in the area of production and quality control to maintain compliance with cGMP and other aspects of regulatory compliance.

The FDA may withdraw approval if compliance with regulatory requirements and standards is not maintained or if problems occur after the product reaches the market. Later discovery of previously unknown problems with a product, including adverse events of unanticipated severity or frequency, or with manufacturing processes, or failure to comply with regulatory requirements, may result in revisions to the approved labeling to add new safety information; imposition of post-market studies or clinical studies to assess new safety risks; or imposition of distribution restrictions or other restrictions under a REMS program. Other potential consequences include, among other things:

- restrictions on the marketing or manufacturing of the product, complete withdrawal of the product from the market or product recalls;
- fines, warning letters, or untitled letters;
- clinical holds on clinical studies;
- refusal of the FDA to approve pending applications or supplements to approved applications, or suspension or revocation of product approvals;
- product seizure or detention, or refusal to permit the import or export of products;
- consent decrees, corporate integrity agreements, debarment or exclusion from federal healthcare programs;
- mandated modification of promotional materials and labeling and the issuance of corrective information;
- the issuance of safety alerts, Dear Healthcare Provider letters, press releases and other communications containing warnings or other safety information about the product; or
- injunctions or the imposition of civil or criminal penalties.

The FDA closely regulates the marketing, labeling, advertising and promotion of drug products. A company can make only those claims relating to safety and efficacy, purity and potency that are approved by the FDA and in accordance with the provisions of the approved label. The FDA and other agencies actively enforce the laws and regulations prohibiting the promotion of off-label uses. Failure to comply with these requirements can result in, among other things, adverse publicity, warning letters, corrective advertising and potential civil and criminal

penalties. Physicians may prescribe, in their independent professional medical judgment, legally available products for uses that are not described in the product's labeling and that differ from those tested by us and approved by the FDA. Physicians may believe that such off-label uses are the best treatment for many patients in varied circumstances. The FDA does not regulate the behavior of physicians in their choice of treatments. The FDA does, however, restrict manufacturer's communications on the subject of off-label use of their products. However, companies may share truthful and not misleading information that is otherwise consistent with a product's FDA-approved labelling.

Marketing Exclusivity

Market exclusivity provisions authorized under the FDCA can delay the submission or the approval of certain marketing applications. The FDCA provides a five-year period of non-patent marketing exclusivity within the United States to the first applicant to obtain approval of an NDA for a new chemical entity. A drug is a new chemical entity if the FDA has not previously approved any other new drug containing the same active moiety, which is the molecule or ion responsible for the action of the drug substance. During the exclusivity period, the FDA may not approve or even accept for review an abbreviated new drug application (ANDA) or an NDA submitted under Section 505(b)(2) (505(b)(2) NDA) submitted by another company for another drug based on the same active moiety, regardless of whether the drug is intended for the same indication as the original innovative drug or for another indication, where the applicant does not own or have a legal right of reference to all the data required for approval. However, an application may be submitted after four years if it contains a certification of patent invalidity or non-infringement to one of the patents listed with the FDA by the innovator NDA holder.

The FDCA alternatively provides three years of marketing exclusivity for an NDA, or supplement to an existing NDA if new clinical investigations, other than bioavailability studies, that were conducted or sponsored by the applicant are deemed by the FDA to be essential to the approval of the application, for example new indications, dosages or strengths of an existing drug. This three-year exclusivity covers only the modification for which the drug received approval on the basis of the new clinical investigations and does not prohibit the FDA from approving ANDAs or 505(b)(2) NDAs for drugs containing the active agent for the original indication or condition of use. Five-year and three-year exclusivity will not delay the submission or approval of a full NDA. However, an applicant submitting a full NDA would be required to conduct or obtain a right of reference to any preclinical studies and adequate and well-controlled clinical trials necessary to demonstrate safety and effectiveness.

Pediatric exclusivity is another type of marketing exclusivity available in the United States. Pediatric exclusivity provides for an additional six months of marketing exclusivity attached to another period of exclusivity if a sponsor conducts clinical trials in children in response to a written request from the FDA. The issuance of a written request does not require the sponsor to undertake the described clinical trials. In addition, orphan drug exclusivity, as described above, may offer a seven-year period of marketing exclusivity, except in certain circumstances.

Other U.S. Regulatory Requirements

In addition to FDA regulation of pharmaceutical products, pharmaceutical companies are also subject to additional healthcare regulation and enforcement by the federal government and by authorities in the states and foreign jurisdictions in which they conduct their business and may constrain the financial arrangements and relationships through which we research, as well as sell, market and distribute any products for which we obtain marketing authorization. Such laws include, without limitation, state and federal anti-kickback, fraud and abuse, false claims, data privacy and security, and transparency laws and regulations related to drug pricing and payments and other transfers of value made to physicians and other healthcare providers. If their operations are found to be in violation of any of such laws or any other governmental regulations that apply, they may be subject to penalties, including, without limitation, administrative, civil and criminal penalties, damages, fines,

disgorgement, the curtailment or restructuring of operations, integrity oversight and reporting obligations, exclusion from participation in federal and state healthcare programs and imprisonment.

Coverage and Reimbursement

Sales of any product depend, in part, on the extent to which such product will be covered by third-party payors, such as federal, state and foreign government healthcare programs, commercial insurance and managed healthcare organizations, and the level of reimbursement for such product by third-party payors. Decisions regarding the extent of coverage and amount of reimbursement to be provided are made on a plan-by-plan basis. These third-party payors are increasingly reducing reimbursements for medical products, drugs and services. In addition, the U.S. government, state legislatures and foreign governments have continued implementing cost-containment programs, including price controls, restrictions on coverage and reimbursement and requirements for substitution of generic products. Adoption of price controls and cost-containment measures, and adoption of more restrictive policies in jurisdictions with existing controls and measures, could further limit sales of any product. Decreases in third-party reimbursement for any product or a decision by a third-party payor not to cover a product could reduce physician usage and patient demand for the product and also have a material adverse effect on sales.

Healthcare Reform

In the United States, there have been, and continue to be, legislative and regulatory changes and proposed changes regarding the healthcare system that could prevent or delay marketing approval of product candidates, restrict or regulate post-approval activities, and affect the profitable sale of product candidates, and similar healthcare laws and regulations exist in the EU and other jurisdictions. Among policy makers and payors in the United States, there is significant interest in promoting changes in healthcare systems with the stated goals of containing healthcare costs, improving quality and/or expanding access. In the United States, the pharmaceutical industry has been a particular focus of these efforts and has been significantly affected by major legislative initiatives.

By way of example, in March 2010, the Patient Protection and Affordable Care Act (the ACA) was passed, which substantially changed the way healthcare is financed by both governmental and private insurers, and significantly affected the pharmaceutical industry. The ACA, among other things, increased the minimum level of Medicaid rebates payable by manufacturers of brand name drugs from 15.1% to 23.1% of the average manufacturer price; required collection of rebates for drugs paid by Medicaid managed care organizations; required manufacturers to participate in a coverage gap discount program, in which manufacturers must agree to offer point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer’s outpatient drugs to be covered under Medicare Part D; imposed a non-deductible annual fee on pharmaceutical manufacturers or importers who sell certain “branded prescription drugs” to specified federal government programs; implemented a new methodology by which rebates owed by manufacturers under the Medicaid Drug Rebate Program are calculated for drugs that are inhaled, infused, instilled, implanted, or injected; expanded eligibility criteria for Medicaid programs; creates a new Patient-Centered Outcomes Research Institute to oversee, identify priorities in, and conduct comparative clinical effectiveness research, along with funding for such research; and established a Center for Medicare and Medicaid Innovation at the CMS to test innovative payment and service delivery models to lower Medicare and Medicaid spending, potentially including prescription drug spending.

Since its enactment, there have been judicial, executive and political challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Prior to the Supreme Court’s decision, President Biden issued an Executive Order to initiate a special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The Executive Order also instructed certain governmental agencies to review and reconsider

their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is unclear how other healthcare reform measures of the Biden administration or other efforts, if any, to challenge, repeal or replace the ACA, will impact our business.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. For example, on March 11, 2021, President Biden signed the American Rescue Plan Act of 2021 into law, which eliminates the statutory Medicaid drug rebate cap, currently set at 100% of a drug's average manufacturer price, for single source and innovator multiple source drugs, beginning January 1, 2024. Further, in August 2011, the Budget Control Act of 2011, among other things, included aggregate reductions to Medicare payments to providers of 2% per fiscal year, which went into effect on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2030, with the exception of a temporary suspension from May 1, 2020 through December 31, 2021, unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years.

Moreover, there has recently been heightened governmental scrutiny over the manner in which manufacturers set prices for their marketed products, which has resulted in several Congressional inquiries and proposed and enacted federal and state legislation designed to, among other things, bring more transparency to product pricing, review the relationship between pricing and manufacturer patient programs, and reform government program reimbursement methodologies for pharmaceutical products. The likelihood of success of these and other reforms initiated by the former Trump administration is unclear, particularly in light of the new Biden administration.

Individual states in the United States have also become increasingly active in implementing regulations designed to control pharmaceutical product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. In addition, regional healthcare authorities and individual hospitals are increasingly using bidding procedures to determine which drugs and suppliers will be included in their healthcare programs Furthermore, there has been increased interest by third party payors and governmental authorities in reference pricing systems and publication of discounts and list prices.

Data Privacy and Security

Numerous state, federal and foreign laws, regulations and standards govern the collection, use, access to, confidentiality and security of health-related and other personal information, including clinical trial data, and could apply now or in the future to our operations or the operations of our partners. In the United States, numerous federal and state laws and regulations, including data breach notification laws, health information privacy and security laws and consumer protection laws and regulations (e.g., Section 5 of the FTC Act) govern the collection, use, disclosure and protection of health-related and other personal information. Further, to the extent we collect personal data from individuals outside of the United States, through clinical trials or otherwise, we could be subject to foreign laws, such as the GDPR, which govern the privacy and security of personal data, including health-related data. Our use of AI/ML may also be subject to evolving laws and regulations, controlling for data bias and antidiscrimination. Privacy and security laws, regulations and other obligations are constantly evolving, may conflict with each other to complicate compliance efforts, and can result in investigations, proceedings, or actions that lead to significant civil and/or criminal penalties and restrictions on data processing.

Research and Development

Total research and development expenses were $0 for the period of November 22, 2019 (inception) through December 31, 2019, $17.6 million for the year ended December 31, 2020 and $ and $ for the nine months ended September 30, 2020 and 2021, respectively.

Commercialization

We intend to retain significant development and commercial rights to our product candidates and, if marketing approval is obtained, we may commercialize our product candidates on our own, or potentially with a partner, in the United States and other geographies. We currently have no sales, marketing or commercial product distribution capabilities. We may build the necessary infrastructure and capabilities over time for the United States, and potentially other regions, though like all things we do, we would seek to leverage technology to build these capabilities over time to be significantly more efficient than the industry average. Decisions to create this infrastructure and capability will be made following further advancement of our product candidates and based on our assessment of our ability to build said capabilities and infrastructure with competitive advantage. Clinical data, the size of the addressable patient population, the size of the commercial infrastructure, manufacturing needs and major trends as to how value is accrued in the industry may all influence or alter our commercialization plans.

Manufacturing

We do not own or operate any manufacturing facilities. We currently depend on third-party CMOs, for all of our requirements of raw materials, drug substance and drug product for our preclinical research and our ongoing clinical trials of our product candidates. We intend to continue to rely on CMOs for later-stage development and commercialization of our product candidates, including any additional product candidates that we may identify. Although we rely on CMOs, we have personnel and third-party consultants with extensive manufacturing experience to oversee the relationships with our contract manufacturers.

Competition

We are a clinical-stage biotechnology company pioneering a precision medicine approach for brain diseases through the integration of data science and neuroscience. Our efforts to date have resulted in a pipeline of eight clinical and preclinical precision neuroscience programs targeting a broad range of underserved neuropsychiatric disorders and neurodegenerative diseases. Our platform is powered by advanced AI/ML methods that integrate multiple modalities of data from individual patients to deconvolve complex drivers of brain diseases to create Data Biopsy Signature. As such, we compete with multiple pharmaceutical and biotechnology companies that are similarly working to develop therapeutics targeting neuropsychiatric disorders and neurodegenerative diseases, as well as companies that are integrating computational and data science methods into their drug discovery and development activities and/or are creating scalable scientific platforms with the potential to generate large therapeutic pipelines. While we believe we have the competitive advantages referred to above, we face competition from major pharmaceutical and biotechnology companies, academic institutions, governmental agencies, consortiums and public and private research institutions, among others, many of whom have significantly greater resources than us. Notable competitors include traditional biotechnology companies targeting brain diseases such as Cerevel Therapeutics, Sage Therapeutics, ATAI Life Sciences, Karuna Therapeutics, Prothena, Cortexyme, Intra-Cellular Therapies and Alector; and other biotechnology companies that are increasingly making their own investments in the application of AI/ML methods across the drug discovery and development value chain such as AbCellera, Adaptive Biotechnologies, Recursion Pharmaceuticals and Absci. Such companies apply sophisticated computational tools to unlock novel insights or accelerate drug discovery and development across different points in the value chain.

Facilities

Our corporate headquarters are located in Watertown, Massachusetts, where we lease approximately 7,200 square feet of office and laboratory space pursuant to a lease agreement which was executed in September 2020 and expires in October 2023. We also lease laboratory space in Cambridge, Massachusetts and San Francisco, California that expire in January 2023 and December 2021, respectively.

In March 2021, we entered into a new lease agreement for an office facility in South San Francisco, California. The term of the lease commenced in April 2021 and ends in December 2023.

We believe that our existing facilities are sufficient for our near-term needs but expect to need additional space as we grow. We believe that suitable additional alternative spaces will be available in the future on commercially reasonable terms, if required.

Employees and Human Capital Resources

As of September 30, 2021, we had 84 employees, 56 of whom were primarily engaged in research and development activities. A total of 59 employees have an advanced degree. None of our employees are represented by a labor union or party to a collective bargaining agreement. We consider our relationship with our employees to be good.

Our human capital resources objectives include, as applicable, identifying, recruiting, retaining, incentivizing and integrating our existing and additional employees. The principal purposes of our equity incentive plans are to attract, retain and motivate selected employees, consultants and directors through the granting of stock-based compensation awards and cash-based performance bonus awards.

Legal Proceedings

We are not currently a party to any material legal proceedings. From time to time, we may, however, in the ordinary course of business face various claims brought by third parties, and we may, from time to time, make claims or take legal actions to assert our rights, including intellectual property rights as well as claims relating to employment matters and the safety or efficacy of our products. Any of these claims could subject us to costly litigation, and, while we generally believe that we have adequate insurance to cover many different types of liabilities, our insurance carriers may deny coverage, may be inadequately capitalized to pay on valid claims, or our policy limits may be inadequate to fully satisfy any damage awards or settlements. If this were to happen, the payment of any such awards could have a material adverse effect on our operations, cash flows and financial position. Additionally, any such claims, whether or not successful, could damage our reputation and business.

MANAGEMENT

Executive Officers, Key Employees and Directors

The following table sets forth information regarding our executive officers, key employees and directors as of September 30, 2021:

Executive Officers	Age	Position
Paul Berns	54	Chief Executive Officer, Director and Chairman
Lori Lyons-Williams	44	President and Chief Operating Officer
Joshua Pinto, Ph.D.	37	Chief Financial Officer
Nicholas (Nick) Brandon, Ph.D.	47	Chief Research Officer
John Dunlop, Ph.D.	55	Chief Scientific Officer
John Reynders, Ph.D.	57	Chief Data Sciences Officer
Jane Tiller, MBChB, FRCPsych	58	Chief Medical Officer
Daljit (Bill) Singh Aurora, Pharm.D.	54	Chief External Affairs Officer
Tamara L. Tompkins	56	General Counsel and Corporate Secretary
Key Employees		
Lori Houle	54	Senior Vice President, Quality
Julie Person	48	Chief People Officer
Carol Suh	32	Vice President, Business Development
Non-Employee Directors		
Kristina M. Burow	47	Director
Matthew Fust	57	Director
Maykin Ho, Ph.D.	68	Director
Robert Nelsen	58	Director
Kári Stefánsson, M.D.	72	Director
Stacie Weninger, Ph.D.(4)	49	Director

(1) Member of the audit committee.
(2) Member of the compensation committee.
(3) Member of the nominating and corporate governance committee.
(4) Dr. Weninger has indicated her intention to resign as a director prior to the effectiveness of the registration statement for which this prospectus is a part.

Executive Officers and Employee Director

Paul Berns has served as our Chief Executive Officer since November 2019 and as Chairman of our board of directors since January 2020. Mr. Berns has been a member of ARCH Venture Partners since August 2018 and became a Managing Director in 2020. Mr. Berns was a consultant to the pharmaceutical industry July 2016 to August 2018, as well as from August 2012 to March 2014 and from July 2005 to March 2006. From March 2014 to June 2016, Mr. Berns served as President, Chief Executive Officer and Chairman of the board of directors at Anacor Pharmaceuticals a biopharmaceutical company, which was acquired by Pfizer in 2016. Previously, Mr. Berns served as President and Chief Executive Officer of Allos Therapeutics, a biopharmaceutical company, from March 2006 to September 2012, when it was acquired by Spectrum Pharmaceuticals. Mr. Berns was President and Chief Executive Officer of Bone Care International, a specialty pharmaceutical company, from June 2002 to July 2005, when it was acquired by Genzyme Corporation. Prior to that, Mr. Berns was Vice President and General Manager of the Immunology, Oncology and Pain Therapeutics business unit of Abbott Laboratories from 2001 to 2002, and from 2000 to 2001, he served as Vice President, Marketing of BASF Pharmaceuticals/Knoll, when it was acquired by Abbott Laboratories in 2001. Earlier in his career, Mr. Berns held various positions, including senior management roles, at Bristol Myers Squibb (BMS) from 1990 to 2000. Mr. Berns has served as a board member of the publicly held company UNITY Biotechnology since March 2018 and the privately held companies Epirium Bio, EQRx and

HI Bio since July 2019, January 2020 and August 2021, respectively. Mr. Berns has served as the chairman of the board of directors of the privately held company Happy AI since July 2019. Mr. Berns previously served on the boards of Jazz Pharmaceuticals, PLC (from April 2010 to July 2021), MC2 Therapeutics (from May 2017 to January 2020), Menlo Therapeutics (from November 2017 to March 2020), Anacor Pharmaceuticals (from June 2012 to June 2016), XenoPort (from November 2005 to May 2016), Allos Therapeutics (from March 2006 to September 2012) and Bone Care International (from June 2002 to July 2005). Mr. Berns holds a B.S. in Economics from the University of Wisconsin. We believe Mr. Berns is qualified to serve on our board of directors because of his extensive management and leadership experience with biopharmaceutical and life sciences companies.

Lori Lyons-Williams has served as our President and Chief Operating Officer since April 2021. Prior to joining Neumora, Ms. Lyons-Williams served as Chief Commercial Officer of Dermira from December 2016 to May 2020, which was acquired by Eli Lilly in 2020. She previously served as the Vice President of Sales and Marketing at Allergan from January 2014 to August 2016. Ms. Lyons-Williams has served as an independent director on the board of Pipeline Therapeutics since September 2020 and previously served as independent director on the board of Five Prime Therapeutics from June 2019 to April 2021. Ms. Lyons-Williams holds a B.A. in Pre-Medicine from Virginia Polytechnic Institute and State University and an M.B.A. from the Carlson School of Management at the University of Minnesota.

Joshua Pinto, Ph.D., has served as our Chief Financial Officer since June 2021. Prior to Neumora, Dr. Pinto was the director of healthcare investment banking at Credit Suisse from 2015 to 2021, where he focused on the life sciences sector and was responsible for advising biotech companies on mergers, acquisitions, restructurings, activism and financing. Dr. Pinto worked for Piper Jaffray as an associate in healthcare banking from 2014 to 2015. Before that, he worked in global external R&D at Eli Lilly and Company from 2013 to 2014. Dr. Pinto holds a B.S. in Business and Biochemistry from Centenary College of Louisiana, an M.B.A. in finance from McMaster University and a Ph.D. in Neuroscience from McMaster University.

Nicholas Brandon, Ph.D., has served as our Chief Research Officer since April 2020. From April 2019 to April 2020, Dr. Brandon served as senior vice president and head of biology at Jnana Therapeutics. Previously, Dr. Brandon worked at AstraZeneca from May 2012 to April 2019, where he held multiple positions including chief scientist and head of neuroscience discovery. Previously, Dr. Brandon was head of psychiatry and behavioral disorders for a period that bridged the Wyeth and Pfizer Neuroscience organizations between April 2006 and May 2012. Dr. Brandon holds an undergraduate degree in Genetics from Pembroke College, Cambridge and a Ph.D. from University College London.

John Dunlop, Ph.D., has served as our Chief Scientific Officer since March 2020. Prior to Neumora, Dr. Dunlop was most recently at Amgen from September 2016 to March 2020, where he led the neuroscience research program responsible for therapeutic discovery activities in neurodegenerative diseases, pain and migraine. From March 2012 to August 2016, he led neuroscience discovery and early development at AstraZeneca, and previously held executive leadership roles in neuroscience at Pfizer from November 2009 to March 2012 and Wyeth prior to that. Dr. Dunlop is an industry member of the HEAL (Helping End Addiction Long term) Partnership Committee, an NIH advisory committee established to support NIH initiatives launched to address the U.S. opioid crisis. He is a board member of Target-ALS, a non-profit enterprise dedicated to accelerating drug discovery and development in ALS, and MassBio, and is on the scientific advisory boards of Vigil Neuroscience and the Packard Center for ALS Research at Johns Hopkins. Dr. Dunlop holds a B.Sc. in Biochemistry from the University of Glasgow and a Ph.D. in Neuroscience from the University of St. Andrews.

John Reynders, Ph.D., has served as our Chief Data Sciences Officer since December 2020. Dr. Reynders is also founder and CEO of Latent Strategies, a startup applying artificial intelligence, data sciences and game theory to business strategy and education. Prior to founding Latent Strategies in August 2020, Dr. Reynders served as Vice President, Data Sciences, Genomics and Bioinformatics at Alexion from September 2017 to August 2020. From July 2013 to December 2014, Dr. Reynders served as the founding Chief Information Officer of Moderna Therapeutics, and from October 2010 to July 2013, Dr. Reynders served as Vice President of R&D information at AstraZeneca. From August 2007 to October 2010, Dr. Reynders served in leadership roles at Johnson & Johnson,

including as Vice President, Integrative Neuroscience and Biomarkers, Head of Informatics and Vice President of R&D Information Technology. Previously, he served as Information Officer with Lilly Research Laboratories, Vice President of Informatics at Celera Genomics, and held roles as Director and Program Manager at the Los Alamos National Laboratory. Dr. Reynders holds a B.S. in Mathematics from Rensselaer Polytechnic Institute, a Ph.D. in Applied and Computational Mathematics from Princeton University and an M.B.A from the Northwestern University Kellogg School of Management.

Jane Tiller, MBChB, FRCPsych, has served as our Chief Medical Officer since September 2020. Prior to Neumora, she was Chief Medical Officer at BlackThorn, a wholly owned subsidiary of our company, from March 2019 to its acquisition in September 2020. Dr. Tiller was head of European markets, Australia and Canada, at BMS from 2014 to 2018, where she oversaw all medical functions. During her tenure at BMS from May 2011 to December 2018, Dr. Tiller also served as vice president of global medical for neuroscience, virology and immunoscience and as full development team lead for the Alzheimer's program. Prior to joining BMS, Dr. Tiller held various positions at Cephalon, including as Vice President of Neuroscience and Pain. Dr. Tiller was clinical director at the Maudsley Hospital, London, where she was responsible for clinical psychiatricservices for Southwark and across several London teaching hospitals. She was a consultant psychiatrist (attending) and honorary senior lecturer. Dr. Tiller holds a medical degree from the Glasgow University Medical School, an M.B.A. from Drexel University and an M.Phil. from the University of Pennsylvania.

Bill Aurora, Pharm.D., has served as our Chief External Affairs Officer since August 2021. From July 2016 to June 2021, Dr. Aurora served as Chief Scientific Affairs Officer of Dermira, which was acquired by Eli Lilly in 2020. Previously, he held vice president roles in medical affairs at Neurocrine Biosciences from May 2015 to July 2016 as well as global scientific affairs at Merck Research Laboratories from September 2014 to April 2015 and Amgen from July 2002 to September 2014. Dr. Aurora holds a B.S. in pharmacy from the University of Texas at Austin and a Pharm.D. from the University of Texas Health Science Center, San Antonio, and is board certified in psychiatric pharmacy practice.

Tamara L. Tompkins has served as our General Counsel and Corporate Secretary since October 2020. From June 2017 to September 2020, Ms. Tompkins served as General Counsel and Corporate Secretary at UNITY Biotechnology. Prior to that, Ms. Tompkins served as an Operating Partner, General Counsel and Chief Administrative Officer of Khosla Ventures, a venture capital firm, from January 2013 to December 2016. From February 2005 to May 2012, Ms. Tompkins served as General Counsel of Amyris, a publicly held bio-renewables company. She began her career in private practice, first with Shearman & Sterling, then Brobeck, Phleger & Harrison, and finally as Of Counsel at Morgan Lewis. Ms. Tompkins holds a B.A. in History from Middlebury College and a J.D. from Georgetown University.

Key Employees

Lori Houle has served as our Senior Vice President of Quality since April 2021. From October 2017 to April 2021, Ms. Houle acted as the Vice President of Global Quality at Vir Biotechnology. Prior to Vir, Ms. Houle held leadership roles at Dermira from November 2014 to October 2017, Sarepta Therapeutics from October 2011 to September 2014, EraGen Bioscienses from to October 2010 to August 2011, Anteco Pharma June 2007 to September 2011, PPD from June 2004 to October 2010 and Wyeth (SPL) from May 1998 to June 2004. Ms. Houle holds degrees in Bacteriology and Medical Microbiology from the University of Wisconsin Madison and an M.B.A. from DeVry University.

Julie Person has served as our Chief People Officer since January 2021. Ms. Person's prior experience includes heads of human resources roles at Sangamo from March 2019 to April 2020 and Audentes Therapeutics from April 2020 to January 2021. Ms. Person also served in senior leadership roles at Shire from September 2015 to February 2019 and McKesson from August 2001 to August 2014. Ms. Person holds a B.A. in Communications from Saint Mary's College of California and attended the University of Michigan Ross School of Business Executive Leadership Program.

Carol Suh is one of our co-founders and has served as our Vice President of Business Development since January 2020. Ms. Suh has been a member of ARCH Venture Partners since August 2018 and became a Partner in July 2021. While at ARCH, she has been involved in company creation and helped build Sana Biotechnology, Autobahn Therapeutics and Boundless Bio across the fields of cell and gene therapy, neuroscience and oncology. She has served on the board of directors of HI Bio since August 2021. Prior to ARCH, Carol helped launch Magenta Therapeutics, a biotechnology company, from May 2016 to August 2016. Previously, she was a consultant at Trinity Partners from January 2015 to May 2016. Ms. Suh began her career in R&D strategy with GlaxoSmithKline's Regenerative Medicine group from May 2014 to December 2014. Ms. Suh holds an A.B. in molecular cellular biology from Harvard University, where she trained under Dr. David Scadden at the Harvard Stem Cell Institute, an M.Phil. from Yale University, where she was awarded the National Science Foundation Graduate Research Fellowship for her work in stem cell biology, and an M.B.A. from the Stanford Graduate School of Business.

Non-Employee Directors

Kristina M. Burow has served as a member of our board of directors since January 2020. Ms. Burow has served as Managing Director of ARCH Venture Partners since November 2011 and previously held various roles at ARCH from August 2002 to November 2011. Ms. Burow currently serves on the boards of directors of several biopharmaceutical and biotechnology companies, including Boundless Bio since February 2018, Autobahn Therapeutics since February 2018, Gossamer Bio since January 2018, Beam Therapeutics since June 2017, Metacrine, Inc. since May 2015, Scholar Rock since August 2014 and UNITY Biotechnology since July 2013. She previously was a co-founder and member of the board of directors of Receptos, acquired by Celgene, and was a was a co-founder and member of the board of directors of Sapphire Energy. Ms. Burow previously served on the board of directors of Sienna Biopharmaceuticals, from October 2015 to December 2019, Vividion Therapeutics, Inc. from January 2017 to October 2021, VIR Biotechnology from January 2017 to September 2020, AgBiome, LLC from December 2012 to October 2021, BlackThorn from October 2013 to September 2020 and Lycera Corp. from April 2009 to 2020. Prior to joining ARCH, Ms. Burow was an Associate with the Novartis BioVenture Fund and an early employee at the Genomics Institute of the Novartis Research Foundation. Ms. Burow holds a B.S. in Chemistry from the University of California, Berkeley, an M.A. in Chemistry from Columbia University and an M.B.A. from the University of Chicago Booth School of Business. We believe Ms. Burow is qualified to serve on our board of directors because of her extensive experience investing in biopharmaceutical and biotechnology companies and her experience on boards of directors in the medical industry.

Matthew Fust has served as a member of our board of directors since December 2020. Mr. Fust is an advisor to life science companies and previously served as Executive Vice President and Chief Financial Officer of Onyx Pharmaceuticals from January 2009 to October 2013. Prior to that, Mr. Fust held the position of Chief Financial Officer of Jazz Pharmaceuticals from May 2003 to December 2008, and Chief Financial Officer of Perlegen Sciences from May 2002 to April 2003. Mr. Fust previously served as Senior Vice President and Chief Financial Officer of ALZA Corporation, where he was an executive from 1996 to 2002. Mr. Fust has served on the boards of directors of Ultragenyx Pharmaceutical since January 2014; Atara Biotherapeutics since March 2014; and Crinetics Pharmaceuticals since February 2018. Mr. Fust previously served on the boards of Dermira, from April 2014 to February 2020, MacroGenics, from March 2014 to May 2020 and BlackThorn until June 2020. Mr. Fust holds a B.A. from the University of Minnesota and an M.B.A. from the Stanford University Graduate School of Business. We believe Mr. Fust is qualified to serve on our board of directors because of his deep experience running and serving on the boards of biopharmaceutical companies.

Maykin Ho, Ph.D., has served as a member of our board of directors since April 2021. Dr. Ho has more than 30 years of experience in the healthcare and finance industries, and has served as a venture partner of Qiming Venture Partners since July 2015, and as a member of the Biotech Advisory Panel of the Stock Exchange of Hong Kong. Dr. Ho is a retired partner of the Goldman Sachs Group, where she served in several roles from July 1992 to February 2015, including as senior biotechnology analyst, co-head of healthcare for global investment research and advisory director for healthcare investment banking. Prior to Goldman Sachs, she held various managerial positions in licensing, strategic planning, marketing and research at DuPont-Merck Pharmaceuticals and DuPont de

Nemours & Company from January 1982 to July 1992. Dr. Ho has served on the board of directors for Agios Pharmaceuticals since June 2015, BioMarin Pharmaceutical since February 2021, Fibrogen since December 2018, GRAIL since May 2019, Parexel International since August 2015, the Aaron Diamond AIDS Research Center and the Institute for Protein Innovation. Dr. Ho holds a B.S. and a Ph.D. in Microbiology and Immunology from the State University of New York, Downstate Medical Center. She was a postdoctoral fellow at Harvard Medical School and a graduate of the Advanced Management Program at The Fuqua School of Business at Duke University. We believe Dr. Ho is qualified to serve on our board of directors due to her extensive experience in healthcare investment research and banking.

Robert Nelsen has served as a member of our board of directors since September 2020. Since 1986, Mr. Nelsen has served as co-founder and Managing Director of ARCH Venture Partners, a venture capital firm focused on early stage technology companies. Mr. Nelsen currently serves as a member of the board of directors of Beam Therapeutics, Brii Biosciences, Denali Therapeutics, Hua Medicine (Shanghai), Lyell Immunopharma, Revolution Healthcare Acquisition Corp., Sana Biotechnology and Vir Biotechnology, all of which are publicly-traded companies. He also serves as a member of the board of directors of several privately-held biotechnology and biopharmaceutical companies. Mr. Nelsen previously served on the board of directors of various publicly-traded biopharmaceutical companies including Agios Pharmaceuticals, Karuna Therapeutics, Illumina, Juno Therapeutics (acquired by Celgene (now part of BMS) in January 2018), Sage Therapeutics, Syros Pharmaceuticals and UNITY Biotechnology. He also previously served as Trustee of the Fred Hutchinson Cancer Research Center and as a director of the National Venture Capital Association. Mr. Nelsen hold a B.S. with majors in Economics and Biology from the University of Puget Sound and an M.B.A from The University of Chicago Booth School of Business. We believe Mr. Nelsen is qualified to serve on our board of directors because of his experience as a venture capitalist, building and serving boards of many public and private emerging companies, including multiple life sciences, biotechnology and pharmaceutical companies.

Kári Stefánsson, M.D., Dr. Med., has served as a member of our board of directors since September 2021. Dr. Stefánsson founded deCODE genetics in August 1996 and currently serves as its Chief Executive Officer. He has shaped deCODE's scientific approach and been actively engaged in leading its gene discovery work, serving as senior author on most of the company's publications in major scientific journals. Dr. Stefánsson was previously a professor of Neurology, Neuropathology and Neuroscience at Harvard University and Director of Neuropathology at Beth Israel Hospital in Boston, Massachusetts. From 1983 to 1993, he held faculty positions in Neurology, Neuropathology and Neurosciences at the University of Chicago. Dr. Stefansson is recognized as a leading figure in human genetics. Dr. Stefánsson holds an M.D. and Dr. Med. from the University of Iceland and is board-certified in neurology and neuropathology in the United States. We believe Mr. Stefánsson is qualified to serve on our board of directors because his expertise and leadership in the fields of genetics and neuroscience.

Stacie Weninger, Ph.D., has served as a member of our board of directors since September 2020. Dr. Weninger has indicated her intention to resign as a director prior to the effectiveness of the registration statement for which this prospectus is a part.

Family Relationships

There are no family relationships among any of our executive officers or directors.

Board Structure and Composition

Director Independence

Our board of directors currently consists of seven members. Our board of directors has determined that all of our directors, other than Mr. Berns, qualify as independent directors in accordance with The Nasdaq Stock Market LLC (Nasdaq) Marketplace Rules (the Nasdaq Listing Rules). Mr. Berns is not considered independent by virtue of his position as an executive officer of the company. Under the Nasdaq Listing Rules, the definition

of independence includes a series of objective tests, such as that the director is not, and has not been for at least three years, one of our employees and that neither the director nor any of his or her family members has engaged in various types of business dealings with us. In addition, as required by the Nasdaq Listing Rules, our board of directors has made a subjective determination as to each independent director that no relationships exists that, in the opinion of our board of directors, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In making these determinations, our board of directors reviewed and discussed information provided by the directors and us with regard to each director's relationships as they may relate to us and our management.

Classified Board of Directors

In accordance with our amended and restated certificate of incorporation, which will be effective immediately prior to the completion of this offering, our board of directors will be divided into three classes with staggered three-year terms. At each annual general meeting of stockholders, the successors to directors whose terms then expire will be elected to serve from the time of election and qualification until the third annual meeting following election. Our directors will be divided among the three classes as follows:

- The Class I directors will be , and , and their terms will expire at the annual meeting of stockholders to be held in 202 ;
- The Class II directors will be , and , and their terms will expire at the annual meeting of stockholders to be held in 202 ; and
- The Class III directors will be , and , and their terms will expire at the annual meeting of stockholders to be held in 202 .

We expect that any additional directorships resulting from an increase in the number of directors will be distributed among the three classes so that, as nearly as possible, each class will consist of one-third of the directors. The division of our board of directors into three classes with staggered three-year terms may delay or prevent a change of our management or a change in control.

Voting Arrangements

The election of the members of our board of directors is currently governed by the voting agreement that we entered into with certain holders of our common stock and convertible preferred stock and the related provisions of our amended and restated certificate of incorporation. Pursuant to our voting agreement and amended and restated certificate of incorporation, our current directors were elected as follows:

- Ms. Burow and Mr. Nelsen were elected as the designees of ARCH Venture Partners;
- Dr. Weninger was elected as the designee of F-Prime Capital Partners;
- Mr. Berns was elected and designated as our then serving and current Chief Executive Officer; and
- Dr. Ho and Mr. Fust were elected and designated by the holders of a majority of our common stock and convertible preferred stock.

Our voting agreement will terminate and the provisions of our current amended and restated certificate of incorporation by which our directors were elected will be amended and restated in connection with this offering. After this offering, the number of directors will be fixed by our board of directors, subject to the terms of our amended and restated certificate of incorporation and amended and restated bylaws that will become effective immediately prior to the completion of this offering. Each of our current directors will continue to serve as a director until the election and qualification of his or her successor, or until his or her earlier death, resignation or removal.

Leadership Structure of the Board

Our amended and restated bylaws and corporate governance guidelines provide our board of directors with flexibility to combine or separate the positions of Chairman of the board of directors and Chief Executive Officer. Mr. Berns currently serves as the Chairman of the Board.

Our board of directors has concluded that our current leadership structure is appropriate at this time. However, our board of directors will continue to periodically review our leadership structure and may make such changes in the future as it deems appropriate.

Role of Board in Risk Oversight Process

Risk assessment and oversight are an integral part of our governance and management processes. Our board of directors encourages management to promote a culture that incorporates risk management into our corporate strategy and day-to-day business operations. Management discusses strategic and operational risks at regular management meetings, and conducts specific strategic planning and review sessions during the year that include a focused discussion and analysis of the risks facing us. Throughout the year, senior management reviews these risks with the board of directors at regular board meetings as part of management presentations that focus on particular business functions, operations or strategies, and presents the steps taken by management to mitigate or eliminate such risks.

Our board of directors does not have a standing risk management committee, but rather administers this oversight function directly through our board of directors as a whole, as well as through various standing committees of our board of directors that address risks inherent in their respective areas of oversight. While our board of directors is responsible for monitoring and assessing strategic risk exposure, our audit committee is responsible for overseeing our major financial risk exposures and the steps our management has taken to monitor and control these exposures. The audit committee also approves or disapproves any related person transactions. Our nominating and corporate governance committee monitors the effectiveness of our corporate governance guidelines. Our compensation committee assesses and monitors whether any of our compensation policies and programs has the potential to encourage excessive risk-taking.

Board Committees

Our board of directors has three standing committees: the audit committee; the compensation committee; and the nominating and governance committee. Each committee is governed by a charter that will be available on our website following completion of this offering.

Audit Committee

Effective as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, the members of our audit committee will consist of , , and . will be the chairperson of our audit committee. The composition of our audit committee meets the requirements for independence under the current Nasdaq Listing Rules and Rule 10A-3 of the Exchange Act. Each member of our audit committee is financially literate. In addition, our board of directors has determined that is an “audit committee financial expert” within the meaning of the SEC rules. This designation does not impose on such directors any duties, obligations, or liabilities that are greater than are generally imposed on members of our audit committee and our board of directors. Our audit committee is directly responsible for, among other things:

- appointing, retaining, compensating and overseeing the work of our independent registered public accounting firm;
- assessing the independence and performance of the independent registered public accounting firm;
- monitoring the rotation of partners of our independent registered public accounting firm on our engagement team as required by law;

- reviewing with our independent registered public accounting firm the scope and results of the firm's annual audit of our consolidated financial statements;
- overseeing the financial reporting process and discussing with management and our independent registered public accounting firm the consolidated financial statements that we will file with the SEC;
- pre-approving all audit and permissible non-audit services to be performed by our independent registered public accounting firm;
- reviewing policies and practices related to risk assessment and management;
- reviewing our accounting and financial reporting policies and practices and accounting controls, as well as compliance with legal and regulatory requirements;
- reviewing, overseeing, approving, or disapproving any related-person and related party transactions;
- reviewing with our management the scope and results of management's evaluation of our disclosure controls and procedures and management's assessment of our internal control over financial reporting, including the related certifications to be included in the periodic reports we will file with the SEC; and
- establishing procedures for the confidential anonymous submission of concerns regarding questionable accounting, internal controls, or auditing matters, or other ethics or compliance issues.

Compensation Committee

Effective as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, the members of our compensation committee will consist of , , and . will be the chairperson of our compensation committee. Each of , , and is a non-employee director, as defined by Rule 16b-3 promulgated under the Exchange Act and meets the requirements for independence under the current Nasdaq Listing Rules. Our compensation committee is responsible for, among other things:

- reviewing and approving the compensation of our executive officers, including reviewing and approving corporate goals and objectives with respect to compensation;
- authority to act as an administrator of our equity incentive plans;
- reviewing and approving, or making recommendations to our board of directors with respect to, incentive compensation and equity plans;
- reviewing and recommending that our board of directors approve the compensation for our non-employee board members; and
- establishing and reviewing general policies relating to compensation and benefits of our employees.

Nominating and Governance Committee

Effective as of the date the registration statement of which this prospectus forms a part is declared effective by the SEC, the members of our nominating and governance committee will consist of , , and . will be the chairperson of our nominating and governance committee. , , and meet the requirements for independence under the current Nasdaq Listing Rules. Our nominating and governance committee is responsible for, among other things:

- identifying and recommending candidates for membership on our board of directors, including the consideration of nominees submitted by stockholders, and on each of the board's committees;
- reviewing and recommending our corporate governance guidelines and policies;
- reviewing proposed waivers of the code of business conduct and ethics for directors and executive officers;

- overseeing the process of evaluating the performance of our board of directors; and
- assisting our board of directors on corporate governance matters.

Code of Business Conduct and Ethics

In connection with this offering, our board of directors will adopt a code of business conduct and ethics that applies to all of our employees, officers and directors, including our Chief Executive Officer, Chief Financial Officer and other executive and senior financial officers. Upon completion of this offering, the full text of our code of business conduct and ethics will be posted on the investor relations section of our website. We intend to disclose future amendments to our code of business conduct and ethics, or any waivers of such code, on our website or in public filings.

Compensation Committee Interlocks and Insider Participation

None of our executive officers has served as a member of a compensation committee (or if no committee performs that function, the board of directors) of any other entity that has an executive officer serving as a member of our board of directors.

DIRECTOR COMPENSATION

Historically, we have not had a formalized non-employee director compensation program.

During 2021, only Mr. Fust and Dr. Ho received compensation for their service on our board of directors. Each of Mr. Fust and Dr. Ho received $10,000 per quarter of service on our board of directors. In April 2021, we granted an option to each of Mr. Fust and Dr. Ho to purchase 750,000 shares of our common stock. The options vest and become exercisable, respectively, as to 1/36th of the shares on each monthly anniversary of December 23, 2020 for Mr. Fust and April 23, 2021 for Dr. Ho, subject to Mr. Fust's and Dr. Ho's respective continued service through the applicable vesting date. In addition, we reimburse our non-employee directors for travel and other necessary business expenses incurred in the performance of their services for us.

We intend to approve and implement a compensation policy for our non-employee directors to be effective on the consummation of this offering.

The following table sets forth information concerning the compensation earned by our non-employee directors during the year ended December 31, 2021.

2021 Director Compensation Table

Name	Fees Earned or Paid in Cash ($)	Option Awards ($)(1)	Total ($)
Kristina Burow			
Matthew Fust			
Maykin Ho, Ph.D.			
Robert Nelsen			
Kári Stefánsson			
Stacie Weninger			

(1) For the option awards columns, amounts shown represents the grant date fair value of options granted during 2021 as calculated in accordance with ASC Topic 718. See Financial Accounting Standards Board, Accounting Standards Codification Topic 718, *Compensation—Stock Compensation* (FASB ASC Topic 718). Assumptions used in the calculation of these amounts are described in Note 13 and Note _____ to our audited consolidated financial statements and unaudited condensed consolidated financial statements and notes, respectively appearing elsewhere in this prospectus. These amounts do not reflect the actual economic value that will be realized by our named executive officers upon the vesting of the stock options, the exercise of the stock options, or the sale of the common stock underlying such stock options.

The table below shows the aggregate numbers of option awards (exercisable and unexercisable) held as of December 31, 2021 by each non-employee director who was serving as of December 31, 2021.

Name	Options Outstanding
Kristina Burow	
Matthew Fust	
Maykin Ho, Ph.D.	
Robert Nelsen	
Kári Stefánsson	
Stacie Weninger	

EXECUTIVE COMPENSATION

The following is a discussion and analysis of compensation arrangements of our named executive officers, or NEOs. This discussion contains forward looking statements that are based on our current plans, considerations, expectations and determinations regarding future compensation programs. Actual compensation programs that we adopt may differ materially from currently planned programs as summarized in this discussion. As an "emerging growth company" as defined in the JOBS Act, we are not required to include a Compensation Discussion and Analysis section and have elected to comply with the scaled disclosure requirements applicable to emerging growth companies.

We seek to ensure that the total compensation paid to our executive officers is reasonable and competitive. Compensation of our executives is structured around the achievement of individual performance and near-term corporate targets as well as long-term business objectives.

Our NEOs for 2021 were as follows:

- Paul Berns, our Chief Executive Officer;
- Lori Lyons-Williams, our President and Chief Operating Officer; and
- Joshua Pinto, Ph.D., our Chief Financial Officer.

Ms. Lyons-Williams commenced services with us in April 2021 as our President and Chief Operating Officer and Dr. Pinto commenced services with us in June 2021 as our Chief Financial Officer.

2021 Summary Compensation Table

The following table sets forth total compensation paid to our named executive officers for the year ending on December 31, 2021.

Name and Principal Position	Year	Salary ($)	Bonus ($)	Option Awards ($)	Non-Equity Incentive Plan Compensation ($)	All Other Compensation ($)	Total ($)
Paul Berns Chief Executive Officer	2021						
Lori Lyons-Williams President and Chief Operating Officer	2021						
Joshua Pinto, Ph.D. Chief Financial Officer	2021						

Narrative to Summary Compensation Table

2021 Salaries

Our NEOs each receive a base salary to compensate them for services rendered to our company. The base salary payable to each named executive officer is intended to provide a fixed component of compensation reflecting the executive's skill set, experience, role and responsibilities.

For 2021, Mr. Berns, Ms. Lyons-Williams and Dr. Pinto had an annual base salary of $520,000, $500,000 and $450,000 respectively. Ms. Lyons-Williams' and Dr. Pinto's annual base salary was pro-rated for their partial employment with us commencing in April 2021 and June 2021, respectively.

Our board of directors and compensation committee may adjust base salaries from time to time in their discretion.

2021 Bonuses

We maintain an annual performance-based cash bonus program in which each of our NEOs participated in 2021. Each NEO's target bonus is expressed as a percentage of their annual base salary which can be achieved by meeting company and individual goals at target level. The 2021 annual bonuses for Mr. Berns, Ms. Lyons-Williams and Dr. Pinto were targeted at 50%, 45% and 40% of their respective base salaries. Our board of directors has historically reviewed these target percentages to ensure they are adequate, but does not follow a formula. Instead, our board of directors set these rates based on each NEO's experience in their role with us and the level of responsibility held by the NEO, which we believe directly correlates to their ability to influence corporate results.

For determining performance bonus amounts, our board of directors set certain corporate performance goals after receiving input from our Chief Executive Officer. Following its review and determinations of corporate and individual performance for 2021 that is expected to occur on or before March 2022, our board of directors will determine an achievement level of their target bonuses for each of Mr. Berns, Ms. Lyons-Williams and Dr. Pinto. The actual amount of the 2021 annual bonus paid to each NEO for 2021 performance will be set forth above in the Summary Compensation Table in the column titled "Non-Equity Incentive Plan Compensation."

Equity-Based Compensation

In April 2021, in connection with her commencement of employment, we granted Ms. Lyons-Williams an option to purchase 7,000,000 shares. The option vests as to 25% of the shares on each anniversary of April 19, 2021 (the date Ms. Lyons-Williams commenced employment with us), subject to Ms. Lyons-Williams continuing to provide services to us through such vesting date, except that 2,062,500 shares subject to the option were exercisable prior to vesting, subject to Ms. Lyons-Williams entering into a restricted stock purchase agreement for any such exercised shares. In July 2021, Ms. Lyons-Williams early exercised 1,750,000 shares, which became restricted stock.

In June 2021, in connection with his commencement of employment, we granted Dr. Pinto an option to purchase 7,500,000 shares. A portion of the option vests as to 25% of the shares on each anniversary of June 1, 2021 (the date Dr. Pinto commenced employment with us), subject to Dr. Pinto continuing to provide services to us through such vesting date, and a portion of the option vests upon attainment of certain performance criteria. 1,875,000 shares subject to the option were exercisable prior to vesting, subject to Dr. Pinto entering into a restricted stock purchase agreement for any such exercised shares. In June 2021, Dr. Pinto early exercised 1,875,000 shares, which became restricted stock.

In connection with this offering, we intend to adopt a 2022 Incentive Award Plan, referred to below as the 2022 Plan, in order to facilitate the grant of cash and equity incentives to directors, employees (including our NEOs) and consultants of our company and certain of its affiliates and to enable us to obtain and retain services of these individuals, which is essential to our long-term success. We expect that the 2022 Plan will be effective on the day prior to the first public trading date of our common stock, subject to approval of such plan by our stockholders. For additional information about the 2022 Plan, please see the section titled "Equity Incentive Plans."

Other Elements of Compensation

Retirement Savings and Health and Welfare Benefits

We currently maintain a 401(k) retirement savings plan for our employees, including our named executive officers, who satisfy certain eligibility requirements. Our named executive officers are eligible to participate in the 401(k) plan on the same terms as other full-time employees. During 2021, there was no matching contribution under our 401(k) plan.

All of our full-time employees, including our NEOs, are eligible to participate in our health and welfare plans, including medical, dental and vision benefits; medical and dependent care flexible spending accounts; short-term and long-term disability insurance; and life and AD&D insurance. Our NEOs are eligible for certain enhanced benefits under our executive-level medical insurance, life insurance and short-term and long-term disability insurance.

Perquisites and Other Personal Benefits

We did not provide any perquisites to our named executive officers during 2021, but our compensation committee may from time to time approve them in the future when our compensation committee determines that such perquisites are necessary or advisable to fairly compensate or incentivize our employees.

Outstanding Equity Awards at 2021 Year End

The following table lists all outstanding equity awards held by our NEOs as of December 31, 2021.

		Option Awards					Stock Awards	
Name	Vesting Commencement Date	Number of Securities Underlying Unexercised Options Exercisable (#)	Number Of Securities Underlying Unexercised Options Unexercisable (#)	Equity Incentive Plan Awards: Number of Securities Underlying Unexercised Unearned Options (#)	Option Exercise Price ($)	Option Expiration Date	Number of Shares That Have Not Vested (#)	Market Value of Shares or Units of Shares that Have Not Vested as ($)
Paul Berns								
Lori Lyons-Williams								
Joshua Pinto, Ph.D.								

Executive Compensation Arrangements

For 2021, we have entered into offer letter agreements with each of our NEOs.

Paul Berns. We entered into an offer letter with Mr. Berns effective as of January 17, 2020, pursuant to which he serves as our Chief Executive Officer. The offer letter provides for his annual base salary, discretionary annual performance bonus, a restricted stock purchase grant and eligibility for benefits. The employment agreement also contains a requirement that he enter into our standard employee proprietary information and inventions assignment agreement. The offer letter provides that in the event his employment is terminated without cause or he resigns for good reason (as each term is defined in the offer letter), he will be entitled to receive continued payment for four months' base salary and four months of COBRA reimbursements. All severance payments will be contingent on a full release of any and all claims.

Lori Lyons-Williams. We entered into an offer letter with Ms. Lyons-Williams effective as of April 19, 2021, pursuant to which she serves as our President and Chief Operating Officer. The offer letter provides for her annual base salary, discretionary annual performance bonus, an initial option grant (as described above) and eligibility for benefits. The employment agreement also contains a requirement that she enter into our standard employee proprietary information and inventions assignment agreement. The offer letter provides that in the event her employment is terminated without cause or she resigns for good reason (as each term is defined in the offer letter), she will be entitled to receive continued payment for four months' base salary and four months of COBRA reimbursements. All severance payments will be contingent on a full release of any and all claims.

Joshua Pinto, Ph.D. We entered into an offer letter with Dr. Pinto effective as of June 1, 2021, pursuant to which he serves as our Chief Financial Officer. The offer letter provides for his annual base salary, discretionary

annual performance bonus, an initial option grants (as described above) and eligibility for benefits. In addition, the offer letter provides Dr. Pinto with a one-time signing bonus in an amount of (i) an amount to be grossed up so that Dr. Pinto receives $160,000 after taxes plus (ii) $350,000. This sign-on bonus was paid to Dr. Pinto in June 2021 in connection with the commencement of his services. If Dr. Pinto terminates employment without good reason or the Company terminates his employment for cause prior to June 1, 2022, then he must repay the net amount of the sign-on bonus (less any nonrefundable taxes paid by him). The offer letter also provides that in event any other executive who directly reports to our Chief Executive Officer is provided terms which are more favorable, we will amend the offer letter to include such terms (including any equity acceleration upon a change of control or enhanced severance).

The employment agreement also contains a requirement that he enter into our standard employee proprietary information and inventions assignment agreement. The offer letter provides that in the event his employment is terminated without cause or he resigns for good reason (as each term is defined in the offer letter), he will be entitled to receive continued payment for four months' base salary and four months of COBRA reimbursements. All severance payments will be contingent on a full release of any and all claims.

Equity Compensation Plans

The following summarizes the material terms of the long-term incentive compensation plan in which our named executive officers will be eligible to participate following the consummation of this offering and our 2020 Equity Incentive Plan (the 2020 Plan) and the 2015 Equity Incentive Plan that we assumed in a transaction in 2020 (the 2015 Plan, and collectively with the 2020 Plan, the Prior Plans), under which we have previously made periodic grants of equity and equity-based awards to our named executive officers and other key employees.

2022 Incentive Award Plan

We intend to adopt the 2022 Plan, which will be effective on the day prior to the first public trading date of our common stock. The principal purpose of the 2022 Plan is to attract, retain and motivate selected employees, consultants and directors through the granting of stock-based compensation awards and cash-based performance bonus awards. The material terms of the 2022 Plan, as it is currently contemplated, are summarized below.

Share Reserve. Under the 2022 Plan, shares of our common stock will be initially reserved for issuance pursuant to a variety of stock-based compensation awards, including stock options, stock appreciation rights, or SARs, restricted stock awards, restricted stock unit awards and other stock-based awards. The number of shares initially reserved for issuance or transfer pursuant to awards under the 2022 Plan will be increased by (i) the number of shares represented by awards outstanding under our Prior Plans, or Prior Plan Awards, that become available for issuance under the counting provisions described below following the effective date and (ii) an annual increase on each January 1 beginning in 2023 and ending in 2032, equal to the lesser of (A) % of the shares of our common stock outstanding (on an as converted basis) on the immediately preceding December 31 and (B) such smaller number of shares of stock as determined by our board of directors; provided, however, that no more than shares of stock may be issued upon the exercise of incentive stock options.

The following counting provisions will be in effect for the share reserve under the 2022 Plan:

- to the extent that an award (including a Prior Plan Award) terminates, expires or lapses for any reason or an award is settled in cash without the delivery of shares, any shares subject to the award at such time will be available for future grants under the 2022 Plan;
- to the extent shares are tendered or withheld to satisfy the grant, exercise price or tax withholding obligation with respect to any award under the 2022 Plan or Prior Plan Award, such tendered or withheld shares will be available for future grants under the 2022 Plan;
- to the extent shares subject to stock appreciation rights are not issued in connection with the stock settlement of stock appreciation rights on exercise thereof, such shares will be available for future grants under the 2022 Plan;

- to the extent that shares of our common stock are repurchased by us prior to vesting so that shares are returned to us, such shares will be available for future grants under the 2022 Plan;
- the payment of dividend equivalents in cash in conjunction with any outstanding awards or Prior Plan Awards will not be counted against the shares available for issuance under the 2022 Plan; and
- to the extent permitted by applicable law or any exchange rule, shares issued in assumption of, or in substitution for, any outstanding awards of any entity acquired in any form of combination by us or any of our subsidiaries will not be counted against the shares available for issuance under the 2022 Plan.

In addition, the sum of the grant date fair value of all equity-based awards and the maximum that may become payable pursuant to all cash-based awards to any individual for services as a non-employee director during any calendar year may not exceed $.

Administration. The compensation committee of our board of directors is expected to administer the 2022 Plan unless our board of directors assumes authority for administration. The compensation committee must consist of at least three members of our board of directors, each of whom is intended to qualify as a "non-employee director" for purposes of Rule 16b-3 under the Exchange Act and an "independent director" within the meaning of the rules of the applicable stock exchange, or other principal securities market on which shares of our common stock are traded. The 2022 Plan provides that the board or compensation committee may delegate its authority to grant awards to employees other than executive officers and certain senior executives of the company to a committee consisting of one or more members of our board of directors or one or more of our officers, other than awards made to our non-employee directors, which must be approved by our full board of directors.

Subject to the terms and conditions of the 2022 Plan, the administrator has the authority to select the persons to whom awards are to be made, to determine the number of shares to be subject to awards and the terms and conditions of awards, and to make all other determinations and to take all other actions necessary or advisable for the administration of the 2022 Plan. The administrator is also authorized to adopt, amend or rescind rules relating to administration of the 2022 Plan. Our board of directors may at any time remove the compensation committee as the administrator and revest in itself the authority to administer the 2022 Plan. The full board of directors will administer the 2022 Plan with respect to awards to non-employee directors.

Eligibility. Options, SARs, restricted stock and all other stock-based and cash-based awards under the 2022 Plan may be granted to individuals who are then our officers, employees or consultants or are the officers, employees or consultants of certain of our subsidiaries. Such awards also may be granted to our directors. Only employees of our company or certain of our subsidiaries may be granted incentive stock options, or ISOs.

Awards. The 2022 Plan provides that the administrator may grant or issue stock options, SARs, restricted stock, restricted stock units, other stock- or cash-based awards and dividend equivalents, or any combination thereof. Each award will be set forth in a separate agreement with the person receiving the award and will indicate the type, terms and conditions of the award.

- *Nonstatutory Stock Options*, or NSOs, will provide for the right to purchase shares of our common stock at a specified price which may not be less than fair market value on the date of grant, and usually will become exercisable (at the discretion of the administrator) in one or more installments after the grant date, subject to the participant's continued employment or service with us and/or subject to the satisfaction of corporate performance targets and individual performance targets established by the administrator. NSOs may be granted for any term specified by the administrator that does not exceed ten years.
- *Incentive Stock Options*, or ISOs, will be designed in a manner intended to comply with the provisions of Section 422 of the Code, and will be subject to specified restrictions contained in the Code. Among such restrictions, ISOs must have an exercise price of not less than the fair market value of a share of common stock on the date of grant, may only be granted to employees, and must not be exercisable

after a period of ten years measured from the date of grant. In the case of an ISO granted to an individual who owns (or is deemed to own) at least 10% of the total combined voting power of all classes of our capital stock, the 2022 Plan provides that the exercise price must be at least 110% of the fair market value of a share of common stock on the date of grant and the ISO must not be exercisable after a period of five years measured from the date of grant.

- *Restricted Stock* may be granted to any eligible individual and made subject to such restrictions as may be determined by the administrator. Restricted stock, typically, may be forfeited for no consideration or repurchased by us at the original purchase price if the conditions or restrictions on vesting are not met. In general, restricted stock may not be sold or otherwise transferred until restrictions are removed or expire. Purchasers of restricted stock, unlike recipients of options, will have voting rights and will have the right to receive dividends, if any, prior to the time when the restrictions lapse, however, extraordinary dividends will generally be placed in escrow, and will not be released until restrictions are removed or expire.
- *Restricted Stock Units* may be awarded to any eligible individual, typically without payment of consideration, but subject to vesting conditions based on continued employment or service or on performance criteria established by the administrator. Like restricted stock, restricted stock units may not be sold, or otherwise transferred or hypothecated, until vesting conditions are removed or expire. Unlike restricted stock, stock underlying restricted stock units will not be issued until the restricted stock units have vested, and recipients of restricted stock units generally will have no voting or dividend rights prior to the time when vesting conditions are satisfied.
- *Stock Appreciation Rights*, or SARs, may be granted in connection with stock options or other awards, or separately. SARs granted in connection with stock options or other awards typically will provide for payments to the holder based upon increases in the price of our common stock over a set exercise price. The exercise price of any SAR granted under the 2022 Plan must be at least 100% of the fair market value of a share of our common stock on the date of grant. SARs under the 2022 Plan will be settled in cash or shares of our common stock, or in a combination of both, at the election of the administrator.
- *Other Stock or Cash Based Awards* are awards of cash, fully vested shares of our common stock and other awards valued wholly or partially by referring to, or otherwise based on, shares of our common stock. Other stock or cash based awards may be granted to participants and may also be available as a payment form in the settlement of other awards, as standalone payments and as payment in lieu of base salary, bonus, fees or other cash compensation otherwise payable to any individual who is eligible to receive awards. The plan administrator will determine the terms and conditions of other stock or cash based awards, which may include vesting conditions based on continued service, performance and/or other conditions.
- *Dividend Equivalents* represent the right to receive the equivalent value of dividends paid on shares of our common stock and may be granted alone or in tandem with awards other than stock options or SARs. Dividend equivalents are credited as of dividend payments dates during the period between a specified date and the date such award terminates or expires, as determined by the plan administrator. In addition, dividend equivalents with respect to shares covered by a performance award will only be paid to the participant at the same time or times and to the same extent that the vesting conditions, if any, are subsequently satisfied and the performance award vests with respect to such shares.

Any award may be granted as a performance award, meaning that the award will be subject to vesting and/or payment based on the attainment of specified performance goals.

Change in Control. In the event of a change in control, unless the plan administrator elects to terminate an award in exchange for cash, rights or other property, or cause an award to accelerate in full prior to the change in control, such award will continue in effect or be assumed or substituted by the acquirer, provided that any performance-based portion of the award will be subject to the terms and conditions of the applicable award

agreement. The administrator may also make appropriate adjustments to awards under the 2022 Plan and is authorized to provide for the acceleration, cash-out, termination, assumption, substitution or conversion of such awards in the event of a change in control or certain other unusual or nonrecurring events or transactions.

Adjustments of Awards. In the event of any stock dividend or other distribution, stock split, reverse stock split, reorganization, combination or exchange of shares, merger, consolidation, split-up, spin-off, recapitalization, repurchase or any other corporate event affecting the number of outstanding shares of our common stock or the share price of our common stock that would require adjustments to the 2022 Plan or any awards under the 2022 Plan in order to prevent the dilution or enlargement of the potential benefits intended to be made available thereunder, the administrator will make appropriate, proportionate adjustments to: (i) the aggregate number and type of shares subject to the 2022 Plan; (ii) the number and kind of shares subject to outstanding awards and terms and conditions of outstanding awards (including, without limitation, any applicable performance targets or criteria with respect to such awards); and (iii) the grant or exercise price per share of any outstanding awards under the 2022 Plan.

Amendment and Termination. The administrator may terminate, amend or modify the 2022 Plan at any time and from time to time. However, we must generally obtain stockholder approval to the extent required by applicable law, rule or regulation (including any applicable stock exchange rule). Notwithstanding the foregoing, an option may be amended to reduce the per share exercise price below the per share exercise price of such option on the grant date and options may be granted in exchange for, or in connection with, the cancellation or surrender of options having a higher per share exercise price without receiving additional stockholder approval.

No incentive stock options may be granted pursuant to the 2022 Plan after the tenth anniversary of the effective date of the 2022 Plan, and no additional annual share increases to the 2022 Plan's aggregate share limit will occur from and after such anniversary. Any award that is outstanding on the termination date of the 2022 Plan will remain in force according to the terms of the 2022 Plan and the applicable award agreement.

2020 Equity Incentive Plan

We currently maintain the 2020 Plan, which was adopted by our board of directors in January 2020. We have previously granted stock options to our NEOs under the 2020 Plan, as described in more detail above. The principal purpose of the 2020 Plan is to is to enhance our ability to attract, retain and motivate persons who make (or are expected to make) important contributions to us by providing them with equity ownership opportunities.

Following the completion of this offering, we will not make any further grants under the 2020 Plan. However, the 2020 Plan will continue to govern the terms and conditions of the outstanding awards granted under the 2020 Plan which, as of the date of this prospectus, constitute outstanding stock options and restricted stock awards.

Eligibility. The 2020 Plan provides for the grant of non-qualified options, restricted stock, restricted stock units or other stock-based awards to employees, non-employee members of the board of directors and consultants. The 2020 Plan provides for the grant of ISOs to employees.

Share Reserve. We have reserved an aggregate of shares of our common stock for issuance under the 2020 Plan. As of September 30, 2021, options to purchase a total of shares of our common stock were issued and outstanding, a total of shares of common stock had been issued upon the exercise of options or pursuant to other awards granted under the 2020 Plan and were outstanding, and shares remained available for future grants.

Administration. Our board of directors or a committee appointed by our board of directors administers the 2020 Plan. The administrator has the authority to select the service providers to whom equity awards will be granted under the 2020 Plan, the number of shares to be subject to those awards under the 2020 Plan, and the

terms and conditions of the awards granted. In addition, the administrator has the authority to construe and interpret the 2020 Plan and to adopt rules for the administration, interpretation and application of the 2020 Plan that are consistent with the terms of the 2020 Plan.

Awards. The 2020 Plan provides that the administrator may grant or issue stock options, restricted stock, restricted stock units or stock awards, or any combination thereof. Each award will be set forth in a separate agreement with the person receiving the award and will indicate the type, terms and conditions of the award.

- NSOs will provide for the right to purchase shares of our common stock at a specified price which shall be not less than fair market value on the date of grant, and usually will become exercisable (at the discretion of the administrator) in one or more installments after the grant date, subject to the participant's continued employment or service with us. NSOs may be granted for any term specified by the administrator, but in no event more than 10 years after they are granted.
- ISOs will be designed in a manner intended to comply with the provisions of Section 422 of the Code, and will be subject to specified restrictions contained in the Code. Among such restrictions, ISOs must have an exercise price of not less than the fair market value of a share of common stock on the date of grant (or 110% for an individual who owns (or is deemed to own) more than 10% of the total combined voting power of all classes of our capital stock), may only be granted to employees, and must not be exercisable after a period of ten years measured from the date of grant (or five years for an individual who owns (or is deemed to own) more than 10% of the total combined voting power of all classes of our capital stock).
- Restricted Stock may be granted to any eligible individual and made subject to such restrictions as may be determined by the administrator, including whether there is any purchase price. Restricted stock, typically, may be forfeited for no consideration or repurchased by us at the original purchase price if the conditions or restrictions on vesting are not met. In general, restricted stock may not be sold or otherwise transferred until restrictions are removed or expire. Recipients of restricted stock awards will generally have rights equivalent to those of a stockholder with respect to such shares upon grant without regard to vesting.
- Restricted stock units are units representing an amount equal to the fair market value of one share of our common stock. The administrator determines the terms and conditions of restricted stock units including the vesting criteria, which may include accomplishing specified performance criteria or continued service to us, and the form and timing of payment. Notwithstanding the foregoing, the administrator, in its sole discretion may accelerate the time at which any restrictions will lapse or be removed.
- Stock Awards are awards of shares of our common stock and other awards valued wholly or partially by referring to, or otherwise based on, shares of our common stock. Stock awards may be granted to participants as standalone payments and as payment in lieu of base salary, bonus, fees or other cash compensation otherwise payable to any individual who is eligible to receive awards. The plan administrator will determine the terms and conditions of stock awards.

Transfer. A participant may not transfer stock awards under our 2020 Plan other than by will, the laws of descent and distribution, or as otherwise provided under our 2020 Plan.

Certain Events. In the event of any dividend or other distribution, reorganization, merger, consolidation, combination, repurchase, recapitalization, liquidation, dissolution, or sale, transfer, exchange or other disposition of all or substantially all of the assets of the Company, or sale of exchange of our common stock or other securities, issuance of warrants or other rights to purchase common stock, or any other corporate transaction or event affecting the common stock that would require adjustments to the 2020 Plan or any awards under the 2020 Plan in order to prevent the dilution or enlargement of the potential benefits intended to be made available thereunder, the administrator will make appropriate, proportionate adjustments to: (i) the aggregate number and kind of shares with respect to which awards may be granted or awarded under the 2020 Plan; (ii) the number and

kind of shares subject to outstanding awards and terms and conditions of outstanding awards (including, without limitation, any applicable performance targets or criteria with respect to such awards); and (iii) the grant or exercise price per share of any outstanding awards under the 2020 Plan.

In the event of any transaction or event described above (including any change in control), the administrator may make appropriate adjustments to awards under the 2020 Plan and is authorized to provide for the acceleration, cash-out, termination, assumption, substitution or conversion of such awards in the event of a change in control or certain other unusual or nonrecurring events or transactions or to comply with changes in applicable laws or accounting principles.

Amendment; Termination. Our board of directors may amend or terminate the 2020 Plan or any portion thereof at any time; an amendment of the 2020 Plan shall be subject to the approval of our stockholders only to the extent required by applicable laws. As described above, the 2020 Plan will terminate when the 2022 Plan is effective. No awards may be granted under our 2020 Plan after it is terminated.

2015 Equity Incentive Plan

We previously had assumed the 2015 Plan as part of a transaction involving the acquisition of BlackThorn Therapeutics, Inc. in 2020. We have previously granted stock options to Mr. Berns under the 2015 Plan, as described in more detail above. The principal purpose of the 2015 Plan is to enhance our ability to attract, retain and motivate persons who make (or are expected to make) important contributions to us by providing them with equity ownership opportunities.

The 2015 Plan was suspended in connection with the closing of the acquisition of BlackThorn in September 2020, and we will not make any further grants under the 2015 Plan. However, the 2015 Plan will continue to govern the terms and conditions of the outstanding awards granted under the 2015 Plan which, as of the date of this prospectus, constitute outstanding stock options and restricted stock awards.

Eligibility. The 2015 Plan provides for the grant of non-qualified options, restricted stock, restricted stock units or other stock-based awards to employees, non-employee members of the board of directors and consultants. The 2015 Plan provides for the grant of ISOs to employees.

Share Reserve. We have reserved an aggregate of shares of our common stock for issuance under the 2015 Plan. As of September 30, 2021, options to purchase a total of shares of our common stock were issued and outstanding, a total of shares of common stock had been issued upon the exercise of options or pursuant to other awards granted under the 2015 Plan and were outstanding, and shares remained available for future grants.

Administration. Our board of directors or a committee appointed by our board of directors administers the 2015 Plan. The administrator has the authority to select the service providers to whom equity awards will be granted under the 2015 Plan, the number of shares to be subject to those awards under the 2015 Plan, and the terms and conditions of the awards granted. In addition, the administrator has the authority to construe and interpret the 2015 Plan and to adopt rules for the administration, interpretation and application of the 2015 Plan that are consistent with the terms of the 2015 Plan.

Awards. The 2015 Plan provides that the administrator may grant or issue stock options, restricted stock, restricted stock units or stock awards, or any combination thereof. Each award will be set forth in a separate agreement with the person receiving the award and will indicate the type, terms and conditions of the award.

- NSOs will provide for the right to purchase shares of our common stock at a specified price which shall be not less than fair market value on the date of grant, and usually will become exercisable (at the discretion of the administrator) in one or more installments after the grant date, subject to the participant's continued employment or service with us. NSOs may be granted for any term specified by the administrator, but in no event more than 10 years after they are granted.

- ISOs will be designed in a manner intended to comply with the provisions of Section 422 of the Code, and will be subject to specified restrictions contained in the Code. Among such restrictions, ISOs must have an exercise price of not less than the fair market value of a share of common stock on the date of grant (or 110% for an individual who owns (or is deemed to own) more than 10% of the total combined voting power of all classes of our capital stock), may only be granted to employees, and must not be exercisable after a period of ten years measured from the date of grant (or five years for an individual who owns (or is deemed to own) more than 10% of the total combined voting power of all classes of our capital stock).
- Restricted Stock may be granted to any eligible individual and made subject to such restrictions as may be determined by the administrator, including whether there is any purchase price. Restricted stock, typically, may be forfeited for no consideration or repurchased by us at the original purchase price if the conditions or restrictions on vesting are not met. In general, restricted stock may not be sold or otherwise transferred until restrictions are removed or expire. Recipients of restricted stock awards will generally have rights equivalent to those of a stockholder with respect to such shares upon grant without regard to vesting.
- Restricted stock units are units representing an amount equal to the fair market value of one share of our common stock. The administrator determines the terms and conditions of restricted stock units including the vesting criteria, which may include accomplishing specified performance criteria or continued service to us, and the form and timing of payment. Notwithstanding the foregoing, the administrator, in its sole discretion may accelerate the time at which any restrictions will lapse or be removed.
- Stock Awards are awards of shares of our common stock and other awards valued wholly or partially by referring to, or otherwise based on, shares of our common stock. Stock awards may be granted to participants as standalone payments and as payment in lieu of base salary, bonus, fees or other cash compensation otherwise payable to any individual who is eligible to receive awards. The plan administrator will determine the terms and conditions of stock awards.

Transfer. A participant may not transfer stock awards under our 2015 Plan other than by will, the laws of descent and distribution, or as otherwise provided under our 2015 Plan.

Certain Events. In the event of any dividend or other distribution, reorganization, merger, consolidation, combination, repurchase, recapitalization, liquidation, dissolution, or sale, transfer, exchange or other disposition of all or substantially all of the assets of the Company, or sale of exchange of our common stock or other securities, issuance of warrants or other rights to purchase common stock, or any other corporate transaction or event affecting the common stock that would require adjustments to the 2015 Plan or any awards under the 2015 Plan in order to prevent the dilution or enlargement of the potential benefits intended to be made available thereunder, the administrator will make appropriate, proportionate adjustments to: (i) the aggregate number and kind of shares with respect to which awards may be granted or awarded under the 2015 Plan; (ii) the number and kind of shares subject to outstanding awards and terms and conditions of outstanding awards (including, without limitation, any applicable performance targets or criteria with respect to such awards); and (iii) the grant or exercise price per share of any outstanding awards under the 2015 Plan.

In the event of any transaction or event described above (including any change in control), the administrator may make appropriate adjustments to awards under the 2015 Plan and is authorized to provide for the acceleration, cash-out, termination, assumption, substitution or conversion of such awards in the event of a change in control or certain other unusual or nonrecurring events or transactions or to comply with changes in applicable laws or accounting principles. In the event a change in control occurs and the successor corporation refuses to assume or substitute for outstanding awards under the 2015 Plan, then the vesting of such awards (if held by a current service provider) will be fully accelerated immediately prior to the closing of such change in control, and such awards will terminate upon expiration of such period in exchange for a cash payment similar to

holders of common stock in the transaction determined by reference to the number of shares subject to such awards and net of any applicable exercise price.

Amendment; Termination. Our board of directors has the authority to amend, suspend or terminate our 2015 Plan, provided that such action is approved by our stockholders to the extent stockholder approval is necessary. As described above, our 2015 Plan was suspended in connection with the closing of the acquisition of BlackThorn in September 2020.

2022 Employee Stock Purchase Plan

We intend to adopt and ask our stockholders to approve the 2022 Employee Stock Purchase Plan, which we refer to as our ESPP, which will be effective upon the day prior to the first public trading date of our common stock. The ESPP is designed to allow our eligible employees to purchase shares of our common stock, at semi-annual intervals, with their accumulated payroll deductions. The ESPP is intended to qualify under Section 423 of the Code. The material terms of the ESPP, as it is currently contemplated, are summarized below.

Components. The ESPP is comprised of two distinct components in order to provide increased flexibility to grant options to purchase shares under the ESPP to U.S. and to non-U.S. employees. Specifically, the ESPP authorizes (1) the grant of options to U.S. employees that are intended to qualify for favorable U.S. federal tax treatment under Section 423 of the Code, (the Section 423 Component), and (2) the grant of options that are not intended to be tax-qualified under Section 423 of the Code to facilitate participation for employees located outside of the United States who do not benefit from favorable U.S. tax treatment and to provide flexibility to comply with non-U.S. law and other considerations (the Non-Section 423 Component). Where possible under local law and custom, we expect that the Non-Section 423 Component generally will be operated and administered on terms and conditions similar to the Section 423 Component.

Administration. Subject to the terms and conditions of the ESPP, our compensation committee will administer the ESPP. Our compensation committee can delegate administrative tasks under the ESPP to the services of an agent and/or employees to assist in the administration of the ESPP. The administrator will have the discretionary authority to administer and interpret the ESPP. Interpretations and constructions of the administrator of any provision of the ESPP or of any rights thereunder will be conclusive and binding on all persons. We will bear all expenses and liabilities incurred by the ESPP administrator.

Share Reserve. The maximum number of shares of our common stock which will be authorized for sale under the ESPP is equal to the sum of (a) shares of common stock and (b) an annual increase on each January 1 beginning in 2023 and ending in 2032, equal to the lesser of (i) % of the shares of our common stock outstanding (on an as converted basis) on the immediately preceding December 31 and (ii) such number of shares of common stock as determined by our board of directors; provided, however, that no more than shares of our common stock may be issued under the ESPP. The shares reserved for issuance under the ESPP may be authorized but unissued shares or reacquired shares.

Eligibility. Employees eligible to participate in the ESPP for a given offering period generally include employees who are employed by us or one of our subsidiaries on the first day of the offering period, or the enrollment date. Our employees (and, if applicable, any employees of our subsidiaries) who customarily work less than five months in a calendar year or are customarily scheduled to work less than 20 hours per week will not be eligible to participate in the ESPP. Finally, an employee who owns (or is deemed to own through attribution) 5% or more of the combined voting power or value of all our classes of stock or of one of our subsidiaries will not be allowed to participate in the ESPP.

Participation. Employees will enroll under the ESPP by completing a payroll deduction form permitting the deduction from their compensation of at least 1% of their compensation but not more than 15% of their compensation. Such payroll deductions shall be expressed as a whole number percentage, and the accumulated

deductions will be applied to the purchase of shares on each purchase date. However, a participant may not purchase more than shares in each offering period and may not subscribe for more than $25,000 in fair market value of shares of our common stock (determined at the time the option is granted) during any calendar year. The ESPP administrator has the authority to change these limitations for any subsequent offering period.

Offering. Under the ESPP, participants are offered the option to purchase shares of our common stock at a discount during a series of successive offering periods, the duration and timing of which will be determined by the ESPP administrator. However, in no event may an offering period be longer than 27 months in length.

The option purchase price will be the lower of 85% of the closing trading price per share of our common stock on the first trading date of an offering period in which a participant is enrolled or 85% of the closing trading price per share on the purchase date, which will occur on the last trading day of each offering period.

Unless a participant has previously canceled his or her participation in the ESPP before the purchase date, the participant will be deemed to have exercised his or her option in full as of each purchase date. Upon exercise, the participant will purchase the number of whole shares that his or her accumulated payroll deductions will buy at the option purchase price, subject to the participation limitations listed above.

A participant may cancel his or her payroll deduction authorization at any time prior to the end of the offering period. Upon cancellation, the participant will have the option to either (i) receive a refund of the participant's account balance in cash without interest or (ii) exercise the participant's option for the current offering period for the maximum number of shares of common stock on the applicable purchase date, with the remaining account balance refunded in cash without interest. Following at least one payroll deduction, a participant may also decrease (but not increase) his or her payroll deduction authorization once during any offering period. If a participant wants to increase or decrease the rate of payroll withholding, he or she may do so effective for the next offering period by submitting a new form before the offering period for which such change is to be effective.

A participant may not assign, transfer, pledge or otherwise dispose of (other than by will or the laws of descent and distribution) payroll deductions credited to a participant's account or any rights to exercise an option or to receive shares of our common stock under the ESPP, and during a participant's lifetime, options in the ESPP shall be exercisable only by such participant. Any such attempt at assignment, transfer, pledge or other disposition will not be given effect.

Adjustments upon Changes in Recapitalization, Dissolution, Liquidation, Merger or Asset Sale. In the event of any increase or decrease in the number of issued shares of our common stock resulting from a stock split, reverse stock split, stock dividend, combination or reclassification of the common stock, or any other increase or decrease in the number of shares of common stock effected without receipt of consideration by us, we will proportionately adjust the aggregate number of shares of our common stock offered under the ESPP, the number and price of shares which any participant has elected to purchase under the ESPP and the maximum number of shares which a participant may elect to purchase in any single offering period. If there is a proposal to dissolve or liquidate us, then the ESPP will terminate immediately prior to the consummation of such proposed dissolution or liquidation, and any offering period then in progress will be shortened by setting a new purchase date to take place before the date of our dissolution or liquidation. We will notify each participant of such change in writing at least ten business days prior to the new exercise date. If we undergo a merger with or into another corporation or sell all or substantially all of our assets, each outstanding option will be assumed or an equivalent option substituted by the successor corporation or the parent or subsidiary of the successor corporation. If the successor corporation refuses to assume the outstanding options or substitute equivalent options, then any offering period then in progress will be shortened by setting a new purchase date to take place before the date of our proposed sale or merger. We will notify each participant of such change in writing at least ten business days prior to the new exercise date.

Amendment and Termination. Our board of directors may amend, suspend or terminate the ESPP at any time. However, the board of directors may not amend the ESPP without obtaining stockholder approval within 12 months before or after such amendment to the extent required by applicable laws.

CERTAIN RELATIONSHIPS AND RELATED-PARTY TRANSACTIONS

The following includes a summary of transactions since November 22, 2019 (our date of inception) and any currently proposed transactions, to which we were or are to be a participant, in which (i) the amount involved exceeded or will exceed $120,000; and (ii) any of our directors, executive officers or holders of more than 5% of our capital stock, or any affiliate or member of the immediate family of the foregoing persons, had or will have a direct or indirect material interest, other than compensation and other arrangements that are described under the sections titled “Director Compensation” and “Executive Compensation.”

We believe the terms obtained or consideration that we paid or received, as applicable, in connection with the transactions described below were comparable to terms available or the amounts that we would pay or receive, as applicable, in arm’s-length transactions.

Acquisitions

BlackThorn Therapeutics, Inc.

In connection with our acquisition of BlackThorn in September 2020, we issued (i) an aggregate of 45,178,495 shares of our Series A-1 convertible preferred stock (the Series A-1 Preferred), with an acquisition date fair value of $36.6 million and (ii) warrants to purchase 2,292,672 shares of the Series A-1 Preferred, with an acquisition date fair value of $0.7 million (the Preferred Stock Warrants). The Preferred Stock Warrants expire on the earlier of (i) December 31, 2021, (ii) immediately prior to the consummation of this offering and (iii) upon the closing of a deemed liquidation event. Certain of BlackThorn’s investors, funds affiliated with ARCH Venture Partners, and one of its board members, Kristina M. Burow, at the time of the acquisition are related parties of the Company.

Alairion, Inc.

In connection with our acquisition of Alairion in November 2020, Biomatics Capital Partners II L.P., an existing stockholder of both us and Alairion, purchased a total of $12.0 million of Alairion convertible notes immediately prior to the closing date that were settled with 12,000,000 shares of our Series A-2 convertible preferred stock upon closing.

Common Stock Issuance

In January 2020, we entered into a stock subscription agreement pursuant to which we issued 50,000,000 shares of our common stock at a price of $0.0001 per share to each of ARCH Venture Fund X, L.P. (ARCH X) and ARCH Venture Fund X Overage, L.P. (ARCH X Overage), for an aggregate of 100,000,000 shares of common stock issued. In August 2020, we repurchased 8,333,333 shares of common stock at a price of $0.0001 per share from each of ARCH X and ARCH X Overage, for an aggregate of 16,666,667 shares of common stock repurchased. The repurchased shares of common stock were cancelled and retired. Kristina Burow and Robert Nelsen, members of our board of directors, were designated to our board by ARCH Venture Partners, a holder of more than 5% of our capital stock. For further details, see the information provided in footnote (2) to the table in the section title “Principal Stockholders.”

Convertible Preferred Stock Financings

Convertible Note Purchase Agreement

Between February and September 2020, we issued $55.9 million in convertible promissory notes (the 2020 Bridge Notes), $30 million of which notes were issued to ARCH X and ARCH X Overage. In September 2020, the 2020 Bridge Notes were settled with shares of our Series A-2 convertible preferred stock.

Series A-2 Convertible Preferred Stock Financing

In September 2020, we entered into a Series A-2 convertible preferred stock purchase agreement (Series A-2 Purchase Agreement), with various investors, pursuant to which we issued an aggregate of 123,620,000 shares of our Series A-2 convertible preferred stock (the Series A-2 Preferred) at $1.00 per share for aggregate proceeds of $123.6 million in the initial closing. Upon the initial closing, the right of forfeiture for 44,008,327 shares of our common stock issued with the 2020 Bridge Notes lapsed.

In accordance with the terms of the Series A-2 Purchase Agreement, we also committed to selling 40,000,000 additional shares of Series A-2 Preferred to ARCH X, ARCH X Overage and their affiliates at a fixed price of $1.00 per share in one or more subsequent closings on or before March 8, 2021.

Further, pursuant to the Series A-2 Purchase Agreement, a forfeiture provision was added to the terms of 33,333,333 shares of our common stock previously issued in January 2020 to ARCH X, ARCH X Overage and their affiliates, of which 13,333,333 remain subject to a forfeiture provision as of December 31, 2020.

The table below sets forth the number of shares of our common stock, Series A-1 Preferred and Series A-2 Preferred purchased by our executive officers, directors, holders of more than 5% of our capital stock and their affiliated entities or immediate family members or issued to such parties as consideration in connection with various acquisitions of assets. Each share of Series A-1 Preferred and Series A-2 Preferred in the table below will convert into one share of our common stock upon the completion of this offering.

Name	Common Stock (#)	Series A-1 Convertible Preferred Stock (#)	Series A-2 Convertible Preferred Stock (#)	Aggregate Purchase Price ($)
Amgen Inc.	—	—	257,000,000	257,000,000
Entities affiliated with ARCH Venture Partners(1)	83,333,334	13,531,561	105,700,828	119,232,389
Entities affiliated with Biomatics Capital Partners	10,000,000	4,164,035	44,500,000	48,664,035
Entities affiliated with F-Prime Capital Partners(2)	15,000,000	—	28,463,722	28,463,722
SVF II AIV (DE) LLC.	—	—	60,000,000	60,000,000
Kristina M. Burow.	—	106,873	—	106,873

(1) Kristina Burow and Robert Nelsen, members of our board of directors, were designated to our board by ARCH Venture Partners. For further details, see the information provided in footnote (2) to the table in the section titled “Principal Stockholders.”

(2) Stacie Weninger, Ph.D., a member of our board of directors, was designated to our board by F-Prime Capital Partners.

Investors’ Rights Agreement

We are party to an investors’ rights agreement with the purchasers of our outstanding convertible preferred stock, including entities with which certain of our directors are affiliated. Following the consummation of this offering, the holders of approximately shares of our common stock, including the shares of common stock issuable upon the conversion of our convertible preferred stock, are entitled to rights with respect to the registration of their shares under the Securities Act. For a more detailed description of these registration rights, see the section titled “Description of Capital Stock—Registration Rights.” The investors’ rights agreement also provides for a right of first offer in favor of certain holders of convertible preferred stock with regard to certain issuances of our capital stock. The rights of first offer will not apply to, and will terminate upon the consummation of, this offering.

Voting Agreement

We are party to a voting agreement with certain holders of our common stock and convertible preferred stock. Upon the conversion of all outstanding shares of convertible preferred stock into common stock in

connection with the consummation of this offering, the voting agreement will terminate. For a description of the voting agreement, see the section titled "Management—Board Composition—Voting Arrangements."

Right of First Refusal and Co-Sale Agreement

We are party an amended and restated right of first refusal and co-sale agreement with certain holders of our common stock and convertible preferred stock. This agreement provides for rights of first refusal and co-sale relating to the shares of our common stock held by the parties to the agreement. Upon the consummation of this offering, the amended and restated right of first refusal and co-sale agreement will terminate.

Other Transactions

We have entered into offer letter agreements with our executive officers that, among other things, provide for certain compensatory and change in control benefits, as well as severance benefits. For a description of these agreements with our named executive officers, see the subsection titled "Executive Compensation—Executive Compensation Arrangements."

We have also granted stock options and restricted stock to our executive officers and certain of our directors. For a description of these equity awards, see the sections titled "Executive Compensation" and "Director Compensation."

Director and Officer Indemnification

We have entered into indemnification agreements with certain of our current executive officers and directors, and intend to enter into new indemnification agreements with each of our current executive officers and directors before the completion of this offering.

Our amended and restated certificate of incorporation also provides that, to the fullest extent permitted by law, we will indemnify any officer or director of our company against all damages, claims, and liabilities arising out of the fact that the person is or was our officer or director, or served any other enterprise at our request as an officer or director. Amending this provision will not reduce our indemnification obligations relating to actions taken before an amendment.

Related Person Transaction Policy

We have a written related-person transaction policy, to be effective upon the closing of this offering, that applies to our executive officers, directors, director nominees, holders of more than five percent of any class of our voting securities and any member of the immediate family of, and any entity affiliated with, any of the foregoing persons. Such persons will not be permitted to enter into a related person transaction with us without the prior consent of our audit committee, or other independent members of our board of directors in the event it is inappropriate for our audit committee to review such transaction due to a conflict of interest. Any request for us to enter into a transaction with an executive officer, director, director nominee, principal stockholder, or any of their immediate family members or affiliates, in which the amount involved exceeds $120,000 must first be presented to our audit committee for review, consideration, and approval. In approving or rejecting any such proposal, our audit committee will consider the relevant facts and circumstances available and deemed relevant to our audit committee, including, but not limited to, the commercial reasonableness of the terms of the transaction and the materiality and character of the related person's direct or indirect interest in the transaction. All of the transactions described in this section occurred prior to the adoption of this policy.

PRINCIPAL STOCKHOLDERS

The following table sets forth information regarding beneficial ownership of our common stock as of by:

- each person whom we know to beneficially own more than 5% of our common stock;
- each of our directors;
- each of our named executive officers; and
- all directors and executive officers as a group.

In accordance with the rules of the SEC, beneficial ownership includes voting or investment power with respect to securities and includes the shares issuable pursuant to stock options that are exercisable within 60 days of . Shares issuable pursuant to stock options are deemed outstanding for computing the percentage of the person holding such options but are not outstanding for computing the percentage of any other person.

We have based our calculation of the percentage of beneficial ownership prior to this offering on shares of our common stock outstanding and held of record by approximately stockholders as of , which gives effect to (i) the filing and effectiveness of our amended and restated certificate of incorporation; and (ii) the conversion of shares of all outstanding convertible preferred stock into shares of our common stock, as if such filing and effectiveness and conversion had taken place as of . We have based our calculation of the percentage of beneficial ownership after this offering on shares of our common stock outstanding as of , which gives effect to the adjustments described in the prior sentence and further reflects the issuance of shares of common stock in this offering, assuming that the underwriters will not exercise their option to purchase up to an additional shares of our common stock.

Unless otherwise indicated, the address for each listed stockholder is: c/o Neumora Therapeutics, Inc., 65 Grove Street, Watertown, Massachusetts 02472. To our knowledge, except as indicated in the footnotes to this table and pursuant to applicable community property laws, the persons named in the table have sole voting and investment power with respect to all shares of common stock.

		Percentage of Shares Beneficially Owned	
Name of Beneficial Owner	Number of Shares Beneficially Owned (#)	Before Offering (%)	After Offering (%)
Greater than 5% Owners:			
Amgen Inc.(1)			
Entities affiliated with ARCH Venture Partners(2)			
Entities affiliated with Biomatics Capital Partners(3)			
SVF II AIV (DE) LLC(4)			
Named Executive Officers and Directors:			
Paul Berns(5)			
Lori Lyons-Williams(6)			
Joshua Pinto, Ph.D.(7)			
Kristina M. Burow(8)			
Matthew Fust(9)			
Maykin Ho, Ph.D.(10)			
Robert Nelsen(2)			
Kári Stefánsson, M.D.			
Stacie Weninger, Ph.D.			
All executive officers and directors as a group (15 persons)(11)			

* Less than 1%.

(1) Consists of shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock. Investment and voting decisions for Amgen Inc. are made by an investment committee comprised of three or more

individuals, and therefore no individual is the beneficial owner of the shares held by Amgen Inc. The address of Amgen Inc. is One Amgen Center Drive, Thousand Oaks, California 91320.

(2) Consists of (i) shares of common stock held by ARCH Venture Fund X, L.P. (ARCH X), (ii) shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock held by ARCH X, (iii) shares of common stock held by ARCH Venture Fund X, Overage, L.P. (ARCH X Overage), (iv) shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock held by ARCH X Overage, (v) shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock held by ARCH Venture Partners X, L.P. (AVP X LP), (vi) shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock held by ARCH Venture Partners X, Overage L.P. (AVP X Overage LP), (vii) shares of common stock issuable upon the conversion of Series A-1 convertible preferred stock held by ARCH Venture Fund VII, L.P. (ARCH VII) and (viii) of common stock issuable upon the conversion of Series A-2 convertible preferred stock held by ARCH Venture Fund VIII Overage, L.P. (ARCH VIII Overage). AVP X LP is the sole general partner of ARCH X. AVP X Overage LP is the sole general partner of ARCH X Overage. ARCH Venture Partners X, LLC (AVP X LLC) is the sole general partner of each of AVP X LP and AVP X Overage LP. ARCH Venture Partners VII, L.P. (AVP VII LP), is the sole general partner of ARCH VII and ARCH Venture Partners VII, LLC (AVP VII LLC), is the sole general partner of AVP VII LP. ARCH Venture Partners VIII, LLC (AVP VIII LLC), is the general partner of ARCH VIII Overage. Keith Crandell, Kristina Burow, Steven Gillis and Robert Nelsen comprise the investment committee of AVP X LLC (the AVP X Committee Members). AVP X LLC may be deemed to beneficially own the shares held by ARCH X and ARCH X Overage, and each of the AVP X Committee Members may be deemed to share the power to direct the disposition and vote of the shares held by ARCH X and ARCH X Overage. Clinton Bybee, Keith Crandell and Robert Nelsen comprise the investment committee of AVP VII LLC (AVP VII LLC Committee Members). AVP VII LLC may be deemed to beneficially own the shares held by ARCH VII, and each of the AVP VII LLC Committee Members may be deemed to share the power to direct the disposition and vote of the shares held by ARCH VII. Clinton Bybee, Keith Crandell and Robert Nelsen comprise the investment committee of AVP VIII LLC (the AVP VIII LLC Committee Members). AVP VIII LLC may be deemed to beneficially own the shares held by ARCH VIII Overage, and each of the AVP VIII LLC Committee Members may be deemed to share the power to direct the disposition and vote of the shares held by ARCH VIII Overage. AVP X Committee Members, AVP VII LLC Committee Members and AVP VIII LLC Committee Members each disclaim beneficial ownership except to the extent of their pecuniary interest therein, if any. Further, Paul Berns does not have dispositive control over any of our shares held beneficially by AVP X LLC, ARCH VII LLC and ARCH VIII LLC. The address of ARCH Venture Partners is 1700 Owens Street, Suite 535, San Francisco, California 94158.

(3) Consists of (i) shares of common stock held by Biomatics Capital Partners, L.P. (Biomatics), (ii) shares of common stock issuable upon the conversion of Series A-1 convertible preferred stock held by Biomatics, (iii) shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock held by Biomatics, (iv) shares of common stock held by Biomatics Capital Partners II L.P. (Biomatics II, and together with Biomatics, Biomatics Capital Partners) and (v) shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock held by Biomatics II. Biomatics Capital Management, L.L.C. (Biomatics LLC) is the managing partner of Biomatics and Biomatics II. Julie Sunderland and Boris Nikolic are the general managers of Biomatics LLC (the Biomatics LLC Committee Members). Biomatics LLC may be deemed to beneficially own the shares held Biomatics and Biomatics II, and each of the Biomatics LLC Committee Members may be deemed to share the power to direct the disposition and vote of the shares held by Biomatics and Biomatics II. The Biomatics LLC Committee Members each disclaim beneficial ownership except to the extent of their pecuniary interest therein, if any. The address of Biomatics Capital Partners is 188 E. Blaine Street, Suite 126, Seattle, Washington 98102.

(4) Consists of shares of common stock issuable upon the conversion of Series A-2 convertible preferred stock. The address of SVF II AIV (DE) LLC is 69 Grosvenor Street, London, W1K 3JP, United Kingdom.

(5) Consists of shares of common stock held directly by Mr. Berns.

(6) Consists of (i) shares of common stock held directly by Ms. Lyons-Williams and (ii) shares issuable pursuant to stock options exercisable within 60 days of .

(7) Consists of (i) shares of common stock held directly by Dr. Pinto and (ii) shares issuable pursuant to stock options exercisable within 60 days of .

(8) See Footnote (2) above. Also consists of shares of common stock issuable upon the conversion of Series A-1 convertible preferred stock.

(9) Consists of shares issuable pursuant to stock options exercisable within 60 days of .

(10) Consists of shares issuable pursuant to stock options exercisable within 60 days of .

(11) Consists of (i) shares of common stock issuable upon the conversion of Series A-1 convertible preferred stock, (ii) shares of common stock and (iii) shares issuable pursuant to stock options exercisable within 60 days of .

DESCRIPTION OF CAPITAL STOCK

The following summary describes our capital stock and the material provisions of our amended and restated certificate of incorporation and our amended and restated bylaws, which will become effective immediately prior to the completion of this offering, the investors' rights agreement to which we and certain of our stockholders are parties and of the Delaware General Corporation Law. Because the following is only a summary, it does not contain all of the information that may be important to you. For a complete description, you should refer to our amended and restated certificate of incorporation, amended and restated bylaws and investors' rights agreement, copies of which have been filed as exhibits to the registration statement of which this prospectus is part.

General

Upon the completion of this offering and the filing of our amended and restated certificate of incorporation, our authorized capital stock will consist of shares of common stock, par value $0.0001 per share, and shares of preferred stock, par value $0.0001 per share.

Common Stock

Outstanding Shares

As of September 30, 2021, we had shares of common stock outstanding, held of record by stockholders, assuming the conversion of all of our outstanding shares of convertible preferred stock into shares of common stock immediately prior to the completion of this offering.

Voting Rights

Each holder of common stock is entitled to one vote for each share on all matters submitted to a vote of the stockholders, including the election of directors. Our stockholders do not have cumulative voting rights in the election of directors. Accordingly, holders of a majority of the voting shares are able to elect all of the directors. In addition, the affirmative vote of holders of 66-2/3% of the voting power of all of the then outstanding voting stock will be required to take certain actions, including amending certain provisions of our amended and restated certificate of incorporation, including the provisions relating to amending our amended and restated bylaws, the classified board and director liability.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of our common stock are entitled to receive dividends as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of our common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities, subject to the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

Rights, Preferences and Privileges

Holders of our common stock have no preemptive, conversion or subscription rights, and there are no redemption or sinking fund provisions applicable to our common stock. The rights, preferences and privileges of the holders of our common stock are subject to, and may be adversely affected by, the rights of the holders of shares of any series of our preferred stock that we may designate and issue in the future.

Fully Paid and Nonassessable

All of our outstanding shares of common stock are, and the shares of common stock to be issued in this offering will be, fully paid and nonassessable.

Preferred Stock

Upon the completion of this offering, all of our currently outstanding shares of convertible preferred stock will convert into common stock and we will not have any shares of preferred stock outstanding. Immediately prior to the completion of this offering, our amended and restated certificate of incorporation will be amended and restated to delete all references to such shares of convertible preferred stock. From and after the consummation of this offering, our board of directors will have the authority, without further action by our stockholders, to issue up to shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, terms of redemption, liquidation preferences, sinking fund terms and the number of shares constituting, or the designation of, such series, any or all of which may be greater than the rights of our common stock. The issuance of our preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon our liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing a change in control of our company or other corporate action. Immediately after consummation of this offering, no shares of preferred stock will be outstanding, and we have no present plan to issue any shares of preferred stock.

Stock Options

As of September 30, 2021, we had outstanding options to purchase an aggregate of shares of our common stock, with a weighted-average exercise price of $ per share. For additional information regarding terms of our equity incentive plans, see the section titled “Executive Compensation—Equity Compensation Plans.”

Registration Rights

Upon the completion of this offering and subject to the lock-up agreements entered into in connection with this offering and federal securities laws, certain holders of shares of our common stock, including those shares of our common stock that will be issued upon the conversion of our convertible preferred stock in connection with this offering, will initially be entitled to certain rights with respect to registration of such shares under the Securities Act. These shares are referred to as registrable securities. The holders of these registrable securities possess registration rights pursuant to the terms of our investors’ rights agreement and are described in additional detail below. The registration of shares of our common stock pursuant to the exercise of the registration rights described below would enable the holders to trade these shares without restriction under the Securities Act when the applicable registration statement is declared effective. We will pay the registration expenses, other than underwriting discounts, selling commissions and stock transfer taxes, of the shares registered pursuant to the demand, piggyback and Form S-3 registrations described below.

Generally, in an underwritten offering, the managing underwriter, if any, has the right, subject to specified conditions and limitations, to limit the number of shares the holders may include. The demand, piggyback and Form S-3 registration rights described below will terminate upon the earliest of (i) with respect to each stockholder, such date, on or after the closing of this offering, on which all registrable shares held by such stockholder may immediately be sold during any 90-day period pursuant to Rule 144 of the Securities Act, or Rule 144 and (ii) the occurrence of a deemed liquidation event, as defined in our amended and restated certificate of incorporation, as currently in effect.

Demand Registration Rights

Upon the completion of this offering, holders of approximately shares of our common stock issuable upon conversion of outstanding convertible preferred stock will be entitled to certain demand registration rights. Beginning 180 days following the effectiveness of the registration statement of which this prospectus is a part, certain major investors holding, collectively, holding at least 40% of registrable securities may, on not more than two occasions, request that we register all or a portion of their shares, subject to certain specified exceptions. If any of these holders exercises its demand registration rights, then holders of approximately shares of our common stock issuable upon the shares of our convertible preferred stock in connection with this offering will be entitled to register their shares, subject to specified conditions and limitations in the corresponding offering.

Piggyback Registration Rights

In connection with this offering, holders of approximately shares of our common stock issuable upon conversion of outstanding convertible preferred stock are entitled to their rights to notice of this offering and to include their shares of registrable securities in this offering. The requisite percentage of these stockholders are expected to waive all such stockholders' rights to notice of this offering and to include their shares of registrable securities in this offering. In the event that we propose to register any of our securities under the Securities Act in another offering, either for our own account or for the account of other security holders, the holders of registrable securities will be entitled to certain "piggyback" registration rights allowing them to include their shares in such registration, subject to specified conditions and limitations.

S-3 Registration Rights

Upon the completion of this offering, the holders of approximately shares of our common stock issuable upon conversion of outstanding convertible preferred stock will initially be entitled to certain Form S-3 registration rights. Certain major investors holding at least 20% of registrable securities may, on not more than two registrations on Form S-3 within any 12-month period, request that we register all or a portion of their shares on Form S-3 if we are qualified to file a registration statement on Form S-3, subject to specified exceptions. Such request for registration on Form S-3 must cover securities with an aggregate offering price which equals or exceeds $5.0 million, net of selling expenses. The right to have such shares registered on Form S-3 is further subject to other specified conditions and limitations.

Election and Removal of Directors; Vacancies

The exact number of directors will be fixed from time to time by resolution of the board. Directors will be elected by a plurality of the votes of the shares of our capital stock present in person or represented by proxy at the meeting and entitled to vote on the election of directors.

No director may be removed except for cause, and directors may be removed for cause only by an affirmative vote of shares representing not less than a majority of the shares then entitled to vote at an election of directors.

Any vacancy occurring on the board of directors and any newly created directorship may be filled only by a majority of the remaining directors in office.

Staggered Board

Upon the closing of this offering, our board of directors will be divided into three classes serving staggered three-year terms. Class I, Class II, and Class III directors will serve until our annual meetings of stockholders in 202 , 202 and 202 , respectively. At each annual meeting of stockholders, directors will be elected to succeed the class of directors whose terms have expired. This classification of our board of directors could have the effect of increasing the length of time necessary to change the composition of a majority of the board of directors. In general, at least two annual meetings of stockholders will typically be necessary for stockholders to effect a change in a majority of the members of the board of directors.

Limitation on Action by Written Consent

Our amended and restated certificate of incorporation and our amended and restated bylaws provide that holders of our common stock will not be able to act by written consent without a meeting.

Stockholder Meetings

Our amended and restated certificate of incorporation and our amended and restated bylaws provide that special meetings of our stockholders may be called only by the chairman of the board, our chief executive officer (or president, in the absence of a chief executive officer) or a majority of the directors. Our amended and restated certificate of incorporation and our amended and restated bylaws specifically deny any power of any other person to call a special meeting.

Amendment of Certificate of Incorporation

The provisions of our amended and restated certificate of incorporation described under the subsections titled "—Election and Removal of Directors; Vacancies," "—Stockholder Meetings," "—Limitation on Action by Written Consent," "—Limitation of Liability of Directors and Officers," "—Common Stock—Voting Rights" and "—Forum Selection" and provisions relating to amendments to our amended and restated certificate of incorporation may be amended only by the affirmative vote of holders of at least 66-2/3% of the voting power of our outstanding shares of voting stock. The affirmative vote of holders of at least a majority of the voting power of our outstanding shares of stock will generally be required to amend other provisions of our amended and restated certificate of incorporation.

Amendment of Bylaws

Certain provisions of our amended and restated bylaws may generally be altered, amended, or repealed, and new bylaws may be adopted, with the affirmative vote of a majority of directors present at any regular or special meeting of the board of directors called for that purpose, provided that any alteration, amendment, or repeal of, or adoption of any bylaw inconsistent with specified provisions of the bylaws, including those related to special and annual meetings of stockholders, action of stockholders by written consent, nomination of directors, transfers of capital stock and dividends requires the affirmative vote of at least 66-2/3% of all directors in office at a meeting called for that purpose.

All other provisions of our amended and restated bylaws may generally be altered, amended, or repealed, and new bylaws may be adopted, with the affirmative vote of holders of 66-2/3 % of the voting power of our outstanding shares of voting stock.

Other Limitations on Stockholder Actions

Our amended and restated bylaws impose some procedural requirements on stockholders who wish to:

- make nominations in the election of directors;
- propose that a director be removed;
- propose any repeal or change in our amended and restated bylaws; or
- propose any other business to be brought before an annual or special meeting of stockholders.

Under these procedural requirements, in order to bring a proposal before a meeting of stockholders, a stockholder must deliver timely notice of a proposal pertaining to a proper subject for presentation at the meeting to our corporate secretary along with the following:

- a description of the business or nomination to be brought before the meeting and the reasons for conducting such business at the meeting;
- the stockholder's name and address;
- any material interest of the stockholder in the proposal;
- the number of shares beneficially owned by the stockholder and evidence of such ownership; and
- the names and addresses of all persons with whom the stockholder is acting in concert and a description of all arrangements and understandings with those persons, and the number of shares such persons beneficially own.

To be timely, a stockholder must generally deliver notice:

- in connection with an annual meeting of stockholders, not less than 120 nor more than 150 days prior to the date on which the annual meeting of stockholders was held in the immediately preceding year, but in the event that the date of the annual meeting is more than 30 days before or more than 70 days after the anniversary date of the preceding annual meeting of stockholders, a stockholder notice will be timely if received by us not later than the close of business on the later of (i) not less than 70 nor more than 120 days prior to the date of the annual meeting and (ii) the 10th day following the day on which we first publicly announce the date of the annual meeting; or
- in connection with the election of a director at a special meeting of stockholders, during the period not less than 120 nor more than 150 days prior to the date of the special meeting, or the 10th day following the day on which a notice of the date of the special meeting was mailed to the stockholders or the public disclosure of that date was made.

In order to submit a nomination for our board of directors, a stockholder must also submit all information with respect to the nominee that would be required to be included in a proxy statement, as well as other information. If a stockholder fails to follow the required procedures, the stockholder's proposal or nominee will be ineligible and will not be voted on by our stockholders.

Limitation of Liability of Directors and Officers

Our amended and restated certificate of incorporation provides that no director will be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except as required by applicable law, as in effect from time to time. Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability for:

- any breach of the director's duty of loyalty to our company or our stockholders;
- any act or omission not in good faith or which involved intentional misconduct or a knowing violation of law;
- unlawful payments of dividends or unlawful stock repurchases or redemptions as provided in Section 174 of the Delaware General Corporation Law; and
- any transaction from which the director derived an improper personal benefit.

As a result, neither we nor our stockholders have the right, through stockholders' derivative suits on our behalf, to recover monetary damages against a director for breach of fiduciary duty as a director, including breaches resulting from grossly negligent behavior, except in the situations described above.

Our amended and restated certificate of incorporation also provides that, to the fullest extent permitted by law, we will indemnify any officer or director of our company against all damages, claims, and liabilities arising out of the fact that the person is or was our director or officer, or served any other enterprise at our request as a director or officer. Amending this provision will not reduce our indemnification obligations relating to actions taken before an amendment.

Forum Selection

Our amended and restated certificate of incorporation provides that the Court of Chancery of the State of Delaware will be the sole and exclusive forum for the following types of actions or proceedings under Delaware statutory or common law: (i) any derivative action or proceeding brought on behalf of us; (ii) any action asserting a claim of breach of fiduciary duty owed by any director, officer, or other employee of our company to us or our stockholders; (iii) any action asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or our amended and restated certificate of incorporation and bylaws; or (iv) any action asserting a claim governed by the internal affairs doctrine. This provision would not apply to claims brought to enforce a duty or liability created by the Securities Exchange Act of 1934, as amended, or any other claim for which the federal courts have exclusive jurisdiction.

Furthermore, our amended and restated certificate of incorporation will also provide that unless we consent in writing to the selection of an alternative forum, the federal district courts of the United States shall be the exclusive forum for the resolution of any complaint asserting a cause of action arising under the Securities Act of 1933, as amended. Any person or entity purchasing or otherwise acquiring any interest in our shares of capital stock shall be deemed to have notice of and consented to the foregoing forum selection provisions.

Our exclusive forum provision will not relieve us of our duties to comply with the federal securities laws and the rules and regulations thereunder, and our stockholders will not be deemed to have waived our compliance with these laws, rules and regulations.

The enforceability of similar federal court choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that a court could find this type of provision to be inapplicable or unenforceable. If a court were to find either of the choice of forum provisions contained in our amended and restated certificate of incorporation or amended and restated bylaws to be inapplicable or unenforceable in an action, we may incur additional costs associated with resolving such action in other jurisdictions.

The choice of forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with the company or our directors, officers or other employees, which may discourage such lawsuits against the company and our directors, officers and other employees and result in increased costs for investors to bring a claim.

Delaware Business Combination Statute

We have elected to be subject to Section 203 of the Delaware General Corporation Law. Section 203 prevents an "interested stockholder," which is defined generally as a person owning 15% or more of a corporation's voting stock, or any affiliate or associate of that person, from engaging in a broad range of "business combinations" with the corporation for three years after becoming an interested stockholder unless:

- the board of directors of the corporation had previously approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;
- upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, that person owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, other than statutorily excluded shares; or

- following the transaction in which that person became an interested stockholder, the business combination is approved by the board of directors of the corporation and holders of at least two-thirds of the outstanding voting stock not owned by the interested stockholder.

Under Section 203, the restrictions described above also do not apply to specific business combinations proposed by an interested stockholder following the announcement or notification of designated extraordinary transactions involving the corporation and a person who had not been an interested stockholder during the previous three years or who became an interested stockholder with the approval of a majority of the corporation's directors, if such extraordinary transaction is approved or not opposed by a majority of the directors who were directors prior to any person becoming an interested stockholder during the previous three years or were recommended for election or elected to succeed such directors by a majority of such directors.

Section 203 may make it more difficult for a person who would be an interested stockholder to effect various business combinations with a corporation for a three-year period. Section 203 also may have the effect of preventing changes in our management and could make it more difficult to accomplish transactions that our stockholders may otherwise deem to be in their best interests.

Anti-Takeover Effects of Some Provisions

Certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws could make the following more difficult:

- acquisition of control of us by means of a proxy contest, tender offer, or otherwise; or
- removal of our incumbent officers and directors.

These provisions, as well as our ability to issue preferred stock, are designed to discourage coercive takeover practices and inadequate takeover bids. These provisions are also designed to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of increased protection give us the potential ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us, and that the benefits of this increased protection outweigh the disadvantages of discouraging those proposals, because negotiation of those proposals could result in an improvement of their terms.

Listing

We intend to apply to list our common stock on the Nasdaq Global Market under the symbol "NMRA."

Transfer Agent and Registrar

The transfer agent and registrar for the common stock will be . The transfer agent and registrar's address is .

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES TO NON-U.S. HOLDERS

The following discussion is a summary of the material U.S. federal income tax consequences to Non-U.S. Holders (as defined below) of the purchase, ownership and disposition of our common stock issued pursuant to this offering, but does not purport to be a complete analysis of all potential tax effects. The effects of other U.S. federal tax laws, such as estate and gift tax laws, and any applicable state, local or non-U.S. tax laws are not discussed. This discussion is based on the Code, Treasury Regulations promulgated thereunder, judicial decisions, and published rulings and administrative pronouncements of the U.S. Internal Revenue Service (the IRS), in each case in effect as of the date hereof.

These authorities may change or be subject to differing interpretations. Any such change or differing interpretation may be applied retroactively in a manner that could adversely affect a Non-U.S. Holder. We have not sought and will not seek any rulings from the IRS regarding the matters discussed below. There can be no assurance the IRS or a court will not take a contrary position to that discussed below regarding the tax consequences of the purchase, ownership and disposition of our common stock.

This discussion is limited to Non-U.S. Holders that hold our common stock as a "capital asset" within the meaning of Section 1221 of the Code (generally, property held for investment). This discussion does not address all U.S. federal income tax consequences relevant to a Non-U.S. Holder's particular circumstances, including the impact of the Medicare contribution tax on net investment income and the alternative minimum tax. In addition, it does not address consequences relevant to Non-U.S. Holders subject to special rules, including, without limitation:

- U.S. expatriates and former citizens or long-term residents of the United States;
- persons holding our common stock as part of a hedge, straddle or other risk reduction strategy or as part of a conversion transaction or other integrated investment;
- banks, insurance companies and other financial institutions;
- brokers, dealers or traders in securities;
- "controlled foreign corporations," "passive foreign investment companies" and corporations that accumulate earnings to avoid U.S. federal income tax;
- partnerships or other entities or arrangements treated as partnerships for U.S. federal income tax purposes (and investors therein);
- tax-exempt organizations or governmental organizations;
- persons deemed to sell our common stock under the constructive sale provisions of the Code;
- persons who hold or receive our common stock pursuant to the exercise of any employee stock option or otherwise as compensation;
- tax-qualified retirement plans; and
- "qualified foreign pension funds" as defined in Section 897(l)(2) of the Code and entities all of the interests of which are held by qualified foreign pension funds.

If an entity treated as a partnership for U.S. federal income tax purposes holds our common stock, the tax treatment of a partner in the partnership will depend on the status of the partner, the activities of the partnership and certain determinations made at the partner level. Accordingly, partnerships holding our common stock and the partners in such partnerships should consult their tax advisors regarding the U.S. federal income tax consequences to them.

THIS DISCUSSION IS FOR INFORMATIONAL PURPOSES ONLY AND IS NOT TAX ADVICE. INVESTORS SHOULD CONSULT THEIR TAX ADVISORS WITH RESPECT TO THE APPLICATION OF THE U.S. FEDERAL INCOME TAX LAWS TO THEIR PARTICULAR SITUATIONS AS WELL AS ANY TAX CONSEQUENCES OF THE PURCHASE, OWNERSHIP AND DISPOSITION OF OUR COMMON STOCK ARISING UNDER THE U.S. FEDERAL ESTATE OR GIFT TAX LAWS OR UNDER THE LAWS OF ANY STATE, LOCAL OR NON-U.S. TAXING JURISDICTION OR UNDER ANY APPLICABLE INCOME TAX TREATY.

Definition of a Non-U.S. Holder

For purposes of this discussion, a "Non-U.S. Holder" is any beneficial owner of our common stock that is neither a "U.S. person" nor an entity treated as a partnership for U.S. federal income tax purposes. A U.S. person is any person that, for U.S. federal income tax purposes, is or is treated as any of the following:

- an individual who is a citizen or resident of the United States;
- a corporation created or organized under the laws of the United States, any state thereof or the District of Columbia;
- an estate, the income of which is subject to U.S. federal income tax regardless of its source; or
- a trust that (i) is subject to the primary supervision of a U.S. court and all substantial decisions of which are subject to the control of one or more "United States persons" (within the meaning of Section 7701(a)(30) of the Code) or (ii) has a valid election in effect to be treated as a United States person for U.S. federal income tax purposes.

Distributions

As described in the section titled "Dividend Policy," we do not anticipate paying any cash dividends in the foreseeable future. However, if we do make distributions of cash or property on our common stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Amounts not treated as dividends for U.S. federal income tax purposes will constitute a return of capital and first be applied against and reduce a Non-U.S. Holder's adjusted tax basis in its common stock, but not below zero. Any excess will be treated as capital gain and will be treated as described below under the subsection titled "—Sale or Other Taxable Disposition."

Subject to the discussion below regarding effectively connected income, dividends paid to a Non-U.S. Holder will be subject to U.S. federal withholding tax at a rate of 30% of the gross amount of the dividends (or such lower rate specified by an applicable income tax treaty, provided the Non-U.S. Holder furnishes a valid IRS Form W-8BEN or W-8BEN-E (or other applicable documentation) certifying qualification for the lower treaty rate). A Non-U.S. Holder that does not timely furnish the required documentation, but that qualifies for a reduced treaty rate, may obtain a refund of any excess amounts withheld by timely filing an appropriate claim for refund with the IRS. Non-U.S. Holders should consult their tax advisors regarding their entitlement to benefits under any applicable tax treaties.

If dividends paid to a Non-U.S. Holder are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such dividends are attributable), the Non-U.S. Holder will be exempt from the U.S. federal withholding tax described above. To claim the exemption, the Non-U.S. Holder must furnish to the applicable withholding agent a valid IRS Form W-8ECI, certifying that the dividends are effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States. Any such effectively connected dividends will be subject to U.S. federal income tax on a net income basis at the regular rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be

subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected dividends, as adjusted for certain items. Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Sale or Other Taxable Disposition

A Non-U.S. Holder will not be subject to U.S. federal income tax on any gain realized upon the sale or other taxable disposition of our common stock unless:

- the gain is effectively connected with the Non-U.S. Holder's conduct of a trade or business within the United States (and, if required by an applicable income tax treaty, the Non-U.S. Holder maintains a permanent establishment in the United States to which such gain is attributable);
- the Non-U.S. Holder is a nonresident alien individual present in the United States for 183 days or more during the taxable year of the disposition and certain other requirements are met; or
- our common stock constitutes a U.S. real property interest (USRPI), by reason of our status as a U.S. real property holding corporation (USRPHC), for U.S. federal income tax purposes.

Gain described in the first bullet point above generally will be subject to U.S. federal income tax on a net income basis at the regular rates applicable to U.S. persons. A Non-U.S. Holder that is a corporation also may be subject to a branch profits tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on such effectively connected gain, as adjusted for certain items.

A Non-U.S. Holder described in the second bullet point above will be subject to U.S. federal income tax at a rate of 30% (or such lower rate specified by an applicable income tax treaty) on gain realized upon the sale or other taxable disposition of our common stock, which may be offset by certain U.S.-source capital losses of the Non-U.S. Holder (even though the individual is not considered a resident of the United States), provided the Non-U.S. Holder has timely filed U.S. federal income tax returns with respect to such losses.

With respect to the third bullet point above, we believe we currently are not, and do not anticipate becoming, a USRPHC. Because the determination of whether we are a USRPHC depends, however, on the fair market value of our USRPIs relative to the fair market value of our non-U.S. real property interests and our other business assets, there can be no assurance that we currently are not a USRPHC or will not become one in the future. Even if we are or were to become a USRPHC, gain arising from the sale or other taxable disposition of our common stock by a Non-U.S. Holder will not be subject to U.S. federal income tax if our common stock is "regularly traded," as defined by applicable Treasury Regulations, on an established securities market, and such Non-U.S. Holder owned, actually and constructively, 5% or less of our common stock throughout the shorter of the five-year period ending on the date of the sale or other taxable disposition or the Non-U.S. Holder's holding period.

Non-U.S. Holders should consult their tax advisors regarding any applicable tax treaties that may provide for different rules.

Information Reporting and Backup Withholding

Payments of dividends on our common stock will not be subject to backup withholding, provided the Non-U.S. Holder certifies its non-U.S. status, such as by furnishing a valid IRS Form W-8BEN, W-8BEN-E or W-8ECI, or otherwise establishes an exemption. However, information returns are required to be filed with the IRS in connection with any distributions on our common stock paid to the Non-U.S. Holder, regardless of whether such distributions constitute dividends or whether any tax was actually withheld. In addition, proceeds of the sale or other taxable disposition of our common stock within the United States or conducted through certain U.S.-related brokers generally will not be subject to backup withholding or information reporting if the

applicable withholding agent receives the certification described above or the Non-U.S. Holder otherwise establishes an exemption. Proceeds of a disposition of our common stock conducted through a non-U.S. office of a non-U.S. broker that does not have certain enumerated relationships with the United States generally will not be subject to backup withholding or information reporting.

Copies of information returns that are filed with the IRS may also be made available under the provisions of an applicable treaty or agreement to the tax authorities of the country in which the Non-U.S. Holder resides or is established.

Backup withholding is not an additional tax. Any amounts withheld under the backup withholding rules may be allowed as a refund or a credit against a Non-U.S. Holder's U.S. federal income tax liability, provided the required information is timely furnished to the IRS.

Additional Withholding Tax on Payments Made to Foreign Accounts

Withholding taxes may be imposed under Sections 1471 to 1474 of the Code (such Sections commonly referred to as the Foreign Account Tax Compliance Act (FATCA)) on certain types of payments made to non-U.S. financial institutions and certain other non-U.S. entities. Specifically, a 30% withholding tax may be imposed on dividends on, or (subject to the proposed Treasury Regulations discussed below) gross proceeds from the sale or other disposition of, our common stock paid to a "foreign financial institution" or a "non-financial foreign entity" (each as defined in the Code), unless (i) the foreign financial institution undertakes certain diligence and reporting obligations, (ii) the non-financial foreign entity either certifies it does not have any "substantial United States owners" (as defined in the Code) or furnishes identifying information regarding each substantial United States owner or (iii) the foreign financial institution or non-financial foreign entity otherwise qualifies for an exemption from these rules. If the payee is a foreign financial institution and is subject to the diligence and reporting requirements in (i) above, it must enter into an agreement with the U.S. Department of the Treasury requiring, among other things, that it undertake to identify accounts held by certain "specified United States persons" or "United States owned foreign entities" (each as defined in the Code), annually report certain information about such accounts, and withhold 30% on certain payments to non-compliant foreign financial institutions and certain other account holders. Foreign financial institutions located in jurisdictions that have an intergovernmental agreement with the United States governing FATCA may be subject to different rules.

Under applicable Treasury Regulations and administrative guidance, withholding under FATCA generally applies to payments of dividends on our common stock. While withholding under FATCA would have applied also to payments of gross proceeds from the sale or other disposition of our common stock beginning on January 1, 2019, proposed Treasury Regulations eliminate FATCA withholding on payments of gross proceeds entirely. Taxpayers generally may rely on these proposed Treasury Regulations until final Treasury Regulations are issued.

Prospective investors should consult their tax advisors regarding the potential application of withholding under FATCA to their investment in our common stock.

SHARES ELIGIBLE FOR FUTURE SALE

Prior to this offering, there has been no public market for our common stock. Future sales of substantial amounts of our common stock in the public market could adversely affect market prices prevailing from time to time. Furthermore, because only a limited number of shares will be available for sale shortly after this offering due to existing contractual and legal restrictions on resale as described below, there may be sales of substantial amounts of our common stock in the public market after the restrictions lapse. This may adversely affect the prevailing market price and our ability to raise equity capital in the future.

Based on the number of shares of our common stock outstanding as of September 30, 2021, upon completion of this offering, we will have shares of common stock outstanding, assuming no exercise of the underwriters' option to purchase additional shares and no exercise of any options after September 30, 2021. Of these shares, , or shares of our common stock if the underwriters exercise their option to purchase additional shares in full, sold in this offering will be freely transferable without restriction or registration under the Securities Act, except for any shares purchased by one of our existing "affiliates," as that term is defined in Rule 144 under the Securities Act. The remaining shares of common stock outstanding will bear "restricted shares" as defined in Rule 144. Restricted shares and the shares of common stock into which such securities are convertible may be sold in the public market only if registered or if they qualify for an exemption from registration under Rules 144 or 701 of the Securities Act, which rules are summarized below. As a result of the contractual lock-up period ending 180 days after the date of this prospectus described below and the provisions of Rules 144 and 701, these shares will be available for sale in the public market as follows:

Number of Shares	Date
	After 180 days from the date of this prospectus (subject, in some cases, to volume limitations)

Rule 144

In general, a person who has beneficially owned restricted shares of our common stock for at least six months would be entitled to sell such securities, provided that (i) such person is not deemed to have been one of our affiliates at the time of, or at any time during the 90 days preceding, a sale; and (ii) we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Persons who have beneficially owned restricted shares of our common stock for at least six months but who are our affiliates at the time of, or any time during the 90 days preceding, a sale, would be subject to additional restrictions, by which such person would be entitled to sell within any three-month period only a number of securities that does not exceed the greater of either of the following:

- 1% of the number of shares of our common stock then outstanding, which will equal approximately shares immediately after this offering, assuming no exercise of the underwriters' option to purchase additional shares; or
- the average weekly trading volume of shares of our common stock on the Nasdaq Global Market during the four calendar weeks preceding the filing of a notice on Form 144 with respect to the sale;

provided, in each case, that we are subject to the Exchange Act periodic reporting requirements for at least 90 days before the sale. Such sales both by affiliates and by non-affiliates must also comply with the manner of sale, current public information, and notice provisions of Rule 144 to the extent applicable.

Rule 701

In general, under Rule 701 as currently in effect, any of our employees, directors, officers, consultants or advisors who acquired common stock from us in connection with a written compensatory stock or option plan or other written agreement in compliance with Rule 701 before the effective date of the registration statement of

which this prospectus is a part (to the extent such common stock is not subject to a lock-up agreement) and who are not our "affiliates" as defined in Rule 144 during the immediately preceding 90 days, is entitled to rely on Rule 701 to resell such shares beginning 90 days after the date of this prospectus in reliance on Rule 144, but without complying with the notice, manner of sale, public information requirements or volume limitation provisions of Rule 144. Persons who are our "affiliates" may resell those shares beginning 90 days after the date of this prospectus without compliance with minimum holding period requirements under Rule 144 (subject to the terms of the lock-up agreement referred to below, if applicable).

Lock-Up Agreements

In connection with this offering, we, our directors, our executive officers and holders of substantially all of our other outstanding shares of common stock or securities convertible into or exchangeable for shares of our common stock outstanding upon the completion of this offering, have entered into or will enter into lock-up agreements with the underwriters, subject to certain exceptions more fully described under the section titled "Underwriting," not to, among other things and subject to certain exceptions, dispose of or hedge any of their common stock or securities convertible into or exchangeable for shares of common stock during the period from the date of this prospectus continuing through the date 180 days after the date of this prospectus, except with the prior consent of J.P. Morgan Securities LLC, BofA Securities, Inc. and Credit Suisse (USA) Securities LLC. See the section titled "Underwriting" for additional information.

Registration Rights

Upon the completion of this offering, the holders of approximately shares of our common stock will be entitled to rights with respect to the registration of their shares under the Securities Act, subject to the lock-up agreements described under "—Lock-Up Agreements" above. Registration of these shares under the Securities Act would result in the shares becoming freely tradable without restriction under the Securities Act, except for shares purchased by affiliates, immediately upon the effectiveness of the registration statement of which this prospectus is a part. Any sales of securities by these stockholders could have a material adverse effect on the trading price of our common stock. The requisite percentage of these stockholders will waive all such stockholders' rights to notice of this offering and to include their shares of registrable securities in this offering. See the section titled "Description of Capital Stock—Registration Rights."

Equity Incentive Plans

We intend to file with the SEC a registration statement on Form S-8 under the Securities Act covering the shares of common stock reserved for issuance under the 2015 Plan, the 2020 Plan, the 2022 Plan and the ESPP. Such registration statement is expected to be filed and become effective as soon as practicable after the completion of this offering. Accordingly, shares registered under such registration statement will be available for sale in the open market following its effective date, subject to Rule 144 volume limitations and the lock-up agreements described above, if applicable.

UNDERWRITING

We are offering the shares of common stock described in this prospectus through a number of underwriters. J.P. Morgan Securities LLC, BofA Securities, Inc. and Credit Suisse Securities (USA) LLC are acting as representatives of the underwriters. We have entered into an underwriting agreement with the underwriters. Subject to the terms and conditions of the underwriting agreement, we have agreed to sell to the underwriters, and each underwriter has severally agreed to purchase, at the public offering price less the underwriting discounts and commissions set forth on the cover page of this prospectus, the number of shares of common stock listed next to its name in the following table:

Name	Number of Shares
J.P. Morgan Securities LLC	
BofA Securities, Inc.	
Credit Suisse Securities (USA) LLC	
Stifel, Nicolaus & Company, Incorporated	
Guggenheim Securities, LLC	
Total	

The underwriters are committed to purchase all the shares of common stock offered by us if they purchase any shares. The underwriting agreement also provides that if an underwriter defaults, the purchase commitments of non-defaulting underwriters may also be increased or the offering may be terminated.

The underwriters propose to offer the common stock directly to the public at the initial public offering price set forth on the cover page of this prospectus and to certain dealers at that price less a concession not in excess of $ per share. After the initial offering of the shares to the public, if all of the shares of common stock are not sold at the initial public offering price, the underwriters may change the offering price and the other selling terms. Sales of any shares made outside of the United States may be made by affiliates of the underwriters.

The underwriters have an option to buy up to additional shares of common stock from us to cover sales of shares by the underwriters which exceed the number of shares specified in the table above. The underwriters have 30 days from the date of this prospectus to exercise this option to purchase additional shares. If any shares are purchased with this option to purchase additional shares, the underwriters will purchase shares in approximately the same proportion as shown in the table above. If any additional shares of common stock are purchased, the underwriters will offer the additional shares on the same terms as those on which the shares are being offered.

The underwriting fee is equal to the public offering price per share of common stock less the amount paid by the underwriters to us per share of common stock. The underwriting fee is $ per share. The following table shows the per share and total underwriting discounts and commissions to be paid to the underwriters assuming both no exercise and full exercise of the underwriters' option to purchase additional shares.

	Without Option to Purchase Additional Shares Exercise	With Full Option to Purchase Additional Shares Exercise
Per Share	$	$
Total	$	$

We estimate that the total expenses of this offering, including registration, filing and listing fees, printing fees and legal and accounting expenses, but excluding the underwriting discounts and commissions, will be approximately $. We have agreed to reimburse the underwriters for expenses relating to the clearance of this offering with the Financial Industry Regulatory Authority, Inc. in an amount up to $.

A prospectus in electronic format may be made available on the web sites maintained by one or more underwriters, or selling group members, if any, participating in the offering. The underwriters may agree to allocate a number of shares to underwriters and selling group members for sale to their online brokerage account holders. Internet distributions will be allocated by the representatives to underwriters and selling group members that may make Internet distributions on the same basis as other allocations.

We have agreed that we will not, subject to certain exceptions, (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, hedge, lend, or otherwise transfer or dispose of, directly or indirectly, or submit to, or file with, the Securities and Exchange Commission a registration statement under the Securities Act relating to, any shares of our common stock or any securities convertible into or exercisable or exchangeable for any shares of our common stock, or publicly disclose the intention to undertake any of the foregoing, or (ii) enter into any swap, hedging, or other agreement that transfers, in whole or in part, any of the economic consequences of ownership of any shares of common stock or any such other securities, (regardless of whether any of these transactions are to be settled by the delivery of shares of common stock or such other securities, in cash or otherwise), in each case without the prior written consent of J.P. Morgan Securities LLC, BofA Securities, Inc. and Credit Suisse Securities (USA) LLC for a period of 180 days after the date of this prospectus, other than the shares of our common stock to be sold in this offering.

The restrictions on our actions, as described above, do not apply to certain transactions, including (i) the issuance of shares of common stock or securities convertible into or exercisable for shares of our common stock pursuant to the conversion or exchange of convertible or exchangeable securities or the exercise of warrants or options (including net exercise) or the settlement of RSUs (including net settlement), in each case outstanding on the date of the underwriting agreement and described in this prospectus; (ii) grants of stock options, stock awards, restricted stock, RSUs, or other equity awards and the issuance of shares of common stock or securities convertible into or exercisable or exchangeable for shares of our common stock (whether upon the exercise of stock options or otherwise) to our employees, officers, directors, advisors, or consultants pursuant to the terms of an equity compensation plan in effect as of the closing date of this offering and described in this prospectus, provided that such recipients enter into a lock-up agreement with the underwriters; (iii) the issuance of up to 10% of the outstanding shares of common stock, or securities convertible into, exercisable for, or which are otherwise exchangeable for, common stock, immediately following the closing date of this offering, in acquisitions or other similar strategic transactions, provided that such recipients enter into a lock-up agreement with the underwriters; or (iv) the filing of any registration statement on Form S-8 relating to securities granted or to be granted pursuant to any plan in effect on the date of the underwriting agreement and described in this prospectus or any assumed benefit plan pursuant to an acquisition or similar strategic transaction.

Our directors and executive officers, and substantially all of our securityholders (such persons, the lock-up parties) have entered into lock-up agreements with the underwriters prior to the commencement of this offering pursuant to which each lock-up party, with limited exceptions, for a period of 180 days after the date of this prospectus (such period, the restricted period), may not and may not cause any of their direct or indirect affiliates to, without the prior written consent of J.P. Morgan Securities LLC, BofA Securities, Inc. and Credit Suisse Securities (USA) LLC, (i) offer, pledge, sell, contract to sell, sell any option or contract to purchase, purchase any option or contract to sell, grant any option, right or warrant to purchase, lend, or otherwise transfer or dispose of, directly or indirectly, any shares of our common stock or any securities convertible into or exercisable or exchangeable for our common stock (including without limitation, our common stock or such other securities which may be deemed to be beneficially owned by the lock-up party in accordance with the rules and regulations of the Securities and Exchange Commission and securities which may be issued upon exercise of a stock option or warrant) (collectively with the common stock, the lock-up securities), (ii) enter into any hedging, swap or other agreement or transaction that transfers, in whole or in part, any of the economic consequences of ownership of the lock-up securities, whether any such transaction described in clause (i) or (ii) above is to be settled by delivery of the lock-up securities, in cash or otherwise, (iii) make any demand for or exercise any right with respect to the registration of any the lock up securities, or (iv) publicly disclose the intention to do any of the foregoing.

Such persons or entities have further acknowledged that these undertakings preclude them from engaging from engaging in any hedging or other transactions or arrangements (including, without limitation, any short sale or the purchase or sale of, or entry into, any put or call option, or combination thereof, forward, swap or any other derivative transaction or instrument, however described or defined) designed or intended, or which could reasonably be expected to lead to or result in, a sale or disposition or transfer (whether by the lock-up party or any other person) of any economic consequences of ownership, in whole or in part, directly or indirectly, of any lock-up securities, whether any such transaction or arrangement (or instrument provided for thereunder) would be settled by delivery of lock-up securities, in cash or otherwise. Such persons or entities further confirm that they have furnished the representatives with the details of any transaction such persons or entities, or any of their respective affiliates, is a party to as of the date hereof, which transaction would have been restricted by the lock-up agreements if it had been entered into by such persons or entities during the restricted period.

The restrictions described in the immediately preceding paragraph and contained in the lock-up agreements between the underwriters and the lock-up parties do not apply, subject in certain cases to various conditions, to certain transactions, including (a) transfers, distribution, disposition or surrender of lock-up securities: (i) as bona fide gifts, or for bona fide estate planning purposes, (ii) by will, testamentary document or intestacy, (iii) to any trust for the direct or indirect benefit of the lock-up party or any immediate family member, (iv) to a corporation, partnership, limited liability company or other entity of which the lock-up party and its immediate family members are the legal and beneficial owner of all of the outstanding equity securities or similar interests, (v) to a nominee or custodian of a person or entity to whom a disposition or transfer would be permissible under clauses (i) through (iv), (vi) in the case of a corporation, partnership, limited liability company, trust or other business entity, (A) to another corporation, partnership, limited liability company, trust or other business entity that is an affiliate of the lock-up party, or to any investment fund or other entity controlling, controlled by, managing or managed by or under common control with the lock-up party or its affiliates or (B) as part of a distribution to partners, members or stockholders of the lock-up party; (vii) by operation of law, (viii) to us from an employee upon death, disability or termination of employment of such employee, (ix) as part of a sale of lock-up securities acquired in this offering or in open market transactions after the completion of this offering, (x) to us in connection with the vesting, settlement or exercise of restricted stock units, options, warrants or other rights to purchase shares of our common stock (including “net” or “cashless” exercise), including for the payment of exercise price and tax and remittance payments, or (xi) pursuant to a bona fide third-party tender offer, merger, consolidation or other similar transaction approved by our board of directors and made to all shareholders involving a change in control, provided that if such transaction is not completed, all such lock-up securities would remain subject to the restrictions in the immediately preceding paragraph; (b) exercise of the options, settlement of RSUs or other equity awards, or the exercise of warrants granted pursuant to plans described in in this prospectus, provided that any lock-up securities received upon such exercise, vesting or settlement would be subject to restrictions similar to those in the immediately preceding paragraph; (c) the conversion of outstanding convertible preferred stock, warrants to acquire preferred stock, or convertible securities into shares of our common stock or warrants to acquire shares of our common stock, provided that any common stock or warrant received upon such conversion would be subject to restrictions similar to those in the immediately preceding paragraph; and (d) the establishment by lock-up parties of trading plans under Rule 10b5-1 under Section 16 of the Exchange Act, provided that such plan does not provide for the transfer of lock-up securities during the restricted period.

J.P. Morgan Securities LLC, BofA Securities, Inc. and Credit Suisse Securities (USA) LLC, in their sole discretion, may release the securities subject to any of the lock-up agreements with the underwriters described above, in whole or in part at any time.

We have agreed to indemnify the underwriters against certain liabilities, including liabilities under the Securities Act.

We intend to apply to list our common stock on the Nasdaq Global Market under the symbol “NMRA.”

In connection with this offering, the underwriters may engage in stabilizing transactions, which involves making bids for, purchasing and selling shares of common stock in the open market for the purpose of preventing or retarding a decline in the market price of the common stock while this offering is in progress. These stabilizing transactions may include making short sales of common stock, which involves the sale by the underwriters of a greater number of shares of common stock than they are required to purchase in this offering, and purchasing shares of common stock on the open market to cover positions created by short sales. Short sales may be "covered" shorts, which are short positions in an amount not greater than the underwriters' option to purchase additional shares referred to above, or may be "naked" shorts, which are short positions in excess of that amount.

The underwriters may close out any covered short position either by exercising their option to purchase additional shares, in whole or in part, or by purchasing shares in the open market. In making this determination, the underwriters will consider, among other things, the price of shares available for purchase in the open market compared to the price at which the underwriters may purchase shares through the option to purchase additional shares. A naked short position is more likely to be created if the underwriters are concerned that there may be downward pressure on the price of the common stock in the open market that could adversely affect investors who purchase in this offering. To the extent that the underwriters create a naked short position, they will purchase shares in the open market to cover the position.

The underwriters have advised us that, pursuant to Regulation M of the Securities Act, they may also engage in other activities that stabilize, maintain or otherwise affect the price of the common stock, including the imposition of penalty bids. This means that if the representatives of the underwriters purchase common stock in the open market in stabilizing transactions or to cover short sales, the representatives can require the underwriters that sold those shares as part of this offering to repay the underwriting discount received by them.

These activities may have the effect of raising or maintaining the market price of the common stock or preventing or retarding a decline in the market price of the common stock, and, as a result, the price of the common stock may be higher than the price that otherwise might exist in the open market. If the underwriters commence these activities, they may discontinue them at any time. The underwriters may carry out these transactions on the Nasdaq Global Market, in the over-the-counter market or otherwise.

Prior to this offering, there has been no public market for our common stock. The initial public offering price will be determined by negotiations between us and the representatives of the underwriters. In determining the initial public offering price, we and the representatives of the underwriters expect to consider a number of factors including:

- the information set forth in this prospectus and otherwise available to the representatives;
- our prospects and the history and prospects for the industry in which we compete;
- an assessment of our management;
- our prospects for future earnings;
- the general condition of the securities markets at the time of this offering;
- the recent market prices of, and demand for, publicly traded common stock of generally comparable companies; and
- other factors deemed relevant by the underwriters and us.

Neither we nor the underwriters can assure investors that an active trading market will develop for shares of our common stock, or that the shares will trade in the public market at or above the initial public offering price.

Other Relationships

Certain of the underwriters and their affiliates have provided in the past to us and our affiliates and may provide from time to time in the future certain commercial banking, financial advisory, investment banking and

other services for us and such affiliates in the ordinary course of their business, for which they have received and may continue to receive customary fees and commissions. In addition, from time to time, certain of the underwriters and their affiliates may effect transactions for their own account or the account of customers, and hold on behalf of themselves or their customers, long or short positions in our debt or equity securities or loans, and may do so in the future.

Selling Restrictions

Other than in the United States, no action has been taken by us or the underwriters that would permit a public offering of the securities offered by this prospectus in any jurisdiction where action for that purpose is required. The securities offered by this prospectus may not be offered or sold, directly or indirectly, nor may this prospectus or any other offering material or advertisements in connection with the offer and sale of any such securities be distributed or published in any jurisdiction, except under circumstances that will result in compliance with the applicable rules and regulations of that jurisdiction. Persons into whose possession this prospectus comes are advised to inform themselves about and to observe any restrictions relating to the offering and the distribution of this prospectus. This prospectus does not constitute an offer to sell or a solicitation of an offer to buy any securities offered by this prospectus in any jurisdiction in which such an offer or a solicitation is unlawful.

Notice to Prospective Investors in the European Economic Area

In relation to each Member State of the European Economic Area (each a Relevant State), no shares have been offered or will be offered pursuant to the offering to the public in that Relevant State prior to the publication of a prospectus in relation to the shares which has been approved by the competent authority in that Relevant State or, where appropriate, approved in another Relevant State and notified to the competent authority in that Relevant State, all in accordance with the Prospectus Regulation, except that the shares may be offered to the public in that Relevant State at any time:

(i) to any legal entity which is a qualified investor as defined under Article 2 of the Prospectus Regulation;

(ii) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

(iii) in any other circumstances falling within Article 1(4) of the Prospectus Regulation,

provided that no such offer of shares shall require us or any of the representatives to publish a prospectus pursuant to Article 3 of the Prospectus Regulation or supplement a prospectus pursuant to Article 23 of the Prospectus Regulation.

For the purposes of this provision, the expression an “offer to the public” in relation to shares in any Relevant State means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares, and the expression “Prospectus Regulation” means Regulation (EU) 2017/1129.

Notice to Prospective Investors in the United Kingdom

No shares have been offered or will be offered pursuant to the offering to the public in the United Kingdom prior to the publication of a prospectus in relation to the shares which has been approved by the Financial Conduct Authority, except that the shares may be offered to the public in the United Kingdom at any time:

(i) to any legal entity which is a qualified investor as defined under Article 2 of the UK Prospectus Regulation;

(ii) to fewer than 150 natural or legal persons (other than qualified investors as defined under Article 2 of the UK Prospectus Regulation), subject to obtaining the prior consent of the representatives for any such offer; or

(iii) in any other circumstances falling within Section 86 of the FSMA, provided that no such offer of the shares shall require the Issuer or any Manager to publish a prospectus pursuant to Section 85 of the FSMA or supplement a prospectus pursuant to Article 23 of the UK Prospectus Regulation. For the purposes of this provision, the expression an "offer to the public" in relation to the shares in the United Kingdom means the communication in any form and by any means of sufficient information on the terms of the offer and any shares to be offered so as to enable an investor to decide to purchase or subscribe for any shares and the expression "UK Prospectus Regulation" means Regulation (EU) 2017/1129 as it forms part of domestic law by virtue of the European Union (Withdrawal) Act 2018.

Notice to Prospective Investors in Canada

The shares may be sold only to purchasers purchasing, or deemed to be purchasing, as principal that are accredited investors, as defined in National Instrument 45-106 Prospectus Exemptions or subsection 73.3(1) of the Securities Act (Ontario), and are permitted clients, as defined in National Instrument 31-103 Registration Requirements, Exemptions and Ongoing Registrant Obligations. Any resale of the shares must be made in accordance with an exemption from, or in a transaction not subject to, the prospectus requirements of applicable securities laws.

Securities legislation in certain provinces or territories of Canada may provide a purchaser with remedies for rescission or damages if this prospectus (including any amendment thereto) contains a misrepresentation, provided that the remedies for rescission or damages are exercised by the purchaser within the time limit prescribed by the securities legislation of the purchaser's province or territory. The purchaser should refer to any applicable provisions of the securities legislation of the purchaser's province or territory for particulars of these rights or consult with a legal advisor.

Pursuant to section 3A.3 of National Instrument 33-105 Underwriting Conflicts (NI 33-105), the underwriters are not required to comply with the disclosure requirements of NI 33-105 regarding underwriter conflicts of interest in connection with this offering.

Notice to Prospective Investors in Switzerland

The shares may not be publicly offered in Switzerland and will not be listed on the SIX Swiss Exchange (SIX) or on any other stock exchange or regulated trading facility in Switzerland. This document does not constitute a prospectus within the meaning of, and has been prepared without regard to the disclosure standards for issuance prospectuses under art. 652a or art. 1156 of the Swiss Code of Obligations or the disclosure standards for listing prospectuses under art. 27 ff. of the SIX Listing Rules or the listing rules of any other stock exchange or regulated trading facility in Switzerland. Neither this document nor any other offering or marketing material relating to the shares or the offering may be publicly distributed or otherwise made publicly available in Switzerland.

Neither this document nor any other offering or marketing material relating to the offering, us or the shares have been or will be filed with or approved by any Swiss regulatory authority. In particular, this document will not be filed with, and the offer of shares will not be supervised by, the Swiss Financial Market Supervisory Authority FINMA (FINMA), and the offer of shares has not been and will not be authorized under the Swiss Federal Act on Collective Investment Schemes (CISA). The investor protection afforded to acquirers of interests in collective investment schemes under the CISA does not extend to acquirers of shares.

Notice to Prospective Investors in the Dubai International Financial Centre

This document relates to an Exempt Offer in accordance with the Markets Rules 2012 of the Dubai Financial Services Authority (DFSA). This document is intended for distribution only to persons of a type specified in the Markets Rules 2012 of the DFSA. It must not be delivered to, or relied on by, any other person. The DFSA has no responsibility for reviewing or verifying any documents in connection with Exempt Offers. The DFSA has not approved this prospectus supplement nor taken steps to verify the information set forth herein and has no responsibility for this document. The securities to which this document relates may be illiquid and/or subject to restrictions on their resale. Prospective purchasers of the securities offered should conduct their own due diligence on the securities. If you do not understand the contents of this document you should consult an authorized financial advisor.

In relation to its use in the DIFC, this document is strictly private and confidential and is being distributed to a limited number of investors and must not be provided to any person other than the original recipient, and may not be reproduced or used for any other purpose. The interests in the securities may not be offered or sold directly or indirectly to the public in the DIFC.

Notice to Prospective Investors in the United Arab Emirates

The shares have not been, and are not being, publicly offered, sold, promoted or advertised in the United Arab Emirates (including the Dubai International Financial Centre) other than in compliance with the laws of the United Arab Emirates (and the Dubai International Financial Centre) governing the issue, offering and sale of securities. Further, this prospectus does not constitute a public offer of securities in the United Arab Emirates (including the Dubai International Financial Centre) and is not intended to be a public offer. This prospectus has not been approved by or filed with the Central Bank of the United Arab Emirates, the Securities and Commodities Authority or the Dubai Financial Services Authority.

Notice to Prospective Investors in Australia

This prospectus:

- does not constitute a disclosure document or a prospectus under Chapter 6D.2 of the Corporations Act 2001 (Cth) (the Corporations Act);
- has not been, and will not be, lodged with the Australian Securities and Investments Commission (ASIC), as a disclosure document for the purposes of the Corporations Act and does not purport to include the information required of a disclosure document for the purposes of the Corporations Act; and
- may only be provided in Australia to select investors who are able to demonstrate that they fall within one or more of the categories of investors, available under section 708 of the Corporations Act (Exempt Investors).

The shares may not be directly or indirectly offered for subscription or purchased or sold, and no invitations to subscribe for or buy the shares may be issued, and no draft or definitive offering memorandum, advertisement or other offering material relating to any shares may be distributed in Australia, except where disclosure to investors is not required under Chapter 6D of the Corporations Act or is otherwise in compliance with all applicable Australian laws and regulations. By submitting an application for the shares, you represent and warrant to us that you are an Exempt Investor.

As any offer of shares under this document will be made without disclosure in Australia under Chapter 6D.2 of the Corporations Act, the offer of those securities for resale in Australia within 12 months may, under section 707 of the Corporations Act, require disclosure to investors under Chapter 6D.2 if none of the exemptions in section 708 applies to that resale. By applying for the shares you undertake to us that you will not, for a period of

12 months from the date of issue of the shares, offer, transfer, assign or otherwise alienate those shares to investors in Australia except in circumstances where disclosure to investors is not required under Chapter 6D.2 of the Corporations Act or where a compliant disclosure document is prepared and lodged with ASIC.

Notice to Prospective Investors in Japan

The shares have not been and will not be registered pursuant to Article 4, Paragraph 1 of the Financial Instruments and Exchange Act. Accordingly, none of the shares nor any interest therein may be offered or sold, directly or indirectly, in Japan or to, or for the benefit of, any "resident" of Japan (which term as used herein means any person resident in Japan, including any corporation or other entity organized under the laws of Japan), or to others for re-offering or resale, directly or indirectly, in Japan or to or for the benefit of a resident of Japan, except pursuant to an exemption from the registration requirements of, and otherwise in compliance with, the Financial Instruments and Exchange Act and any other applicable laws, regulations and ministerial guidelines of Japan in effect at the relevant time.

Notice to Prospective Investors in Hong Kong

The shares have not been offered or sold and will not be offered or sold in Hong Kong, by means of any document, other than (i) to "professional investors" as defined in the Securities and Futures Ordinance (Cap. 571 of the Laws of Hong Kong) (the SFO) of Hong Kong and any rules made thereunder; or (ii) in other circumstances which do not result in the document being a "prospectus" as defined in the Companies (Winding Up and Miscellaneous Provisions) Ordinance (Cap. 32) of Hong Kong (the CO), or which do not constitute an offer to the public within the meaning of the CO. No advertisement, invitation or document relating to the shares has been or may be issued or has been or may be in the possession of any person for the purposes of issue, whether in Hong Kong or elsewhere, which is directed at, or the contents of which are likely to be accessed or read by, the public of Hong Kong (except if permitted to do so under the securities laws of Hong Kong) other than with respect to shares which are or are intended to be disposed of only to persons outside Hong Kong or only to "professional investors" as defined in the SFO and any rules made thereunder.

Notice to Prospective Investors in Singapore

Each representative has acknowledged that this prospectus has not been registered as a prospectus with the Monetary Authority of Singapore. Accordingly, each representative has represented and agreed that it has not offered or sold any shares or caused the shares to be made the subject of an invitation for subscription or purchase and will not offer or sell any shares or cause the shares to be made the subject of an invitation for subscription or purchase, and has not circulated or distributed, nor will it circulate or distribute, this prospectus or any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares, whether directly or indirectly, to any person in Singapore other than:

(i) to an institutional investor (as defined in Section 4A of the Securities and Futures Act (Chapter 289) of Singapore (as modified or amended from time to time, the SFA) pursuant to Section 274 of the SFA;

(ii) to a relevant person (as defined in Section 275(2) of the SFA) pursuant to Section 275(1) of the SFA, or any person pursuant to Section 275(1A) of the SFA, and in accordance with the conditions specified in Section 275 of the SFA; or

(iii) otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA.

Where the shares are subscribed or purchased under Section 275 of the SFA by a relevant person which is:

(i) a corporation (which is not an accredited investor (as defined in Section 4A of the SFA)) the sole business of which is to hold investments and the entire share capital of which is owned by one or more individuals, each of whom is an accredited investor; or

(ii) a trust (where the trustee is not an accredited investor) whose sole purpose is to hold investments and each beneficiary of the trust is an individual who is an accredited investor,

securities or securities-based derivatives contracts (each term as defined in Section 2(1) of the SFA) of that corporation or the beneficiaries' rights and interest (howsoever described) in that trust shall not be transferred within six months after that corporation or that trust has acquired the shares pursuant to an offer made under Section 275 of the SFA except:

(1) to an institutional investor or to a relevant person, or to any person arising from an offer referred to in Section 275(1A) or Section 276(4)(i)(B) of the SFA;

(2) where no consideration is or will be given for the transfer;

(3) where the transfer is by operation of law;

(4) as specified in Section 276(7) of the SFA; or

(5) as specified in Regulation 37A of the Securities and Futures (Offers of Investments) (Securities and Securities-based Derivatives Contracts) Regulations 2018.

Singapore SFA Product Classification—In connection with Section 309B of the SFA and the CMP Regulations 2018, unless otherwise specified before an offer of the shares, we have determined, and hereby notify all relevant persons (as defined in Section 309A(1) of the SFA), that the shares are "prescribed capital markets products" (as defined in the CMP Regulations 2018) and Excluded Investment Products (as defined in MAS Notice SFA 04-N12: Notice on the Sale of Investment Products and MAS Notice FAA-N16: Notice on Recommendations on Investment Products).

Notice to Prospective Investors in Bermuda

Shares may be offered or sold in Bermuda only in compliance with the provisions of the Investment Business Act of 2003 of Bermuda which regulates the sale of securities in Bermuda. Additionally, non-Bermudian persons (including companies) may not carry on or engage in any trade or business in Bermuda unless such persons are permitted to do so under applicable Bermuda legislation.

Notice to Prospective Investors in Saudi Arabia

This document may not be distributed in the Kingdom of Saudi Arabia except to such persons as are permitted under the Offers of Securities Regulations as issued by the board of the Saudi Arabian Capital Market Authority, or CMA, pursuant to resolution number 2-11-2004 dated 4 October 2004 as amended by resolution number 1-28-2008, as amended. The CMA does not make any representation as to the accuracy or completeness of this document and expressly disclaims any liability whatsoever for any loss arising from, or incurred in reliance upon, any part of this document. Prospective purchasers of the securities offered hereby should conduct their own due diligence on the accuracy of the information relating to the securities. If you do not understand the contents of this document, you should consult an authorized financial adviser.

Notice to Prospective Investors in the British Virgin Islands

The shares are not being, and may not be offered to the public or to any person in the British Virgin Islands for purchase or subscription by us or on our behalf. The shares may be offered to companies incorporated under the BVI Business Companies Act, 2004 (British Virgin Islands), or BVI Companies, but only where the offer will be made to, and received by, the relevant BVI Company entirely outside of the British Virgin Islands.

Notice to Prospective Investors in China

This prospectus will not be circulated or distributed in the PRC and the shares will not be offered or sold, and will not be offered or sold to any person for re-offering or resale directly or indirectly to any residents of the

PRC except pursuant to any applicable laws and regulations of the PRC. Neither this prospectus nor any advertisement or other offering material may be distributed or published in the PRC, except under circumstances that will result in compliance with applicable laws and regulations.

Notice to Prospective Investors in Korea

The shares have not been and will not be registered under the Financial Investments Services and Capital Markets Act of Korea and the decrees and regulations thereunder (the FSCMA), and the shares have been and will be offered in Korea as a private placement under the FSCMA. None of the shares may be offered, sold or delivered directly or indirectly, or offered or sold to any person for re-offering or resale, directly or indirectly, in Korea or to any resident of Korea except pursuant to the applicable laws and regulations of Korea, including the FSCMA and the Foreign Exchange Transaction Law of Korea and the decrees and regulations thereunder (the FETL). The shares have not been listed on any of the securities exchanges in the world including, without limitation, the Korea Exchange in Korea. Furthermore, the purchaser of the shares shall comply with all applicable regulatory requirements (including but not limited to requirements under the FETL) in connection with the purchase of the shares. By the purchase of the shares, the relevant holder thereof will be deemed to represent and warrant that if it is in Korea or is a resident of Korea, it purchased the shares pursuant to the applicable laws and regulations of Korea.

Notice to Prospective Investors in Malaysia

No prospectus or other offering material or document in connection with the offer and sale of the shares has been or will be registered with the Securities Commission of Malaysia (the Commission), for the Commission's approval pursuant to the Capital Markets and Services Act 2007. Accordingly, this prospectus and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the shares may not be circulated or distributed, nor may the shares be offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Malaysia other than (i) a closed end fund approved by the Commission; (ii) a holder of a Capital Markets Services License; (iii) a person who acquires the shares, as principal, if the offer is on terms that the shares may only be acquired at a consideration of not less than RM250,000 (or its equivalent in foreign currencies) for each transaction; (iv) an individual whose total net personal assets or total net joint assets with his or her spouse exceeds RM3 million (or its equivalent in foreign currencies), excluding the value of the primary residence of the individual; (v) an individual who has a gross annual income exceeding RM300,000 (or its equivalent in foreign currencies) per annum in the preceding twelve months; (vi) an individual who, jointly with his or her spouse, has a gross annual income of RM400,000 (or its equivalent in foreign currencies), per annum in the preceding twelve months; (vii) a corporation with total net assets exceeding RM10 million (or its equivalent in a foreign currencies) based on the last audited accounts; (viii) a partnership with total net assets exceeding RM10 million (or its equivalent in foreign currencies); (ix) a bank licensee or insurance licensee as defined in the Labuan Financial Services and Securities Act 2010; (x) an Islamic bank licensee or takaful licensee as defined in the Labuan Financial Services and Securities Act 2010; and (xi) any other person as may be specified by the Commission; *provided* that, in the each of the preceding categories (i) to (xi), the distribution of the shares is made by a holder of a Capital Markets Services License who carries on the business of dealing in securities. The distribution in Malaysia of this prospectus is subject to Malaysian laws. This prospectus does not constitute and may not be used for the purpose of public offering or an issue, offer for subscription or purchase, invitation to subscribe for or purchase any securities requiring the registration of a prospectus with the Commission under the Capital Markets and Services Act 2007.

Notice to Prospective Investors in Taiwan

The shares have not been and will not be registered with the Financial Supervisory Commission of Taiwan pursuant to relevant securities laws and regulations and may not be sold, issued or offered within Taiwan through a public offering or in circumstances which constitutes an offer within the meaning of the Securities and Exchange Act of Taiwan that requires a registration or approval of the Financial Supervisory Commission of

Taiwan. No person or entity in Taiwan has been authorized to offer, sell, give advice regarding or otherwise intermediate the offering and sale of the shares in Taiwan.

Notice to Prospective Investors in South Africa

Due to restrictions under the securities laws of South Africa, no "offer to the public" (as such term is defined in the South African Companies Act, No. 71 of 2008 (as amended or re-enacted, the South African Companies Act)) is being made in connection with the issue of the shares in South Africa. Accordingly, this document does not, nor is it intended to, constitute a "registered prospectus" (as that term is defined in the South African Companies Act) prepared and registered under the South African Companies Act and has not been approved by, and/or filed with, the South African Companies and Intellectual Property Commission or any other regulatory authority in South Africa. The shares are not offered, and the offer shall not be transferred, sold, renounced or delivered, in South Africa or to a person with an address in South Africa, unless one or other of the following exemptions stipulated in section 96 (1) applies:

Section 96 (1)(a) the offer, transfer, sale, renunciation or delivery is to:

(i) persons whose ordinary business, or part of whose ordinary business, is to deal in securities, as principal or agent;

(ii) the South African Public Investment Corporation;

(iii) persons or entities regulated by the Reserve Bank of South Africa;

(iv) authorized financial service providers under South African law;

(v) financial institutions recognized as such under South African law;

(vi) a wholly-owned subsidiary of any person or entity contemplated in (c), (d) or (e), acting as agent in the capacity of an authorized portfolio manager for a pension fund, or as manager for a collective investment scheme (in each case duly registered as such under South African law); or

(vii) any combination of the person in (i) to (vi); or

Section 96 (1)(b) the total contemplated acquisition cost of the securities, for any single addressee acting as principal is equal to or greater than ZAR1,000,000 or such higher amount as may be promulgated by notice in the Government Gazette of South Africa pursuant to section 96(2)(a) of the South African Companies Act.

Information made available in this prospectus should not be considered as "advice" as defined in the South African Financial Advisory and Intermediary Services Act, 2002.

LEGAL MATTERS

The validity of the issuance of the shares of common stock offered hereby will be passed upon for Neumora Therapeutics, Inc. by Latham & Watkins LLP, Menlo Park, California. Cooley LLP, San Diego, California, is representing the underwriters. Certain attorneys of Latham & Watkins LLP collectively own shares of our common stock representing in the aggregate less than 1% of the outstanding shares of our common stock, on an as converted basis.

EXPERTS

Ernst & Young LLP, independent registered public accounting firm, has audited our consolidated financial statements as of December 31, 2019 and 2020, and for the period from November 22, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020, as set forth in their report. We have included our consolidated financial statements in the prospectus and elsewhere in the registration statement in reliance on Ernst & Young LLP's report, given on their authority as experts in accounting and auditing.

WHERE YOU CAN FIND MORE INFORMATION

We have filed with the SEC a registration statement on Form S-1 under the Securities Act with respect to the common stock offered hereby. This prospectus does not contain all of the information set forth in the registration statement and the exhibits and schedules thereto. For further information with respect to the company and our common stock, reference is made to the registration statement and the exhibits and any schedules filed therewith. Statements contained in this prospectus as to the contents of any contract or other document referred to are not necessarily complete and in each instance, if such contract or document is filed as an exhibit, reference is made to the copy of such contract or other document filed as an exhibit to the registration statement, each statement being qualified in all respects by such reference. The SEC maintains a website at www.sec.gov, from which interested persons can electronically access the registration statement, including the exhibits and any schedules thereto.

As a result of the offering, we will be required to file periodic reports and other information with the SEC. We also maintain a website at www.neumoratx.com, at which, following this offering, you may access these materials free of charge as soon as reasonably practicable after they are electronically filed with or furnished to the SEC. Our website and the information contained therein or connected thereto shall not be deemed to be incorporated into this prospectus or the registration statement of which it forms a part. We have included our website address as an inactive textual reference only.

NEUMORA THERAPEUTICS, INC.

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of
Neumora Therapeutics, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Neumora Therapeutics, Inc. (the Company) as of December 31, 2019 and 2020, the related statements of operations and comprehensive loss, statements of convertible preferred stock and stockholders' deficit, and cash flows for the period from November 22, 2019 (inception) to December 31, 2019 and for the year ended December 31, 2020, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2019 and 2020, and the results of its operations and its cash flows for the period from November 22, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020 in conformity with U.S. generally accepted accounting principles.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB and in accordance with auditing standards generally accepted in the United States of America. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2020.

Redwood City, California
November 8, 2021

NEUMORA THERAPEUTICS, INC.

Consolidated Balance Sheets
(in thousands, except par values)

	December 31, 2019	December 31, 2020
Assets		
Current assets:		
Cash	$ —	$191,977
Restricted cash	—	125
Prepaid expenses and other current assets	—	1,739
Total current assets	—	193,841
Property and equipment, net	—	1,933
Operating lease right-of-use assets	—	1,989
Other assets	—	183
Total assets	$ —	$197,946
Liabilities, Convertible Preferred Stock, and Stockholders' Deficit		
Current liabilities:		
Accounts payable	$ —	$ 2,398
Accrued liabilities	21	5,596
Operating lease liabilities, current portion	—	764
Convertible preferred stock warrant liability	—	612
Total current liabilities	21	9,370
Operating lease liabilities, net of current portion	—	1,281
Total liabilities	21	10,651
Commitments and contingencies (Note 9)		
Convertible preferred stock, $0.0001 par value; no shares and 340,000 shares authorized as of December 31, 2019 and 2020, respectively; no shares issued and outstanding as of December 31, 2019; 294,876 shares issued and outstanding as of December 31, 2020; aggregate liquidation preference of $294,876 as of December 31, 2020	—	281,679
Stockholders' deficit:		
Common stock, $0.0001 par value; 300,000 and 660,000 shares authorized as of December 31, 2019 and 2020, respectively; no shares issued and outstanding as of December 31, 2019; 240,152 shares issued and outstanding as of December 31, 2020	—	13
Additional paid-in capital	—	4,896
Accumulated deficit	(21)	(99,293)
Total stockholders' deficit	(21)	(94,384)
Total liabilities, convertible preferred stock, and stockholders' deficit	$ —	$197,946

The accompanying notes are an integral part of these consolidated financial statements.

NEUMORA THERAPEUTICS, INC.

Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except per share amounts)

	Period from November 22, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Operating expenses:		
Research and development	$ —	$ 17,614
Acquired in-process research and development	—	69,512
General and administrative	21	8,392
Total operating expenses	21	95,518
Loss from operations	(21)	(95,518)
Other income (expense):		
Loss from change in fair value of convertible promissory notes	—	(3,275)
Other expenses, net	—	(479)
Total other income (expense)	—	(3,754)
Net loss and comprehensive loss	$ (21)	$ (99,272)
Net loss per share, basic and diluted	$ —	$ (0.97)
Weighted-average common shares outstanding, basic and diluted	—	101,992

The accompanying notes are an integral part of these consolidated financial statements.

NEUMORA THERAPEUTICS, INC.

Consolidated Statements of Convertible Preferred Stock and Stockholders' Deficit
(in thousands)

	Convertible Preferred Stock		Common Stock		Additional Paid-In Capital	Accumulated Deficit	Total Stockholders' Deficit
	Shares	Amount	Shares	Amount			
Balance as of November 22, 2019 (inception)	—	$ —	—	$ —	$ —	$ —	$ —
Net loss and comprehensive loss	—	—	—	—	—	(21)	(21)
Balance as of December 31, 2019	—	—	—	—	—	(21)	(21)
Issuance of common stock	—	—	254,709	15	3,175	—	3,190
Issuance of common stock under third-party service agreements	—	—	2,100	—	—	—	—
Repurchase of common stock from related party	—	—	(16,667)	(2)	—	—	(2)
Issuance of Series A-1 convertible preferred stock as noncash consideration for an acquisition of assets	45,178	36,595	—	—	—	—	—
Issuance of Series A-2 convertible preferred stock, net of issuance costs of $903	175,620	171,006	—	—	—	—	—
Issuance of Series A-2 convertible preferred stock as noncash consideration for acquisitions of assets	14,898	14,898	—	—	—	—	—
Issuance of common stock as noncash consideration for an acquisition of assets	—	—	10	—	46	—	46
Settlement of convertible promissory notes with shares of Series A-2 convertible preferred stock	59,180	59,180	—	—	—	—	—
Stock-based compensation	—	—	—	—	1,675	—	1,675
Net loss and comprehensive loss	—	—	—	—	—	(99,272)	(99,272)
Balance as of December 31, 2020	294,876	$281,679	240,152	$ 13	$ 4,896	$ (99,293)	$ (94,384)

The accompanying notes are an integral part of these consolidated financial statements.

NEUMORA THERAPEUTICS, INC.

Consolidated Statements of Cash Flows
(in thousands)

	Period from November 22, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
Operating activities:		
Net loss	$ (21)	$ (99,272)
Adjustments to reconcile net loss to net cash used in operating activities:		
Acquired in-process research and development	—	69,512
Change in fair value of convertible promissory notes	—	2,864
Stock-based compensation	—	1,675
Noncash interest expense	—	411
Impairment of property and equipment and right-of-use assets	—	350
Non-cash operating lease expense	—	362
Depreciation and amortization	—	105
Change in fair value of convertible preferred stock warrants	—	(130)
Other	—	487
Changes in operating assets and liabilities:		
Prepaid expenses and other current assets	—	(412)
Other assets	—	(118)
Accounts payable	—	(4,673)
Accrued liabilities	21	2,403
Operating lease liabilities	—	(324)
Net cash used in operating activities	—	(26,760)
Investing activities:		
Cash acquired in connection with acquisitions of assets	—	2,813
Purchases of promissory notes receivable		(12,750)
Purchases of property and equipment	—	(1,300)
Net cash used in investing activities	—	(11,237)
Financing activities:		
Proceeds from issuance of convertible promissory notes	—	55,905
Proceeds from issuance of convertible preferred stock, net of issuance costs	—	171,006
Proceeds from issuance of common stock	—	3,190
Repurchase and retirement of common stock from related party	—	(2)
Net cash provided by financing activities	—	230,099
Net increase in cash and restricted cash	—	192,102
Cash and restricted cash at beginning of year	—	—
Cash and restricted cash at end of year	$ —	$ 192,102
Components of cash and restricted cash:		
Cash	$ —	$ 191,977
Restricted cash	—	125
Total cash and restricted cash	$ —	$ 192,102
Supplemental disclosure of noncash activities:		
Operating lease liabilities arising from obtaining right-of-use assets	$ —	$ 2,991
Supplemental disclosure of noncash investing and financing activities:		
Settlement of convertible promissory notes with shares of Series A-2 convertible preferred stock	$ —	$ 59,180
Issuance of convertible preferred stock as noncash consideration for acquisitions of assets	$ —	$ 51,493
Settlement of promissory notes receivable in connection with acquisitions of assets	$ —	$ 12,750
Net liabilities assumed in connection with acquisitions of assets	$ —	$ 4,867
Issuance of convertible preferred stock warrants as noncash consideration for an acquisition of assets	$ —	$ 742
Purchases of property and equipment included in accounts payable	$ —	$ 162

The accompanying notes are an integral part of these consolidated financial statements.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

1. Organization and Liquidity

Description of Business

Neumora Therapeutics, Inc. (the Company), formerly known as RBNC Therapeutics, Inc., was originally incorporated in the State of Delaware on November 22, 2019 (inception), and is headquartered in Watertown, Massachusetts and also has operations in South San Francisco, California. The Company is a clinical-stage biotechnology company pioneering a precision medicine approach for brain diseases through the integration of data science and neuroscience. The Company's approach aims to redefine neuroscience research and development by applying proprietary artificial intelligence and machine learning methods to multimodal patient datasets in order to match defined patient populations with targeted therapeutics designed to address the underlying drivers of their disease.

For the period from November 22, 2019 (inception) to December 31, 2019, the Company incurred $21,000 in start-up costs to establish operations. Its principal operations commenced in January 2020, when the Company hired executive management and initiated fundraising and business development activities.

As of December 31, 2020, the Company has devoted substantially all of its efforts to building its organization, acquiring technologies and companies, developing its precision neuroscience platform, identifying and developing potential product candidates, executing clinical and preclinical studies, organizing and staffing the Company, business planning, establishing its intellectual property portfolio, raising capital and providing general and administrative support for these operations. The Company has not generated revenue from the sale of products.

Liquidity

The Company has incurred net losses and negative cash flows from operations since inception and, as of December 31, 2020, had an accumulated deficit of $99.3 million. As of December 31, 2020, the Company had cash of $192.0 million, which is available to fund future operations.

The Company expects to incur additional losses in the future as it continues its research and development efforts, advances its product candidates through preclinical and clinical development, enhances its precision neuroscience platform and programs, expands its product pipeline, seeks regulatory approval, prepares for commercialization, as well as hires additional personnel, protects its intellectual property and grows its business. The Company will need to raise substantial additional capital to support its continuing operations and pursue its long-term business plan, including to complete the development and commercialization of its product candidates, if approved. Such activities are subject to significant risks and uncertainties, including clinical failure which can impact the Company's ability to secure additional funding. The Company has historically financed its operations primarily with the proceeds from the issuance of its convertible preferred stock, borrowings pursuant to convertible promissory notes and cash acquired in its acquisitions of assets. The Company may raise additional capital through public or private equity offerings or debt financings or other capital sources, which may include strategic collaborations or other arrangements with third parties, or other sources of financing. However, there is no guarantee that any of these financing or opportunities will be executed or realized on favorable terms, if at all, and some could be dilutive to existing stockholders. The Company's ability to raise additional capital through either the issuance of equity or debt is dependent on a number of factors including, but not limited to, Company prospects, which itself is subject to a number of development and business risks and uncertainties, as well as uncertainty about whether the Company would be able to raise such additional capital at a price or on terms that are favorable.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

In September of 2021, the Company completed the final closing of its Series A-2 convertible preferred stock financing, raising gross proceeds of $291.3 million (see Note 18). The Company believes that its existing cash as of December 31, 2020, together with the proceeds from the final closing of Series A-2 convertible preferred stock financing, will be sufficient to support operations for at least the next 12 months following November 8, 2021, the date these consolidated financial statements were available to be issued.

2. Summary of Significant Accounting Policies and Basis of Presentation

Basis of Presentation and Consolidation

The accompanying consolidated financial statements have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and applicable rules and regulations of the Securities and Exchange Commission (SEC) regarding annual financial reporting. The consolidated financial statements include all accounts of the Company and its wholly-owned subsidiaries. All intercompany transactions and balances have been eliminated in consolidation.

Use of Estimates

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts in the consolidated financial statements and accompanying notes. These estimates form the basis for judgments the Company makes about the carrying values of assets and liabilities that are not readily apparent from other sources. The Company bases its estimates and judgments on historical experience and on various other assumptions that the Company believes are reasonable under the circumstances. These estimates are based on management's knowledge about current events and expectations about actions the Company may undertake in the future. These judgments, estimates and assumptions are used for, but not limited to, accrued research and development expenses, accounting for acquisitions of assets, fair value of certain assets and liabilities, the fair value of the Company's convertible preferred stock, the fair value of the Company's convertible preferred stock warrant liability, the fair value of the Company's common stock, stock-based compensation, and uncertain tax positions and the valuation allowance for net deferred tax assets. Actual results may differ from the Company's estimates.

Segment Reporting

Operating segments are identified as components of an enterprise about which separate discrete financial information is available for evaluation by the chief operating decision maker (CODM), or decision-making group, in making decisions on how to allocate resources and assess performance. The Company's Chief Executive Officer and Chief Operating Officer collectively serve as the CODM. The Company views its operations and manages its business in one operating segment.

Risks and Uncertainties

The Company is subject to certain risks and uncertainties, including, but not limited to, changes in any of the following areas that the Company believes could have a material adverse effect on future financial position or results of operations: successfully develop, manufacture, and market any approved products; obtain regulatory approval from U.S. Food and Drug Administration or foreign regulatory agencies prior to commercial sales; new technological innovations; dependence on key personnel, protection of intellectual property; compliance with governmental regulations; uncertainty of market acceptance of any approved products; product liability; and the need to obtain additional financing.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

While the Company is actively monitoring the impact of the COVID-19 pandemic on its business, the extent of the impact of the pandemic on the Company's business, operations, and clinical development timelines and plans remains uncertain. To date, the COVID-19 pandemic has delayed patient enrollment in the Company's ongoing clinical trials and may further delay the Company's initiation of preclinical studies and clinical trials, interrupt its supply chain, disrupt regulatory activities, or have other adverse effects on its business and operations. The extent of the impact of the COVID-19 pandemic on the Company's preclinical studies or clinical trials will depend on future developments, which are highly uncertain and cannot be predicted with confidence, such as the duration or severity of the pandemic or the effectiveness of containment actions or treatments. In response to the COVID-19 pandemic the Company has taken temporary precautionary measures intended to help minimize its risk of exposure to the virus for its employees, including implementing policies that allow its employees to work remotely and suspending most non-essential travel for its employees, none of which had an adverse impact on the Company's business. Certain third-party service providers have also experienced shutdowns or other business disruptions. However, the Company cannot at this time predict the specific extent, duration, or full impact that the COVID-19 pandemic will have on its consolidated financial condition and results of operations.

Cash and Restricted Cash

Cash includes cash deposited at several financial institutions in operating accounts. Restricted cash primarily consists of credit card accounts and facility lease agreements collateralized by money market accounts pursuant to certain banking agreements. Restricted cash which is unavailable for a period longer than one year from the consolidated balance sheet date is classified as a noncurrent asset. Otherwise, restricted cash is included in other current assets in the consolidated balance sheets.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash deposited in accounts at several financial institutions that may exceed the Federal Deposit Insurance Corporation's insurance limit. The Company is exposed to credit risk in the event of a default by the financial institutions holding its cash to the extent recorded on the consolidated balance sheets. The Company believes it is not exposed to significant credit risk due to the financial position of the financial institutions in which those deposits are held.

Fair Value of Financial Instruments

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. The Company measures fair value by maximizing the use of observable inputs, where available, and minimizing the use of unobservable inputs when measuring fair value. Financial assets and liabilities recorded at fair value in the consolidated balance sheets are categorized in the fair value hierarchy based upon the lowest level of input that is significant to the fair value as follows:

Level 1—Observable inputs such as unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date.

Level 2—Inputs (other than quoted prices included in Level 1) are either directly or indirectly observable inputs for similar assets or liabilities. These include quoted prices for identical or similar assets or liabilities in active markets and quoted prices for identical or similar assets of liabilities in markets that are not active.

Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

To the extent that the valuation is based on models or inputs that are less observable or unobservable in the market, the determination of fair value requires more judgment. Accordingly, the degree of judgment exercised by the Company in determining fair value is greatest for instruments categorized in Level 3 (see Note 3). A financial instrument's level within the fair value hierarchy is based on the lowest level of any input that is significant to the fair value of the instrument.

Fair Value Option

The Company elected the fair value option to account for its convertible promissory notes that were issued and settled during 2020 (the 2020 Bridge Notes or Notes). The Company concluded that it was appropriate to apply the fair value option to the Notes because there were no non-contingent beneficial conversion options such that no component of the Notes was required to be recognized as a component of stockholders' deficit. The Company recorded these Notes at their estimated fair value with changes in estimated fair value recorded as a component of other income (expense) in the consolidated statement of operations and comprehensive loss unless the change is a result of a change in credit risk of the Notes, in which case such change in estimated fair value is recorded within other comprehensive income (loss). As the Notes were issued and settled during the year ended December 31, 2020, any estimated fair value changes related to the credit risk of the Notes were recognized as part of other income (expense) upon settlement of the Notes. No material changes to the credit risk of the Notes occurred during the period the Notes were outstanding. As a result of applying the fair value option, an insignificant amount of direct costs and fees related to the Notes were expensed as incurred.

Property and Equipment, Net

Property and equipment, net is stated at cost less accumulated depreciation. Depreciation of property and equipment is computed using the straight-line method over the estimated useful lives of the assets, which is three to seven years. Leasehold improvements are amortized using the straight-line method over the lesser of the estimated useful lives of the assets or the remaining term of the lease. Construction in progress is stated at cost and not depreciated until the asset is placed into service. Upon sale or retirement of the assets, the cost and related accumulated depreciation are removed from the consolidated balance sheets and the resulting gain or loss is recognized in the consolidated statements of operations and comprehensive loss. Expenditures for maintenance and repairs are expensed as incurred.

Impairment of Long-Lived Assets

The Company reviews the carrying amount of its long-lived assets, including property and equipment and right-of-use assets, for impairment whenever events or changes in business circumstances indicate that the carrying amount of the assets may not be fully recoverable. If indicators of impairment exist, an impairment loss is recognized when the estimated undiscounted future cash flows expected to result from the use of the asset and its eventual disposition are less than its carrying amount. The impairment charge is determined based upon the excess of the carrying value of the asset over its estimated fair value, with estimated fair value determined based upon an estimate of discounted future cash flows or other appropriate measures of estimated fair value. Estimating discounted cash flows requires the Company to make significant judgements and assumptions. Actual results may vary from the Company's estimates as of the date of impairment testing and adjustments may occur in future periods. The Company believes that no revision to the remaining useful lives or write-down of long-lived assets is required as of and for the year ended December 31, 2020, except as disclosed in Note 8.

Leases

The Company determines if an arrangement is or contains a lease at inception by assessing whether it conveys the right to control the use of an identified asset in exchange for consideration. If a lease is identified,

classification is determined at lease commencement. To date, all of the Company's leases have been determined to be operating leases. Operating lease liabilities are recognized at the present value of the future lease payments at the lease commencement date. The Company's leases do not provide an implicit interest rate and therefore the Company estimates its incremental borrowing rate to discount lease payments. The incremental borrowing rate reflects the estimated interest rate that the Company would have to pay to borrow on a collateralized basis an amount equal to the lease payments in a similar economic environment over a similar term. Operating lease right-of-use (ROU) assets are determined based on the corresponding lease liability adjusted for any lease payments made at or before commencement, initial direct costs, and lease incentives. The operating lease ROU asset also includes impairment charges if the Company determines the ROU asset is impaired. The Company considers a lease term to be the noncancelable period that it has the right to use the underlying asset, including any periods where it is reasonably assured the Company will exercise the option to extend the contract. Periods covered by an option to extend are included in the lease term if the lessor controls the exercise of that option. Operating lease expenses are recognized, and the right-of-use assets are amortized on a straight-line basis over the lease term. The Company has elected to not separate lease and non-lease components for its leased assets and accounts for all lease and non-lease components of its agreements as a single lease component. The Company has elected not to recognize on the consolidated balance sheets leases with terms of one year or less.

Acquisitions

The Company evaluates mergers, acquisitions and other similar transactions to assess whether or not the transaction should be accounted for as a business combination or an acquisition of assets. The Company first identifies who is the acquiring entity by determining if the target is a legal entity or a group of assets or liabilities. If control over a legal entity is being evaluated, the Company also evaluates if the target is a variable interest or voting interest entity. For acquisitions of voting interest entities, the Company applies a screen test to determine if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or group of similar identifiable assets. If the screen test is met, the transaction is accounted for as an acquisition of assets. If the screen is not met, further determination is required as to whether or not the Company has acquired inputs and processes that have the ability to create outputs which would meet the definition of a business. Significant judgment is required in the application of the screen test to determine whether an acquisition is a business combination or an acquisition of assets.

For an acquisition of assets, a cost accumulation model is used to determine the cost of the acquisition. Common stock and convertible preferred stock issued as consideration in an acquisition of assets are generally measured based on the acquisition date fair value of the equity interests issued. The Company also determines if any components of a transaction should be accounted for as a part of an acquisition of assets and which should be accounted for separately. Direct transaction costs are recognized as part of the cost of an acquisition of assets. The Company also evaluates which elements of a transaction should be accounted for as a part of an acquisition of assets and which should be accounted for separately.

The cost of an acquisition of assets, including transaction costs, are allocated to identifiable assets acquired and liabilities assumed based on a relative fair value basis. Goodwill is not recognized in an acquisition of assets. Any difference between the cost of an acquisition of assets and the fair value of the net assets acquired is allocated to the non-monetary identifiable assets based on their relative fair values. Assets acquired as part of an acquisition of assets that are considered to be in-process research and development intangible assets (IPR&D) are immediately expensed and recorded as a component of acquired in-process research and development expense in the consolidated statements of operations and comprehensive loss unless there is an alternative future use in other research and development projects.

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In addition to upfront consideration, the Company's acquisitions of assets may also include contingent consideration payments to be made for future milestone events or royalties on net sales of future products. The Company assesses whether such contingent consideration is subject to liability classification and fair value measurement or meets the definition of a derivative. Contingent consideration payments in an acquisition of assets not required to be classified as a liability at fair value, or are accounted for as derivatives that qualify for a scope exception from derivative accounting, are recognized when the contingency is resolved, and the consideration is paid or becomes payable. Contingent consideration payments required to be classified as a liability, or accounted for as derivatives and do not qualify for a scope exception from derivative accounting, are recorded at fair value on the date of the acquisition and are subsequently remeasured to fair value at each reporting date. Contingent consideration payments made prior to regulatory approval are expensed as incurred. Any future payments that are contingent upon continued services to the Company are treated as compensation and recognized when it is probable such amounts will become payable.

If the target legal entity is determined to be a variable interest entity (VIE) and not a business, all tangible and intangible assets acquired, including any IPR&D assets but excluding goodwill, and liabilities assumed, including contingent consideration, are recorded at their fair values. If the acquisition is determined to be a business combination, all tangible and intangible assets acquired, including any IPR&D asset, and liabilities assumed, including contingent consideration, are recorded at their fair value. Goodwill is recognized for any difference between the consideration transferred and fair value determination. In addition, direct transaction costs in connection with business combinations are expensed as incurred, rather than capitalized.

As the Company expensed its acquired IPR&D assets with no alternative future use prior to the measurement of any deferred taxes, no deferred taxes were recognized for the initial differences between the amounts recognized for financial reporting and tax purposes.

Convertible Preferred Stock Warrant Liability

Warrants to purchase shares of the Company's convertible preferred stock (the Preferred Stock Warrants) are freestanding financial instruments classified as a liability on the Company's consolidated balance sheets as the underlying securities are contingently redeemable upon the occurrence of events that are outside of the control of the Company, which precludes equity classification. The Preferred Stock Warrants are recorded at their estimated fair value upon issuance and are subject to remeasurement at the end of each reporting period, with changes in estimated fair value recognized as a component of other income (expense) in the consolidated statements of operations and comprehensive loss, until the exercise or expiration of such warrants. The Company estimates the fair value of Preferred Stock Warrants at each reporting period using the Black-Scholes option pricing model, which requires inputs based on certain subjective assumptions, including the expected stock price, volatility, the expected term of the option, the risk-free interest rate for a period that approximates the expected term of the option, and the expected dividend yield. Actual results may differ from the Company's estimates.

Convertible Preferred Stock

The Company has classified convertible preferred stock, which is contingently redeemable, as temporary equity in the consolidated balance sheets due to terms that allow for the effective redemption of such shares in cash at the option of the holders upon certain liquidation events that are not solely within the Company's control.

The carrying values of the convertible preferred stock are adjusted to their liquidation preferences if and when it becomes probable that such a liquidation event will occur. The Company did not accrete the value of the

convertible preferred stock to its redemption value since a liquidation event was not considered probable as of December 31, 2020. Subsequent adjustments to the carrying values of the convertible preferred stock will be made only when it becomes probable that such liquidation events will occur, causing the shares to become redeemable.

The Company also evaluates the features of its convertible preferred stock to determine if the features require bifurcation from the underlying shares by evaluating whether they are clearly and closely related to the underlying shares and whether they meet the definition of a derivative.

Research and Development Expenses and Related Prepaid Assets and Accrued Liabilities

Research and development costs are expensed as incurred. Research and development expenses primarily consist of internal research and development expense, including personnel-related expenses (such as salaries, benefits and non-cash stock-based compensation) and other expenses, including laboratory supplies and other non-capital equipment utilized for in-house research, research and consulting expenses, software development costs, license fees and allocated expenses, including facilities costs and depreciation and amortization; external research and development expenses incurred under arrangements with vendors conducting research and development services on its behalf, such as contract research organizations (CROs), preclinical testing organizations and contract manufacturing organizations (CMOs). Costs to develop the Company's platform information technologies are recorded as research and development expense unless the criteria to be capitalized as internal-use software costs is met. Payments made prior to the receipt of goods or services to be used in research and development are capitalized, evaluated for current or long-term classification, and included in prepaid expenses and other current assets or other assets on the consolidated balance sheets based on when the goods are received or the services are expected to be received or consumed, and recognized in research and development expenses when they are realized.

The Company is required to estimate expenses resulting from its obligations under contracts with vendors, service providers and clinical site agreements in connection with conducting clinical trials. The financial terms of these contracts are subject to negotiations which vary from contract to contract and may result in cash flows that do not match the periods over which materials or services are provided. The Company estimates and records accrued expenses for the related research and development activities based on the level of services performed but not yet invoiced pursuant to agreements established with its service providers, according to the progress of preclinical studies, clinical trials or related activities, and discussions with applicable personnel and service providers as to the progress or state of consummation of goods and services.

During the course of a clinical trial, the rate of expense recognition is adjusted if actual results differ from the Company's estimates. The Company makes judgments and estimates of accrued expenses as of each balance sheet date in its consolidated financial statements based on the facts and circumstances known at that time. The clinical trial accrual is dependent in part upon the timely and accurate reporting of CROs, CMOs and other third-party vendors. Although the Company does not expect its estimates to be materially different from amounts actually incurred, its estimate may vary from the actual results. To date, the Company has not experienced material differences between its accrued expenses and actual expenses.

Stock-Based Compensation

The Company maintains equity incentive plans (the Plans) as a long-term incentive for employees, directors, and non-employee service providers. The Company accounts for all stock-based awards based on their fair value on the date of the grant. For stock-based awards with service only vesting conditions, the Company recognizes

expense on a straight-line basis over the requisite service period, which is generally the vesting period of the respective award. For awards with performance vesting conditions, the Company evaluates the probability of achieving the performance vesting condition at each reporting date. The Company begins to recognize expense for awards with performance based vesting conditions using an accelerated attribution method when it is deemed probable that the performance condition will be met. Stock-based compensation is classified in the consolidated statements of operations and comprehensive loss based on the function to which the related services are provided. Forfeitures are accounted for as they occur.

The fair value of stock option awards is estimated on the date of grant using the Black-Scholes option pricing model, which requires inputs based on certain subjective assumptions, including the expected stock price volatility, the expected term of the option, the risk-free interest rate for a period that approximates the expected term of the option, and the expected dividend yield. The fair value of restricted stock awards is based on the estimated fair value of the Company's common stock on the date of grant.

The fair value of the Company's common stock is determined by the Company's board of directors with the assistance of management. The fair value of common stock is determined using valuation methodologies which utilize certain assumptions including probability weighting of events, volatility, time to an exit event, a risk-free interest rate and an assumption for a discount for lack of marketability. In determining the fair value of common stock, the methodologies used to estimate the enterprise value of the Company were performed using methodologies, approaches, and assumptions consistent with the American Institute of Certified Public Accountants' Accounting and Valuation Guide, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*.

Income Taxes

The Company accounts for income taxes under the asset and liability method. Under this method, deferred tax assets and liabilities are recognized for the expected future tax consequences of events that have been included in the Company's consolidated financial statements and tax returns. Deferred tax assets and liabilities are determined based upon the differences between the financial statement carrying amounts and the tax bases of existing assets and liabilities and for loss and credit carryforwards, using enacted tax rates expected to be in effect in the year in which the differences are expected to reverse. Deferred tax assets are reduced by a valuation allowance if it is more likely-than-not that these assets may not be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which the temporary differences representing net future deductible amounts become deductible.

The Company recognizes and measures uncertain tax positions using a two-step approach. The Company determines whether it is more likely than not that a tax position will be sustained upon examination. If it is not more likely-than-not that a position will be sustained, none of the benefit attributable to the position is recognized. The tax benefit to be recognized for any tax position that meets the more-likely-than-not recognition threshold is calculated as the largest amount that is more than 50% likely of being realized upon resolution of the contingency. Judgment is required to evaluate uncertain tax positions. The Company evaluates uncertain tax positions on a regular basis. The evaluations are based on a number of factors, including changes in facts and circumstances, changes in tax law, correspondence with tax authorities during the course of the audit, and effective settlement of audit issues.

The Company's policy is to include penalties and interest expense related to income taxes as a component of its provision for income taxes. The Company has not reported any interest or penalties associated with income tax since inception.

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In March 2020, the Families First Coronavirus Response Act (FFCR Act) and the Coronavirus Aid, Relief, and Economic Security Act (CARES Act) were each enacted in response to the COVID-19 pandemic. The FFCR Act and the CARES Act contain numerous income tax provisions relating to refundable payroll tax credits, deferment of employer side social security payments, net operating loss carryback periods, alternative minimum tax credit refunds, modifications to the net interest deduction limitations and technical corrections to tax depreciation methods for qualified improvement property.

In June 2020, Assembly Bill 85 (A.B. 85) was signed into California law. A.B. 85 provides for a three-year suspension of the use of net operating losses for medium and large businesses and a three-year cap on the use of business incentive tax credits to offset no more than $5.0 million of tax per year. A.B. 85 suspends the use of net operating losses for taxable years 2020, 2021 and 2022 for certain taxpayers with taxable income of $1.0 million or more. The carryover period for any net operating losses that are suspended under this provision will be extended. A.B. 85 also requires that business incentive tax credits including carryovers may not reduce the applicable tax by more than $5.0 million for taxable years 2020, 2021 and 2022.

In December 2020, the Consolidated Appropriations Act, 2021 (CAA) was signed into law. The CAA included additional funding through tax credits as part of its economic package for 2021.

The FFCR Act, CARES Act, A.B. 85 and CAA did not have a material impact on the Company's consolidated financial statements; however, the Company continues to examine the impacts the FFCR Act, CARES Act, A.B. 85 and CAA may have on its business, results of operations, financial condition and liquidity.

Net Loss Per Share

Basic net loss per share is calculated by dividing net loss by the weighted-average number of shares of common stock outstanding during the period, without consideration for common stock equivalents. Diluted net loss per share is the same as basic net loss per share, since the effects of potentially dilutive securities are antidilutive given the net loss for each period presented.

Comprehensive Loss

Comprehensive loss represents the change in the Company's stockholders' deficit from all sources other than investments by or distributions to stockholders. The Company has no items of other comprehensive loss, and as such, net loss is the same as comprehensive loss.

Restructuring

The Company recognizes restructuring charges related to reorganization plans that have been committed to by management and when liabilities have been incurred. In connection with these activities, the Company records restructuring charges at fair value for (i) contractual employee termination benefits when obligations are associated to services already rendered, rights to such benefits have vested, and payment of benefits is probable and can be reasonably estimated, and (ii) one-time employee termination benefits when management has committed to a plan of termination, the plan identifies the employees and their expected termination dates, the details of termination benefits are complete, it is unlikely changes to the plan will be made or the plan will be withdrawn and communication to such employees has occurred.

One-time employee termination benefits are recognized in their entirety when communication has occurred, and future services are not required. Contract termination costs to be incurred over the remaining contract term without economic benefit are recorded in their entirety when the contract is canceled.

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The recognition of restructuring charges requires the Company to make certain judgments and estimates regarding the nature, timing and amount of costs associated with the planned reorganization plan. At the end of each reporting period, the Company evaluates the remaining accrued restructuring balances to ensure that no excess accrued liabilities are retained, and the utilization of the provisions are for their intended purpose in accordance with developed restructuring plans.

Emerging Growth Company Status

The Company is an emerging growth company, as defined in the Jumpstart Our Business Startups Act of 2012 (the JOBS Act). Under the JOBS Act, emerging growth companies can delay adopting new or revised accounting standards issued subsequent to the enactment of the JOBS Act, until such time as those standards apply to private companies. The Company has elected to use this extended transition period for complying with new or revised accounting standards that have different effective dates for public and private companies until the earlier of the date that it (i) is no longer an emerging growth company or (ii) affirmatively and irrevocably opts out of the extended transition period provided in the JOBS Act. As a result, these consolidated financial statements may not be comparable to companies that comply with the new or revised accounting pronouncements as of public company effective dates.

Recent Accounting Pronouncements

In May 2021, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) 2021-04, *Issuer's Accounting for Certain Modifications or Exchanges of Freestanding Equity-Classified Written Call Options* (ASU 2021-04), which requires issuers to account for a modification or exchange of freestanding equity-classified written call options that remain equity classified after the modification or exchange based on the economic substance of the modification or exchange. ASU 2021-04 is effective for the Company as of January 1, 2022, with early adoption permitted. The Company does not expect the ASU to have a material impact on its consolidated financial statements and related disclosures.

3. Fair Value Measurements

The carrying amounts of the Company's financial instruments, including prepaid expenses and other current assets, accounts payable, accrued liabilities and operating lease liabilities approximate fair value due to the short-term nature of those instruments.

As of December 31, 2019, there were no assets and liabilities that were measured at fair value on a recurring or nonrecurring basis. As of December 31, 2020, there were no assets that were measured at fair value on a recurring or nonrecurring basis. The following table summarizes the Company's financial liabilities measured at fair value on a recurring basis by level within the fair value hierarchy:

	December 31, 2020			
	Level 1	Level 2	Level 3	Total
	(in thousands)			
Liabilities:				
Convertible preferred stock warrant liability	$ —	$ —	$ 612	$ 612
Total liabilities	$ —	$ —	$ 612	$ 612

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Notes to Consolidated Financial Statements

Convertible Preferred Stock Warrant Liability

In September 2020, the Company issued Preferred Stock Warrants to purchase shares of its Series A-1 convertible preferred stock (see Note 12), which do not meet the criteria for equity classification. The estimated fair value of the convertible preferred stock warrant liability was determined based on significant inputs not observable in the market, which represents a Level 3 measurement within the fair value hierarchy.

The following table summarizes the significant unobservable inputs used in the fair value measurement of the convertible preferred stock warrant liability during the year ended December 31, 2020:

Fair Value Range (in millions)	Valuation Technique	Unobservable Input	Input Range
$0.6 – $0.7	Black-Scholes option pricing model	Fair value of Series A-1 convertible preferred stock (per share)	$0.81 – $0.81
		Expected volatility	123.4% – 123.4%
		Expected term (years)	1.0 – 1.3
		Expected dividend yield	0.0% – 0.0%

2020 Bridge Notes

During 2020, the Company issued $55.9 million in convertible promissory notes (the 2020 Bridge Notes or Notes) and in September 2020, the Notes were settled with shares of the Company's Series A-2 convertible preferred stock (see Note 7). The Company elected the fair value option to account for its Notes issued in 2020.

The Notes were valued using a scenario-based analysis. Two primary scenarios were considered: the qualified financing scenario and the default scenario. The value of the Notes under each scenario were probability weighted to arrive at the estimated fair value for the Notes. The qualified financing scenario considers the value impact of conversion at the stated discount to the issue price if the Company completes a qualifying financing event by raising $50.0 million in an equity financing before the maturity date. The default scenario assumes the qualified financing event does not occur and the Company is in distress, resulting in a partial or no recovery of the Notes. A recovery rate on the Notes in the default scenario considers the Company's net asset value relative to the size of the Note. As of the issuance date of the Notes, the probability of default was calculated such that the probability-weighted value of the Notes was equal to the principal investment amount. The implied probability of default of previously issued Notes is carried forward and used as the probability of default for subsequent valuation dates. It was assumed that the probability of the Notes reaching contractual maturity was not material as of the valuation dates, given the proximity to the qualified financing and the Company's financing needs.

The following table summarizes the significant unobservable inputs used in the fair value measurement of the Notes during the year ended December 31, 2020:

Fair Value Range (in millions)	Valuation Technique	Unobservable Input	Input Range
$55.9 – $58.8	Scenario-based analysis	Discount rate	11.9% – 13.3%
		Timing of the scenarios	0.0 – 1.0 years
		Probability of qualified financing	87.4% – 100.0%
		Probability of default recover rate	0.0% – 12.6%

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The following table provides a summary of the changes in the fair value of the Company's liabilities measured using Level 3 inputs:

	December 31, 2020
	(in thousands)
Balance as of December 31, 2019	$ —
Issuance of Preferred Stock Warrants	742
Issuance of Notes	55,905
Change in fair value of Preferred Stock Warrants	(130)
Change in fair value Notes immediately prior to settlement	2,864
Settlement of Notes	(58,769)
Balance as of December 31, 2020	$ 612

4. Property and Equipment, Net

Property and equipment, net, consisted of the following:

	December 31,	
	2019	2020
	(in thousands)	
Laboratory equipment	$ —	$ 1,531
Computer and software	—	107
Furniture and fixtures	—	193
Leasehold improvements	—	207
Total property and equipment	—	2,038
Less: accumulated depreciation and amortization	—	(105)
Total property and equipment, net	$ —	$ 1,933

Depreciation and amortization expense was $0.1 million for the year ended December 31, 2020. As of December 31, 2020, all of the Company's property and equipment was located in the United States.

5. Balance Sheet Components

Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets consisted of the following:

	December 31,	
	2019	2020
	(in thousands)	
Prepaid research and development costs	$ —	$ 813
Prepaid other	—	778
Other receivables	—	148
Total prepaid expenses and other current assets	$ —	$ 1,739

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Accrued Liabilities

Accrued liabilities consisted of the following:

	December 31,	
	2019	2020
	(in thousands)	
Compensation and benefits	$ —	$ 3,515
Accrued clinical trial and pre-clinical costs	—	1,167
Professional services	21	444
Other	—	470
Total accrued liabilities	$ 21	$ 5,596

6. Acquisitions of Assets

BlackThorn Therapeutics, Inc.

In June 2020, the Company entered into an agreement and plan of merger (BlackThorn Merger Agreement) to acquire all of the equity interests of BlackThorn Therapeutics, Inc. (BlackThorn), a privately held company. The acquisition of BlackThorn allowed the Company to expand its program pipeline by adding two clinical-stage research and development programs. The first was focused on the treatment of major depressive disorder using an antagonist of the Kappa Opioid Receptor (NMRA-140) and the second was focused on the treatment of anxiety disorders using an antagonist of the Vasopressin 1a Receptor (NMRA-511). Both NMRA-140 and NMRA-511 were exclusively licensed to BlackThorn by The Scripps Research Institute (TSRI). Through the acquisition of BlackThorn, the Company also gained access to a cloud-based computational psychiatry and data platform that was being developed to support drug target identification, patient stratification and objective clinical trial endpoints (the BlackThorn Data Science IPR&D Assets). The BlackThorn Merger Agreement became effective on September 8, 2020, concurrent with the initial closing of the Company's Series A-2 convertible preferred stock financing (the Closing Date). Between April and August 2020, the Company also purchased promissory notes issued by BlackThorn in the amount of $11.0 million. The promissory notes had a maturity date of September 2020 and carried an interest rate of 5.0%. The promissory notes were collateralized by substantially all of BlackThorn's assets.

The total upfront consideration transferred to stockholders of BlackThorn consisted of (i) an aggregate of 45,178,495 shares of the Company's Series A-1 convertible preferred stock, with an acquisition date fair value of $36.6 million, (ii) Preferred Stock Warrants to purchase 2,292,672 shares of the Company's Series A-1 convertible preferred stock, with an acquisition date fair value of $0.7 million, and (iii) cash of $0.1 million. The Company also agreed to settle $11.0 million in principal plus accrued interest due from BlackThorn related to the promissory notes. As part of the acquisition, the Company incurred transaction costs of $1.6 million.

The fair value of the Company's Series A-1 convertible preferred stock of $0.81 per share was determined using an option pricing model (OPM) framework and utilized the back-solve method for inferring and allocating the equity value predicated on the Company's Series A-2 convertible preferred stock financing and the price of $1.00 per share paid by third-party investors. The shares of Series A-1 convertible preferred stock issued to the BlackThorn stockholders generally have the same rights, preferences and privileges as the Series A-2 convertible preferred shares issued to the third-party investors, other than they are junior in liquidation preference and have more limited voting rights (see Note 11). The fair value of the Preferred Stock Warrants was estimated based on a Black-Scholes option pricing model (see Note 3). The promissory notes were determined to be at fair value due to the short period of time they were outstanding.

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The Company concluded that BlackThorn was not a variable interest entity (VIE) and that substantially all of the fair value of the gross assets of BlackThorn that were acquired was concentrated in a single identifiable group of similar IPR&D assets. These IPR&D assets were comprised of the two clinical-stage research and development programs involving NMRA-140 and NMRA-511, as well the BlackThorn Data Science IPR&D Assets. Accordingly, the acquired set of assets and activities did not meet the definition of a business and the transaction was accounted for as an acquisition of assets. As a result, the fair value of the upfront consideration transferred, which included the fair value of the settlement of the promissory notes, and transaction costs incurred were allocated to the identifiable assets acquired and liabilities assumed based on their relative fair values as follows (in thousands):

IPR&D assets	$ 48,253
Assembled workforce	422
Property and equipment	973
Other assets and liabilities, net	359
Total net assets acquired	$ 50,007

The estimated fair values of the clinical stage program IPR&D assets were determined using a risk-adjusted discounted cash flow approach, which used the present value of the direct cash flows expected to be generated by these assets during their estimated economic lives, net of returns on contributory assets such as working capital, property and equipment, and the assembled workforce as adjusted for probabilities of success associated with each stage in the clinical development process ranging from 9.6% to 63.2%. The discount rate of 22.3% was based on rates of return available from alternative investments of similar type and quality as of the valuation date (Level 2 and 3 inputs). The estimated fair value of the BlackThorn Data Science IPR&D Assets was based on a cost replacement approach. The estimate of the fair value of the property and equipment was based on a market approach (Level 2 inputs). The estimate of the fair value of the assembled workforce was determined using a replacement cost approach, based on the estimated cost of recruiting and training an equivalent workforce as of the acquisition date (Level 3 inputs).

The cost attributed to the IPR&D assets were immediately recognized as acquired in-process research and development expense in the Company's consolidated statement of operations and comprehensive loss as the IPR&D assets were related to programs associated with and/or predicated on ongoing clinical trials success that had no alternative future use as of the acquisition date. The cost attributable to the assembled workforce was expensed to research and development expense and was not considered material to the consolidated financial statements.

The BlackThorn Merger Agreement requires the Company to pay the former stockholders of BlackThorn contingent consideration (i) with respect to NMRA-140, in the form of development and regulatory approval milestones of up to an aggregate amount of $365.0 million, including the potential for a milestone payment of $75.0 million upon completion of the Phase 2a clinical trial of NMRA-140 if certain success criteria are achieved, and sales-based milestones of up to an aggregate amount of $450.0 million and (ii) with respect to NMRA-511, in the form of development and regulatory approval milestones of up to an aggregate amount of $100.0 million, and sales-based milestones of up to an aggregate amount of $100.0 million (the BlackThorn Milestones). At the Company's sole discretion, the BlackThorn Milestone payments may be settled in cash or shares of the Company, or a combination of both, subject to the provisions of the BlackThorn Merger Agreement, other than one development milestone in the amount of $10.0 million, which must be settled in cash. None of the BlackThorn Milestones were subject to liability classification and/or derivative accounting and any such contingent consideration will be recognized when the contingency is resolved, and the consideration becomes payable. For the year ended December 31, 2020, no such amounts were deemed due or payable.

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Upon closing of the acquisition, BlackThorn become a wholly-owned subsidiary of the Company and all outstanding stock options, vested or unvested, to purchase common stock of BlackThorn under the BlackThorn 2015 Equity Incentive Plan (the 2015 Plan) were converted to options to purchase 2,330,374 shares of the Company's common stock (the BlackThorn Replacement Stock Options). The conversion ratio was determined by dividing the fair value per share of BlackThorn common stock by the fair value per share of Company common stock immediately prior to the Closing Date. The BlackThorn Replacement Stock Options were considered new awards whereby the fair value of the awards of $0.5 million was measured on the Closing Date and will be recognized as compensation in the post-acquisition period.

BlackThorn Carveout Plan

The BlackThorn Merger Agreement required that the Company establish a carveout plan (the BlackThorn Carveout Plan), pursuant to which each BlackThorn stock option holder as of immediately prior to the Closing Date was allocated a certain number of units (the BlackThorn Carveout Units) based on the number of shares underlying the outstanding options held by each participant at that time. Each BlackThorn Carveout Unit represents a right to receive a portion of the BlackThorn Milestone payment (the BlackThorn Carveout Payments) upon the later of (i) the achievement of a BlackThorn Milestone and (ii) the vesting of the BlackThorn Carveout Unit.

The BlackThorn Carveout Payment shall be equal to the product of (i) such BlackThorn Milestone payment, and (ii) the quotient (expressed as a percentage) obtained by dividing (a) the number of BlackThorn Carveout Units outstanding as of such BlackThorn Milestone trigger event (whether vested or unvested) by (b) the number of fully diluted common shares of former stockholders of BlackThorn as of the Closing Date.

The BlackThorn Carveout Units vest based on time-based schedules that mirror the vesting schedules for the original option awards held by each participant. As of the Closing Date, a portion of the BlackThorn Carveout Units corresponding to the pre-acquisition service periods were fully vested (Vested Carveout Units). The remainder of the BlackThorn Carveout Units vest subject to the continued service of the participants. Once vested, the BlackThorn Carveout Units will only expire upon such time that all amounts payable under the plan have been paid. Any portion of the BlackThorn Carveout Payments related to forfeitures upon termination of a participant's continued service to the Company prior to vesting of the BlackThorn Carveout Units become part of the BlackThorn Milestone payments that are payable to the former stockholders of BlackThorn.

The Vested Carveout Units represent contingent consideration for the acquisition as they are attributable to pre-acquisition services rendered by the participants and continuing service is not required for the participants to receive future payments upon a BlackThorn Milestone being achieved. The Company will recognize the contingent consideration obligation for the Vested Carveout Units when the contingency is resolved and the consideration becomes payable. The BlackThorn Carveout Units that were unvested as of the Closing Date are dependent on the continued service of participants and were deemed to be a compensation arrangement. The Company will recognize the compensation starting from the time payment becomes probable over each participant's service period. As of December 31, 2020, none of the BlackThorn Milestones had been achieved or were probable of being achieved, and no contingent consideration obligation or compensation related to the BlackThorn Carveout Plan had been recorded.

Syllable Life Sciences, Inc.

In September 2020, and predicated on the initial closing the Company's Series A-2 convertible preferred stock financing, but not dependent upon the closing of the other September 2020 acquisitions, the Company entered

into an agreement and plan of merger (Syllable Merger Agreement) to acquire all of the outstanding equity of Syllable Life Sciences, Inc. (Syllable). The Company acquired Syllable to gain access the rights granted to Syllable under an exclusive license agreement (as amended, the Harvard License Agreement) with President and Fellows of Harvard College (Harvard) and an associated behavior analysis machine learning and computer vision software tool which Syllable was developing to identify and quantify behavior as an indicator of neurological conditions (collectively, the Syllable IPR&D).

The total upfront consideration transferred to the former stockholders of Syllable consisted of 4,894,847 shares of the Company's Series A-2 convertible preferred stock, with an estimated acquisition date fair value of $4.9 million. The Company also incurred transaction costs of $0.4 million to acquire Syllable. In addition, the Company assumed net liabilities of $0.7 million, including a payment obligation of $0.4 million to Harvard pursuant to the Harvard License Agreement. The Syllable Merger Agreement became effective as of the Closing Date.

The fair value of the Company's Series A-2 convertible preferred stock of $1.00 was established using the price per share paid by third-party investors in the concurrent closing of the Series A-2 convertible preferred stock financing.

The Company concluded Syllable was not a VIE and substantially all of the fair value of the gross assets of Syllable acquired were concentrated in a single identifiable IPR&D asset: the Syllable IPR&D. Accordingly, the acquired set of assets and activities did not meet the definition of a business and the transaction was accounted for as an acquisition of assets. As a result, the fair value of the upfront consideration transferred as well as the transaction costs were allocated to the identifiable tangible and intangible assets acquired and liabilities assumed based on their relative fair values (considering Level 2 and Level 3 inputs), resulting in $5.9 million being assigned to the Syllable IPR&D asset and $0.7 million for net liabilities assumed.

The cost attributed to the Syllable IPR&D asset was immediately recognized as acquired in-process research and development expense in the Company's consolidated statement of operations and comprehensive loss as it was determined to have no alternative future use as of the acquisition date.

The former stockholders of Syllable are entitled to contingent consideration in the form of development milestones of up to an aggregate of $5.0 million (Syllable Milestones). At the Company's sole discretion, the Syllable Milestone payments may be settled, in cash or shares equity of the Company, or a combination of both, subject to the provisions of the Syllable Merger Agreement and were not subject to liability classification and/or derivative accounting. Any such contingent consideration will be recognized when the contingency is resolved, and the consideration becomes payable. For the year ended December 31, 2020, no such amounts were deemed due or payable.

Propellex Bio, Inc.

In September 2020, and predicated on the initial closing of the Company's Series A-2 convertible preferred stock financing, but not dependent upon the closing of the other September 2020 acquisitions, the Company entered into an agreement and plan of merger (Propellex Merger Agreement) to acquire all of the outstanding equity of Propellex Bio, Inc. (Propellex). The Company acquired Propellex to gain access to the rights granted to Propellex under an exclusive license with TSRI related to preclinical molecules that were indicated for the potential treatment of Parkinson's disease and other neurodegenerative diseases.

The total upfront consideration transferred to the former stockholders of Propellex consisted of 10,002,633 shares of the Company's Series A-2 convertible preferred stock, with an acquisition date fair value of $10.0 million.

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The Company also incurred transaction costs of $0.5 million to acquire Propellex. In addition, the Company assumed net liabilities of $0.6 million. The Propellex Merger Agreement became effective as of the Closing Date.

The fair value of the Company's Series A-2 convertible preferred stock of $1.00 was established using the price per share paid by third-party investors in the concurrent closing of the Series A-2 convertible preferred stock financing.

The Company concluded Propellex was not a VIE and substantially all of the fair value of the gross assets of Propellex acquired were concentrated in a single identifiable IPR&D project associated with the TSRI license and pre-clinical small-molecule inhibitors and related research results (the Propellex IPR&D). As a result, the fair value of the upfront consideration transferred as well as the transaction costs were allocated to the identified tangible and intangible assets acquired and liabilities assumed based on their relative fair values (considering Level 2 and Level 3 inputs), resulting in $11.1 million being assigned to the Propellex IPR&D asset and $0.6 million for net liabilities assumed.

The cost attributed to the Propellex IPR&D asset was immediately recognized as acquired in-process research and development expense in the Company's consolidated statement of operations and comprehensive loss as it was determined to have no alternative future use as of the acquisition date.

The former stockholders of Propellex were entitled to contingent consideration in the form of development and regulatory approval milestones of up to an aggregate amount of $62.5 million and in the form of sales-based milestones of up to an aggregate amount of $160.0 million (the Propellex Milestone) of which $7.5 million was only settleable in shares of the Company's Series A-2 convertible preferred stock. This contingent consideration was classified as a liability because the Series A-2 convertible preferred stock is contingently redeemable upon the occurrence of events that are outside of the control of the Company. The fair value of the contingent consideration liability at the acquisition date and though December 31, 2020 was determined to be de minimis based on the termination of the Propellex IPR&D program shortly after the acquisition. The remaining contingent consideration settleable in cash or shares of the Company at the Company's election or only in cash and were not subject to liability classification and/or derivative accounting. In addition, if the Company granted a license to a non-affiliate third party under the Propellex technology for a Propellex therapeutic product, the Company would also be required to pay to the former stockholders of Propellex a portion of the consideration received from such licensee for the grant of the license, depending on the date of receipt of the applicable license revenue from such licensee. Any such contingent consideration will be recognized when the contingency is resolved, and the consideration becomes payable. For the year ended December 31, 2020, no such amounts were deemed due or payable.

In April 2021, the Company terminated all efforts related to the Propellex IPR&D program.

Alairion, Inc.

In November 2020, the Company entered into an agreement and plan of merger (Alairion Merger Agreement) to acquire all of the outstanding equity of Alairion, Inc. (Alairion). The acquisition of Alairion allowed the Company to expand its program pipeline by gaining rights to two preclinical stage research and development
programs focused on the treatment of sleep disorders, an H1 receptor antagonist program (the H1 Program) and a GABA receptor positive allosteric modulator program (the GABA Program). The acquisition also provided the Company with access to a license for software that records sleep and related drug discovery and optimization technology platform (the Alairion IRP&D Technology). In September 2020, the Company purchased a

promissory note issued by Alairion in the amount of $1.8 million. The promissory note was due any time on or after September 2021 on written demand by the Company, and the interest rate was 4.0%. The note was collateralized by substantially all of Alairion's assets.

The total upfront consideration transferred to the former stockholders of Alairion consisted of the settlement of the secured promissory note of $1.8 million. The Company also incurred direct transaction costs of $0.3 million to acquire Alairion. In addition, the Company assumed net liabilities of $2.1 million, consisting primarily of accounts payable and accrued liabilities. The promissory note was determined to be at fair value due to the short period of time it was outstanding.

The Company concluded Alairion was not a VIE and substantially all of the fair value of the gross assets of Alairion acquired were concentrated in a single identifiable group of similar IPR&D assets. These IPR&D assets comprised of the H1 Program, the GABA Program and the Alairion IPR&D Technology. Accordingly, the acquired set of assets and activities did not meet the definition of a business and the transaction was accounted for as acquisition of assets. As a result, the fair value of the upfront consideration transferred as well as transaction costs incurred was allocated to the identified tangible and intangible assets acquired and liabilities assumed based on their relative fair values (considering Level 2 and Level 3 inputs), resulting in $4.3 million being assigned to the IPR&D assets and $2.1 million for net liabilities assumed.

The cost attributed to the IPR&D assets were immediately recognized as acquired in-process research and development expense in the Company's consolidated statement of operations and comprehensive loss as these IPR&D assets were determined to have no alternative future use as of the acquisition date. The holders of Alairion common stock outstanding as of immediately prior to the closing date received non-transferable rights to future milestone payments of up to $33.5 million upon the achievement of specified development events and $135.0 upon the achievement of specified commercialization events related to the H1 Program and the GABA Program (the Alairion Milestones).

The Alairion Milestone payments may be settled, at the Company's sole discretion, in cash or shares of the Company, or a combination of both, subject to the provisions of the Alairion Merger Agreement. None of the Alairion Milestones were subject to liability classification and/or derivative accounting and any such contingent consideration will be recognized when the contingency is resolved, and the consideration becomes payable. For the year ended December 31, 2020, no such amounts were deemed due or payable.

Alairion Carveout Plan

The Alairion Merger Agreement also required the Company to establish a carveout plan (the Alairion Carveout Plan) pursuant to which a portion of the payments under the Alairion Milestones, up to $3.0 million (the Alairion Carveout Payments), are reserved for participants under the Alairion Carveout Plan. Participants in the Alairion Carveout Plan are comprised of former Alairion employees, several of whom were retained as employees or consultants of the Company post-acquisition. Under the Alairion Carveout Plan, the Company granted the participants retention units, each representing a right to receive future payments upon the completion of Phase 2 clinical studies with respect to either the H1 Program or the GABA Program and achievement of the related Alairion Milestone, subject to the continued service of the participant until such time and were deemed to be a compensation arrangement. The retention units are forfeited if a participant's service is terminated prior to the receipt of results from the Phase 2 clinical studies associated with the H1 Program and GABA Program. The Company will recognize such compensation starting from the time payment becomes probable over each participant's service period. During the year ended December 31, 2020, the Company did not recognize any compensation related to the Alairion Carveout Payments because it was not probable that Phase 2 clinical studies would be achieved.

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7. Convertible Promissory Notes

Between February and September 2020, the Company issued the 2020 Bridge Notes with an aggregate principal amount of $55.9 million to various investors, one of which was a significant stockholder of the Company and a related party to the Company. The 2020 Bridge Notes bore interest rates of 3.0% or 5.0% and were repayable upon demand by the holders at any time after February 2021 or March 2021. The 2020 Bridge Notes would automatically convert into shares of the Company's capital stock upon the closing of a financing in which shares of the Company's capital stock were issued to one or more investors resulting in gross cash proceeds to the Company of at least $50.0 million (Qualified Financing). The number of shares to be issued in connection with the conversion of the 2020 Bridge Notes were determined as (i) the sum of the outstanding principal amount and all accrued but unpaid interest divided by (ii) 85%, 95% or 100% of the cash purchase price paid by the investors in the Qualified Financing. In the event of a change of control including a merger, consolidation, sale by stockholders of the Company of capital stock representing at least 50% of the outstanding voting power of the Company, or a similar corporate transaction, the Company was required to redeem the 2020 Bridge Notes from the holders at 150% of the then-outstanding principal balance in cash. Upon an event of default, including failure to comply with the Company's payment and other obligations under the 2020 Bridge Notes, the outstanding principal and unpaid interest would be immediately due and payable.

In September 2020, the Company completed a Series A-2 convertible preferred stock financing that satisfied the condition of a Qualified Financing. The outstanding principal and accrued interest under the 2020 Bridge Notes with a fair value of $59.2 million were settled by issuing 59,180,294 shares of the Company's Series A-2 convertible preferred stock (Series A-2 Preferred) to the holders. As the Company elected the fair value option to account for the 2020 Bridge Notes (see Note 3), no gain or loss was recognized upon settlement.

Concurrent with the issuance of the 2020 Bridge Notes, the Company issued an aggregate of 51,508,327 shares of its common stock to certain of the holders in return for commitments to participate in the Company's Series A-2 Preferred stock financing. Such shares of common stock were subject to the investors' right of forfeiture that lapsed upon fulfillment of their respective commitments to the Company in one or more subsequent closings of the Company's Series A-2 Preferred stock financing. The funding commitments, together with the embedded shares of common stock, were determined to be freestanding instruments apart from the 2020 Bridge Notes (the funding commitment asset or FCA). The Company determined that the FCA (i) did not meet the criteria to be classified as a liability on its consolidated balance sheets, (ii) qualified for a scope exception from derivative accounting, and (iii) was not required to be measured at fair valued at inception (or subsequently). Accordingly, the proceeds received from the 2020 Bridge Notes were allocated to the FCA on a residual basis, and such residual value was determined to be insignificant at inception.

As of December 31, 2020, the FCA held by one investor to purchase 10,000,000 shares in the Company's Series A-2 Preferred remained outstanding and accordingly, 7,500,000 shares of common stock were subject to the investor's right of forfeiture.

8. Restructuring

In October 2020, the Company initiated a partial reduction-in-force whereby eight employees located at its Brannan Street, San Francisco laboratory facility (Brannan) were terminated. The Company substantially completed the reduction-in-workforce in the fourth quarter of 2020 and recognized severance benefits and related costs of approximately $0.5 million in research and development expenses in the consolidated statement of operations and comprehensive loss for the year ended December 31, 2020. There were no material remaining payment obligations related to termination benefits to the Company's former employees as of December 31, 2020. In addition, in December 2020, the Company entered into a lease termination agreement to early terminate

the Brannan lease, which was originally due to expire in December 2021, in exchange for payment of a one-time termination fee of $0.3 million. Effective as of December 31, 2020, the Company had no further payment obligations under the Brannan lease. The Company recognized a $0.6 million reduction of operating lease right-of-use assets and a corresponding $0.7 million reduction of operating lease liabilities in the consolidated balance sheet as of December 31, 2020.

In addition, the Company evaluated indicators of impairment for the property and equipment located at Brannan in connection with its plans to exit such facility. The Company concluded that the carrying value of the leasehold improvement assets were not fully recoverable and recognized an impairment charge of $0.4 million, which was included in other expenses, net in the consolidated statement of operations and comprehensive loss for the year ended December 31, 2020.

9. Commitments and Contingencies

Leases

The Company did not have any lease arrangements until 2020. During the year ended December 31, 2020, the Company entered into or assumed, as part of its acquisitions of assets, certain operating lease arrangements for office and laboratory spaces located in Massachusetts and California with noncancelable lease terms expiring between 2021 and 2023. These leases require monthly lease payments that may be subject to annual increases throughout the lease term. Certain lease agreements also provide the Company with the option to renew for additional periods of up to three years. The renewal options have not been considered in the remaining lease term because it is not reasonably certain that the Company will exercise such renewal options. In December 2020, the Company entered into an agreement to early terminate the Brannan lease (see Note 8).

Under the lease agreements, the Company is generally required to pay certain operating costs, in addition to rent, such as common area maintenance, taxes, utilities and insurance. Such additional charges are considered variable lease costs and are recognized in the period in which they are incurred. Rent expense for the year ended December 31, 2020 was $0.5 million and variable costs were insignificant.

The Company's operating leases include various covenants, indemnities, defaults, termination rights, security deposits and other provisions customary for lease transactions of this nature.

The maturity of the Company's operating lease liabilities as of December 31, 2020 were as follows (in thousands):

Undiscounted lease payments	
2021	$ 926
2022	860
2023	524
Total undiscounted lease payments	2,310
Less: Imputed interest	(265)
Operating lease liabilities	2,045
Less: Operating lease liabilities, current portion	(764)
Operating lease liabilities, net of current portion	$ 1,281

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Supplemental information on the Company's operating leases was as follows:

	Year Ended December 31, 2020
Cash paid for operating lease agreements (in thousands)	$ 724
Weighted-average remaining lease term (in years)	2.6
Weighted-average discount rate	10.0%

Indemnification

In the ordinary course of business, the Company enters into agreements that may include indemnification provisions. Pursuant to such agreements, the Company may indemnify, hold harmless and defend an indemnified party for losses suffered or incurred by the indemnified party. Some of the provisions will limit losses to those arising from third party actions. In some cases, the indemnification will continue after the termination of the agreement. The maximum potential amount of future payments the Company could be required to make under these provisions is not determinable. The Company has not incurred material costs to defend lawsuits or settle claims related to these indemnification provisions. The Company has also entered into indemnification agreements with its directors and officers that may require the Company to indemnify its directors and officers against liabilities that may arise by reason of their status or service as directors or officers to the fullest extent permitted by Delaware corporate law. The Company currently has directors' and officers' insurance.

Other Commitments

The Company has various manufacturing, clinical, research and other contracts with vendors in the conduct of the normal course of its business. Such contracts are generally terminable with advanced written notice and payment for any products or services received by the Company through the effective time of termination and any non-cancelable and non-refundable obligations incurred by the vendor at the effective time of the termination. In the case of terminating a clinical trial agreement at a particular site, the Company would also be obligated to provide continued support for appropriate medical procedures at that site until completion or termination.

10. Strategic License Agreements

2015 TSRI License Agreement

In connection with the acquisition of BlackThorn (see Note 6), the Company gained rights under a license agreement between BlackThorn and TSRI originally entered into in November 2015 (as amended, the 2015 TSRI License Agreement). Pursuant to the 2015 TSRI License Agreement, BlackThorn was granted certain exclusive rights to intellectual property related to Kappa Opioid Receptor and V1aR Receptor Antagonist programs as well as an oxytocin receptors positive allosteric modulator program (collectively, the TSRI Programs) from TSRI to develop, manufacture and commercialize diagnostic, prophylactic or therapeutic products covered by the licensed patents, or that involve the use or incorporation of the licensed know-how. The technology licensed under the 2015 TSRI License Agreement is used in the Company's NMRA-140 and NMRA-511 research and development programs.

Pursuant to the 2015 TSRI License Agreement, the Company is obligated, among other things, to pay TSRI (i) a nominal annual license fee due and payable on the first day of each calendar year and after the fourth anniversary creditable against any royalties due for such calendar year, (ii) development and regulatory milestone payments of up to $1.5 million in aggregate for the first product from each TSRI Program, which are contingent upon

achieving specific development and regulatory milestone events, (iii) commercial milestone payments of up to $3.5 million in aggregate for each occurrence, which are contingent upon achieving specified commercialization milestone events, (iv) tiered low-single digit royalties on future net sales of each royalty-bearing product and (v) a percentage ranging from the mid-single digits to sub teen double digits of any sublicensing revenues the Company receives. The royalties are payable on a product-by-product and country-by-country basis until the later of expiration of the last to expire valid claim in the licensed patents production in the world and ten years after the first commercial sale of such product in such country. The Company also paid a change of control success fee to TSRI in shares of its Series A-1 convertible preferred stock with a fair value of $0.3 million as part of the acquisition of BlackThorn. As of December 31, 2020, none of the milestones had been achieved and no royalties were due under the 2015 TSRI License Agreement.

The 2015 TSRI License Agreement will remain in force until the expiration of all royalty payment obligations, unless terminated sooner (i) by the Company for convenience upon 90 days' prior written notice to TSRI, or (ii) by either party upon certain events of default or material breach of contract by the other party.

2020 TSRI License Agreement

In connection with the acquisition of Propellex (see Note 6), the Company gained rights under a license agreement between Propellex and TSRI (the 2020 TSRI License Agreement) originally entered into in June 2020. Pursuant to the 2020 TSRI License Agreement, Propellex obtained an exclusive, worldwide, royalty-bearing, sublicensable license under certain patent rights, know-how and licensed materials for the treatment of Parkinson's disease and other neurodegenerative diseases and neurological pathologies, to develop, manufacture and commercialize products covered by the licensed patents, or that involve the use or incorporation of the licensed know-how or licensed materials.

Under the 2020 TSRI License Agreement, the Company is obligated, among other things, to pay TSRI (i) milestone payments of up to an aggregate of $7.4 million, which are contingent upon achieving specific development and commercialization milestone events, (ii) tiered low-single digit royalties on future net sales of each royalty-bearing product, and (iii) a portion of any sub licensing revenues it receives. As of December 31, 2020, none of the milestones had been achieved and no royalties were due under the 2020 TSRI License Agreement.

Subsequent to December 31, 2020, the Company terminated the Propellex IPR&D program (see Note 6). The 2020 TSRI License Agreement has not been terminated.

Harvard License Agreement

In connection with the acquisition of Syllable (see Note 6), the Company gained rights to a license agreement between Syllable and Harvard originally entered into in June 2020. Pursuant to the Harvard License Agreement, Syllable obtained an exclusive, worldwide, royalty-bearing, sublicensable license under certain patent rights and copyrights covering certain behavior imagining and behavioral tracking software, to develop and commercialize products and services based thereon. The Company use the technology licensed under the Harvard License Agreement to advance its precision neuroscience platform.

Under the Harvard License Agreement, Syllable was required to pay Harvard a change of control payment. The Company agreed to pay the change-of-control payment in cash as part of the acquisition. In addition, the Company is obligated, among other things, to pay Harvard (i) nominal annual license maintenance fees that are creditable against any royalty amounts payable for licensed products sold in the same year, (ii) mid-single digit royalties on future net sales of each royalty-bearing product that utilizes the licensed technology, and (iii) a

portion of any sub licensing revenues the Company receives ranging from the high teens to low-double digits. The royalties are payable until the later of expiration of the last to expire valid claim in the licensed patents that cover such product and the fifteenth anniversary of the first commercial sale of the last licensed product offered for sale. As of December 31, 2020, none of the milestones had been achieved and no royalties were due under the Harvard License Agreement.

The Harvard License Agreement will remain in force until expiration of all royalty payment obligations unless terminated sooner (i) by the Company for convenience upon 120 days' prior written notice to Harvard, (ii) by Harvard if the Company becomes insolvent, bankrupt, or becomes the subject of liquidation or dissolution proceedings or otherwise discontinues business, or (iii) by either party upon certain events of default or material breach of contract by the other party.

In addition, the Harvard License Agreement provided for certain development milestones that the Company is required to meet between April 2021 and July 2023. Failure to meet such milestones constituted a material breach of contract and would provide Harvard with the right to immediately terminate the agreement. Subsequent to December 31, 2020, the Company and Harvard amended the agreement to extend the milestone deadlines (see Note 18).

11. Convertible Preferred Stock and Stockholders' Deficit

Convertible Preferred Stock

In September 2020, the Company executed a preferred stock purchase agreement (the SPA) and issued 123,620,000 shares of its Series A-2 Preferred at $1.00 per share for aggregate proceeds of $123.6 million in the initial closing of its Series A-2 Preferred financing. Upon the initial closing, the right of forfeiture for 44,008,327 shares of the Company's common stock issued with the 2020 Bridge Notes lapsed. Concurrent with the initial closing, the Company acquired a legal entity through the issuance of 40,000,000 shares of its Series A-2 Preferred and 10,000,000 shares of its common stock. The entity did not meet the definition of a business and its sole asset was cash. As a result, the shares of the Company's Series A-2 Preferred and common stock were recognized at their relative fair values for $39.5 million of cash obtained in the transaction. The Company also issued 59,180,294 shares of its Series A-2 Preferred upon settlement of the 2020 Bridge Notes.

In addition, in September 2020, the Company issued an aggregate of 45,178,495 and 14,897,480 shares of its Series A-1 convertible preferred stock (Series A-1 Preferred) and Series A-2 Preferred, respectively, as consideration for various acquisitions of assets (see Note 6).

In accordance with the terms of the SPA, the Company also committed to selling 40,000,000 additional shares of its Series A-2 Preferred to one investor who is a related party at a fixed price of $1.00 per share in one or more subsequent closings on or before March 8, 2021. The Company determined that its obligation to issue additional shares of Series A-2 Preferred in subsequent closings is a freestanding financial instrument that should be classified as a liability (the convertible preferred stock tranche liability) on the Company's consolidated balance sheets and remeasured to fair value during the reporting period with any changes in fair value being recognized as a component of other income (expense) in the consolidated statements of operations and comprehensive loss. The fair value of convertible preferred stock tranche liability was determined to be de minimis on issuance and through December 31, 2020 because of (i) the original expected short-term nature of the obligation and (ii) the absence of significant business activities or events during the period from issuance in September 2020 to the end of 2020 that could have significantly impacted the value of the Company. Furthermore, additional third-party investors participated in the closing of the Company's subsequent Series A-2 convertible preferred stock financing completed in September 2021, which indicated a fair value of $1.00 per share (see Note 18).

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Further, pursuant to the SPA, a forfeiture provision was added to the terms of 33,333,333 shares of the Company's common stock previously issued in January 2020 to the same investor and related party that the Company committed to selling 40,000,000 additional shares of Series A-2 Preferred, of which 13,333,333 remain subject to the forfeiture provision as of December 31, 2020. The Company determined there was no accounting impact because it did not result in a transfer of value from the Company's common stockholders to its preferred stockholders.

In connection with the acquisition of Alairion in November 2020, an existing stockholder of both Alairion and the Company purchased a total of $12.0 million of Alairion convertible notes immediately prior to the closing date that were settled with 12,000,000 shares of the Company's Series A-2 Preferred upon closing (the Alairion Pre-Closing Financing). The Alairion Pre-Closing Financing was treated as a separate arrangement apart from the acquisition of assets (see Note 6).

There were no shares of the Company's convertible preferred stock, authorized, issued or outstanding as of December 31, 2019. As of December 31, 2020, the Company's convertible preferred stock consisted of the following:

	Shares Authorized	Shares Issued and Outstanding	Carrying Value	Liquidation Preference
			(in thousands)	
Series A-1	50,000	45,178	$ 36,595	$ 45,178
Series A-2	290,000	249,698	245,084	249,698
Total convertible preferred stock	340,000	294,876	$ 281,679	$ 294,876

The holders of the Company's convertible preferred stock have the following rights, preferences and privileges:

Dividends

The holders of each series of convertible preferred stock are entitled to non-cumulative dividends at an annual rate of 6.0% of the original issue price when and if declared by the Company's board of directors. The dividend rate is subject to adjustment if the Company undertakes any stock splits, stock dividends, combinations, subdivisions, or recapitalization events. Holders of Series A-2 Preferred are entitled to dividends prior and in preference to any declaration or payment of any dividend to holders of Series A-1 Preferred and common stock. Holders of the Series A-1 Preferred are entitled to dividends prior and in preference to any declaration or payment of any dividend to holders of common stock. No dividends have been declared or paid as of December 31, 2020.

Liquidation distributions

In the event of any liquidation, dissolution, or winding up of the Company, either voluntary or involuntary, the holders of the then outstanding Series A-2 Preferred shall be entitled to receive, prior and in preference to any distribution of any of the assets of the Company to the holders of the Series A-1 Preferred and common stock, a liquidation preference in an amount per share equal to the original issue price (as adjusted for stock splits, stock dividends, and recapitalizations) plus all declared but unpaid dividends on such shares. The holders of the then outstanding Series A-1 Preferred shall be entitled to receive, prior and in preference to any distribution of any of the assets of the Company to the holders of the common stock, a liquidation preference in an amount per share equal to the original issue price (as adjusted for stock splits, stock

dividends, and recapitalizations) plus all declared but unpaid dividends on such shares. Thereafter, any remaining assets of the Company will be distributed, on a pari passu basis, among the holders of the common stock. If the assets and funds available to be distributed to the stockholders shall be insufficient to permit the payment, in full, of any of the liquidation preferences, then the entire assets and funds legally available for distribution to the convertible preferred stock shall be distributed ratably among the holders of convertible preferred stock based on the total number of shares held by each holder.

Voting rights

The holder of each share of convertible preferred stock is entitled to one vote for each share of common stock into which it would convert. Except as provided by law or other provisions in the Company's Amended and Restated Certificate of Incorporation, the holders of the convertible preferred stock shall vote together with the holders of the common stock as a single class on an as-converted basis. So long as 16,000,000 shares of Series A-2 Preferred remain outstanding, then (i) the holders of such convertible preferred stock, exclusively, are entitled to elect three directors of the Company, (ii) the holders of the Company's common stock, exclusively, are entitled to elect one director of the Company, and (iii) the holders of the Series A-2 Preferred and common stock, voting together as a single class on an as-converted basis, are entitled to elect two directors of the Company. The holders of the Series A-1 Preferred are not entitled to elect directors of the Company.

Conversion rights

The shares of convertible preferred stock are convertible into shares of common stock at the option of the holder, at any time after the date of issuance of such shares, determined by dividing the original issue price per share by the conversion price in effect at the time of conversion. As of December 31, 2020, the applicable conversion price was $1.00 per share for Series A-1 Preferred and $1.00 per share for Series A-2 Preferred. The conversion price shall be subject to adjustments for stock splits, stock dividends, combinations, subdivisions, or recapitalization events. In addition, if the Company should issue convertible preferred stock or common stock without consideration or for a consideration per share less than the conversion price for the convertible preferred stock, the conversion price for each series shall automatically be adjusted in accordance with anti-dilution provisions contained in the Company's Amended and Restated Certificate of Incorporation.

Each share of convertible preferred stock shall automatically convert into common stock immediately upon (i) the closing of the sale of common stock in a firm-commitment underwritten public offering pursuant to an effective registration statement under the Securities Act of 1933, as amended, resulting in at least $30.0 million of gross proceeds to the Company (a Qualified IPO), or (ii) the occurrence of an event, specified by vote or written consent of the holders of a majority of the then-outstanding shares of Series A-2 Preferred.

Redemption rights

Each share of Series A-1 Preferred and A-2 Preferred are not mandatorily redeemable.

Registration rights

Under the Company's investors' rights agreement, certain holders of the Company's convertible preferred stock and common stock have the right to demand that the Company file a registration statement or request that their shares be covered by a registration statement that the Company is otherwise filing. Holders of the

Company's convertible preferred stock have the right to request the Company to file certain registration statements with the SEC for the registration of shares related to the convertible preferred stock. The obligations of the Company regarding such registration rights include, but are not limited to, commercially reasonable efforts to cause such registration statement to become effective, keep such registration statement effective for up to 120 days, prepare and file amendments and supplements to such registration statement and the prospectus used in connection with such registration statement, and furnish to the selling holders copies of the prospectus and any other documents as they may reasonably request. The terms of the registration rights provide for the payment of certain expenses related to the registration of the shares, including a capped reimbursement of legal fees of a single special counsel for the holders of the shares, but do not impose any obligations for the Company to pay additional consideration to the holders in case a registration statement is subsequently withdrawn at the request of the holders.

Common Stock

The holders of the Company's common stock are entitled to one vote per share on all matters to be voted on by the stockholders of the Company and are entitled to dividends, if and when declared by the Company's board of directors, subject to the prior rights of the preferred stockholders. Common stock outstanding on the consolidated balance sheet and consolidated statement of convertible preferred stock and stockholders' deficit as of December 31, 2020 includes 86,897,223 shares of restricted stock that vest based on service conditions and are subject to the Company's right of repurchase upon termination of services, 7,160,000 shares of restricted stock that vest based on performance conditions and for which a grant date had not been established (see Note 13), and 20,833,333 shares of common stock subject to the investors' right of forfeiture.

The Company did not have any common stock reserved for issuance as of December 31, 2019 and common stock reserved for future issuance as of December 31, 2020 consisted of the following (in thousands):

Shares reserved for conversation of outstanding Series A-1 and Series A-2 Preferred	294,876
Shares reserved for Series A-1 Preferred related to Preferred Stock Warrants	2,293
Shares reserved for options to purchase common stock under the Plans	26,775
Shares reserved for issuance under the Plans	33,149
Total	357,093

In addition, the Company may be required to issue additional shares of its capital stock if certain milestone conditions are met pursuant to the contingent consideration and compensation arrangements associated with the Company's acquisitions of assets (see Note 6). As of December 31, 2020, the milestone conditions are not probable of being met and no shares have been reserved for potential future issuances.

12. Preferred Stock Warrants

In September 2020, in connection with the BlackThorn acquisition, the Company issued Preferred Stock Warrants to purchase up to 2,292,672 shares of Series A-1 Preferred with an exercise price of $1.35 per share, all of which were outstanding as of December 31, 2020. The Preferred Stock Warrants expire on the earlier of (i) December 31, 2021, (ii) immediately prior to the consummation of an underwritten initial public offering of the Company's common stock, and (iii) upon the closing of a deemed liquidation event. The Preferred Stock Warrants provide for cashless net exercise pursuant to which the holder may, in lieu of payment of the exercise price in cash, surrender the Preferred Stock Warrant and receive a net amount of shares based on the fair market

value of the Company's convertible preferred stock at the time of exercise after deduction of the aggregate exercise price. The Preferred Stock Warrants also provide for adjustments in the event of specified stock dividends, stock splits, reclassifications, and consolidations.

13. Stock-Based Compensation

2020 Equity Incentive Plan

In January 2020, the Company adopted the 2020 Equity Incentive Plan (the 2020 Plan) under which 14,300,000 shares of common stock were initially reserved for issuance to employees, directors and non-employee service providers of the Company. The 2020 Plan provides for the grant of incentive stock options, non-statutory stock options, restricted stock awards, restricted stock unit, and other stock-based awards. Under the 2020 Plan, the exercise price of stock options granted shall not be less than 100% of the estimated fair market value of the Company's common stock on the date of grant. For awards granted in 2020 with an exercise or purchase price of $0.0001 (par value) or $0.32 per share, a deemed fair value ranging from $0.15 to $0.35 per share, respectively, was used in calculating stock-based compensation, which was determined by the Company using hindsight. The contractual term of the options granted under the 2020 Plan shall not exceed ten years. Additionally, the exercise price of any incentive stock options granted to a 10% stockholder shall not be less than 110% of the fair market value of the common stock on the date of grant, and the term of such option grant shall not exceed five years. Subject to approval by the Company's board of directors at the grant date, options may include an early exercise feature whereby such option shall be exercisable at any time, subject to the Company's right to repurchase any unvested portion at the original exercise price. Options and other equity awards become vested and, if applicable, exercisable based on terms determined by the Company's board of directors or other plan administrator on the date of grant. The Company also has the right of first refusal to purchase any proposed disposition of shares issued under the 2020 Plan. The Company permits early exercise of certain stock options prior to vesting subject to approval by the Company's board of directors. Any shares issued pursuant to unvested options are restricted and subject to repurchase by the Company until the conditions for vesting are met. The amounts paid for shares purchased under an early exercise of stock options and subject to repurchase by the Company are reported as a liability and reclassed to stockholders' deficit once those shares vest. Upon termination of employment of an option holder, the Company has the right to repurchase, at the original purchase price, any unvested options. There were no early exercises of stock options during 2020.

During the year ended December 31, 2020, the Company's board of directors approved an increase to the shares reserved for issuance under the 2020 Plan to 64,093,550 shares. As of December 31, 2020, 32,731,637 shares remained available for future grants under the 2020 Plan.

2015 Equity Incentive Plan

In connection with the BlackThorn acquisition in September 2020, the Company assumed BlackThorn's 2015 Equity Incentive Plan (the 2015 Plan, and collectively with the 2020 Plan, the Plans). The BlackThorn Replacement Stock Options previously granted under the 2015 Plan and that which were outstanding and converted to options to purchase common stock of the Company upon closing of the acquisition remain subject to the terms and conditions of the 2015 Plan (see Note 6). As of December 31, 2020, 2,330,374 shares of the Company's common stock were reserved for issuance under the 2015 Plan, of which 417,557 shares remain available for issuance although future grants will be made from the 2020 Plan.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

Stock Option Activity

The following table summarizes stock option activity under the Plans:

	Outstanding Options	Weighted-Average Exercise Price Per Share	Weighted-Average Remaining Contractual Term (years)	Aggregate Intrinsic Value
	(in thousands, except per share amounts and years)			
Outstanding as of December 31, 2019	—	$ —	—	$ —
Granted	25,552	0.32		
BlackThorn Replacement Options assumed with the 2015 Plan	2,330	1.22		
Canceled and forfeited	(1,107)	0.67		
Exercised	—	—		
Outstanding as of December 31, 2020	26,775	$ 0.38	9.8	$ 749
Vested as of December 31, 2020	1,348	$ 0.98	9.3	$ 12
Exercisable as of December 31, 2020	3,348	$ 0.58	9.7	$ 72

The aggregate intrinsic value of options outstanding, exercisable, and vested and exercisable is calculated as the difference between the exercise price of the underlying options, and the fair value of the Company's common stock, as determined by the Company's board of directors.

The weighted-average grant-date fair value per share of stock options granted during the year ended December 31, 2020 was $0.27 per share. The weighted-average grant-date fair value per share of BlackThorn Replacement Options assumed with the 2015 Plan during the year ended December 31, 2020 was $0.20 per share. The total grant-date fair value of options that vested during the year ended December 31, 2020 was $0.3 million.

The stock option activity table above excludes options to purchase 5,500,000 shares of the Company's common stock issued to the Company's scientific advisors which vest based on the achievement of certain performance conditions to be separately defined and approved by the Company's board of directors (Performance Stock Options). As the performance conditions had not been determined as of December 31, 2020, the criteria for establishing a grant date, and accordingly a measurement date, were not met as of that date.

Fair Value of Stock Options

The fair value of stock options granted for employee and non-employee awards was estimated at the grant date using the Black-Scholes option pricing model based on the following assumptions:

	Year Ended December 31, 2020
Expected volatility	95.9% – 100.4%
Expected term (years)	5.0 – 6.1
Risk-free interest rate	0.2% – 0.5%
Expected dividend yield	—

Expected volatility—As there is no trading history for the Company's common stock, the Company has determined expected volatility based on the average historical stock price volatility of comparable publicly-traded companies and expects to continue to do so until such time as it has adequate historical data

regarding the volatility of its own traded stock price. The comparable companies are chosen based on their similar size, stage in the life cycle or area of therapeutic focus. The historical volatility is calculated based on a period of time commensurate with the expected term assumption.

Expected term—The expected term of the Company's stock options has been estimated using the simplified method for awards that qualify as plain-vanilla stock options. The simplified method calculates the expected term as the average of the time-to-vesting and the contractual life of the stock options.

Risk-free interest rate—The risk-free interest rate assumption was based on the U.S. Treasury yield curve in effect at the time of grant of the award for time periods approximately equal to the expected term of the award.

Expected dividend yield—The expected dividend yield assumption is zero as the Company has never paid and has no plans to pay dividends on its common stock in the foreseeable future.

Restricted Stock Awards

During the year ended December 31, 2020, the Company granted shares of restricted common stock to certain employees, executives, non-employee scientific advisors, and third-party service providers (the restricted stock). The restrictions lapse over time primarily according to service-based vesting conditions of each award. In the event of a voluntary or involuntary termination of the holder's continuous provision of services to the Company, any unvested portion of the restricted stock award are automatically forfeited.

The following table summarizes the Company's restricted stock activity:

	Shares	Weighted-Average Grant Date Fair Value Per Share
	(in thousands, except per share amounts)	
Outstanding and unvested as of December 31, 2019	—	$ —
Granted	88,140	0.03
Vested	(1,243)	0.32
Outstanding and unvested as of December 31, 2020	86,897	$ 0.03

The restricted stock awards table above excludes 7,160,000 shares of restricted common stock issued to the Company's scientific advisors and one employee which vest based on the achievement of certain performance conditions to be separately defined and approved by the Company's board of directors (Performance Restricted Stock). As the performance conditions had not been determined as of December 31, 2020, the criteria for establishing a grant date, and accordingly a measurement date, were not met as of that date.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

Stock-based Compensation

The following table summarizes total stock-based compensation included in the Company's consolidated statements of operations and comprehensive loss:

	Period from November 22, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
	(in thousands)	
Research and development	$ —	$ 1,257
General and administrative	—	418
Total stock-based compensation	$ —	$ 1,675

As of December 31, 2020, there was $6.5 million and $1.9 million of unrecognized stock-based compensation related to stock options and restricted stock awards outstanding, respectively, which were expected to be recognized over weighted-average remaining service periods of 3.5 years and 2.6 years, respectively.

Services Agreements

In May 2020, the Company entered into a service agreement with a vendor for assistance in evaluating assets and technologies in the field of neurodegeneration. As consideration, the Company issued 1,000,000 shares of its restricted common stock (included in the table summarizing the Company's restricted stock activity above), subject to a right of forfeiture that lapses as to 50% of the shares on the one-year anniversary of the agreement and as to the remaining 50% of the shares on the second anniversary of the agreement. The restricted common shares had an aggregate grant-date fair value of $0.4 million. While services are being provided, the Company agreed to issue the vendor additional shares of its common stock representing a value of $1.0 million upon the achievement of certain milestones tied to the successful in-license or acquisition of assets (the Milestone Shares). The Company concluded the Milestone Shares are stock settled debt that are required to be classified as a liability and recognized at such time the milestones are probable of being met. As of December 31, 2020, the milestones were not probable of being met.

In May 2020, the Company entered into a letter arrangement with a strategic party to continue to collaborate in their strategic relationship to advance mutual goals in the treatment of brain disorders. In consideration of the continued relationship, the Company issued 1,000,000 shares of its common stock and recognized stock-based compensation of $0.3 million.

14. Income Taxes

The Company had no income tax expense for the period from November 22, 2019 (inception) to December 31, 2019 or for the year ended December 31, 2020 due to its history of operating losses. During the period from November 22, 2019 (inception) to December 31, 2019 and the year ended December 31, 2020, the Company recorded a net loss of $21,000 and $99.3 million, respectively.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

A reconciliation of the Company's federal income tax rate and effective income tax rate is summarized as follows:

	Period from November 22, 2019 (Inception) to December 31, 2019 (%)	Year Ended December 31, 2020 (%)
Federal income taxes	21.0	21.0
State income taxes, net of federal benefit	—	1.8
Non-deductible acquired IPR&D expense(1)	—	(14.8)
Permanent differences	—	(0.7)
Research and development tax credits	—	0.4
Uncertain tax positions	—	(0.8)
Valuation allowance	(21.0)	(6.9)
Effective income tax rate	—	—

(1) Amounts attributable to the acquisitions of assets (see Note 6).

Deferred tax assets and liabilities reflect the net tax effects of net operating loss and tax credit carryforwards and temporary differences between the carrying amount of assets and liabilities for financial reporting and the amounts used for tax purposes. Significant components of the Company's deferred tax assets and liabilities are summarized as follows:

	December 31,	
	2019	2020
	(in thousands)	
Deferred tax assets:		
Net operating losses	$ —	$ 30,076
Capitalized research and development expense	—	8,086
Research and development credits	—	4,164
Compensation related	—	883
Capitalized other expense	5	851
Operating lease liabilities	—	463
Other	—	7
Total deferred tax assets	5	45,530
Less: valuation allowance	(5)	(44,080)
Total deferred tax assets less valuation allowance	—	450
Deferred tax liabilities:		
Operating lease right-of-use assets	—	(450)
Net deferred tax assets	$ —	$ —

The Company determines its valuation allowance on deferred tax assets by considering both positive and negative evidence in order to ascertain whether it is more likely than not that deferred tax assets will be realized. Realization of deferred tax assets is dependent upon the generation of future taxable income, if any, the timing and amount of which are uncertain. Due to the Company's recent history of operating losses, the Company believes that recognition of the deferred tax assets arising from the above-mentioned future tax benefits is

currently not likely to be realized and, accordingly, has provided a valuation allowance on its deferred tax assets. The valuation allowance increased by $44.1 million for the year ended December 31, 2020, primarily due to the increase in the Company's net operating losses (NOL) during the period and deferred tax assets related to acquired NOL carryforwards from the acquisitions of assets.

NOLs and tax credit carryforwards as of December 31, 2020 were as follows (dollars in thousands):

	Amount	Expiration Years
NOLs, Federal (post-December 31, 2017)	$ 90,027	Indefinite(1)
NOLs, Federal (pre-January 1, 2018)	40,370	2034 through 2037
NOLs, state	91,253	2033 through 2040
Research and development tax credits, Federal	4,729	2034 through 2040
Research and development tax credits, state	2,252	Indefinite

(1) NOL carryforward generated after 2017 which can be carried forward indefinitely and can generally be used to offset up to 80% of future taxable income.

Utilization of the NOL carryforwards and research and development tax credit carryforwards may be subject to a substantial annual limitation under Section 382 of the Internal Revenue Code of 1986, as amended (Section 382) due to ownership changes that have occurred previously or that could occur in the future. These ownership changes may limit the amount of carryforwards that can be utilized annually to offset future taxable income. In general, an ownership change, as defined by Section 382, results from transactions increasing the ownership of certain stockholders or public groups in the stock of a corporation by more than 50% over a three-year period. The Company has not conducted a study to assess whether a change of control has occurred, including changes of control associated with the acquisitions of assets. Any limitation may result in expiration of a portion of the NOL carryforwards or research and development tax credit carryforwards before utilization; however, such limitation, if any, would not have an impact on the Company's financial statement due to the full valuation. Until a study is completed and any limitation is known, no amounts are being presented as an uncertain tax position.

Uncertain Tax Positions

As of December 31, 2019 and 2020, the Company had no unrecognized tax benefits that, if recognized and realized, would affect the effective tax rate due to the full valuation allowance against deferred tax assets.

A reconciliation of the beginning and ending balance of total gross unrecognized tax benefits is as follows:

	December 31,	
	2019	2020
	(in thousands)	
Beginning balance of unrecognized tax benefits	$ —	$ —
Gross increases based on tax positions related to current year	—	1,178
Gross increases based on tax positions related to acquired entities	—	6,262
Ending balance of unrecognized tax benefits	$ —	$ 7,440

The unrecognized tax benefits, if recognized, would not have an impact on the Company's effective tax rate assuming the Company continues to maintain a full valuation allowance position. As of December 31, 2020, no significant increases or decreases are expected to the Company's uncertain tax positions within the next twelve months.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

The Company files income tax returns in the United States, and the states of California and Massachusetts. Due to net operating loss carryforwards, all years effectively remain open for income tax examination by tax authorities in the United States and states in which the Company files tax returns.

15. Net Loss Per Share

The following table summarizes the computation of basic and diluted net loss per share:

	Period from November 22, 2019 (Inception) to December 31, 2019	Year Ended December 31, 2020
	(in thousands, except per share amounts)	
Numerator:		
Net loss	$ 21	$ (99,272)
Denominator:		
Weighted-average common shares outstanding, basic and diluted	—	101,992
Net loss per share, basic and diluted	$ —	$ (0.97)

The following outstanding potentially dilutive common stock equivalents were excluded from the computation of diluted net loss per share for the periods presented because including them would have been antidilutive:

	December 31,	
	2019	2020
	(in thousands)	
Convertible preferred stock	—	294,876
Preferred stock warrants	—	2,293
Common stock options	—	26,775
Performance stock options	—	5,500
Unvested restricted stock subject to repurchase	—	86,897
Performance restricted stock	—	7,160
Common stock subject to right of forfeiture	—	20,833
Total	—	444,334

16. Related Party Transactions

In August 2020, the Company repurchased 16,666,667 shares of common stock from an investor who is a related party, at the original purchase price of $0.0001. The repurchased shares of common stock were cancelled and retired. The Company determined there was no accounting impact of this repurchase as at that time, there was only one class of the Company's equity outstanding.

During the year ended December 31, 2020, the Company issued 13,531,561 shares of its Series A-1 Preferred as consideration for an acquisition of assets and 65,700,828 shares of its Series A-2 Preferred for total cash proceeds of $30.0 million and settlement of convertible promissory notes amounting to $30.3 million to a significant stockholder that has designated members of the Company's board of directors and who is considered to be a related party.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

One of BlackThorn's investors and two of its board members at the time of the acquisition by the Company were related parties of the Company. A stockholder of Alairion at the time of the merger with the Company was a related party of the Company.

During 2020, the Company also issued 2020 Bridge Notes and Series A-2 Preferred to investors who were considered to be related parties (see Note 7 and Note 11).

17. Defined Contribution Plan

The Company began sponsoring a 401(k) Plan in 2020 whereby eligible employees can elect to contribute to the 401(k) Plan, subject to certain limitations, on a pretax basis. The Company does not match any employee contributions.

18. Subsequent Events

The Company evaluated subsequent events through November 8, 2021, the date these consolidated financial statements were available to be issued.

Amendment to Harvard License Agreement

In March 2021, the Company entered into Amendment No. 1 to the Harvard License Agreement whereby the parties, amongst other things, extended the timeline of five development milestones that the Company is required to meet. The deadline for the first development milestone was extended to December 2021 and the remaining development milestones are required to be met between January 2022 and January 2024.

Facility Lease

In March 2021, the Company entered into a new lease agreement for a 14,688 square feet office facility in South San Francisco, California. The term of the lease commenced in April 2021 and ends in December 2023. Future payments under the noncancelable lease term totals $1.3 million.

Final Closing of Series A-2 Preferred Stock Financing

Between March and July 2021, the Company and certain of its investors entered into a series of amendments to the SPA to extend the deadline to complete subsequent closings of its Series A-2 Preferred financing from March 2021 to September 2021. Concurrently, the lapse of right of forfeiture with respect to 20,833,333 shares of the Company's common stock held by two related party investors was extended to September 2021.

Between August and September 2021, pursuant to the SPA, as amended, the Company issued 191,250,000 shares of its Series A-2 Preferred, including 141,250,000 shares to new investors and 50,000,000 shares to two existing investors who are related parties, at a price of $1.00 per share for aggregate gross proceeds of $191.3 million. Upon the final closing, the right of forfeiture for 20,833,333 shares of the Company's common stock held by two investors who are related parties lapsed.

Authorization of Additional Shares

In August 2021, the Company's board of directors approved a certificate of amendment to the Company's amended and restated certificate of incorporation which, among other things, (i) increased the authorized number of shares of the Company's common stock to 1,125,000,000 shares and (ii) increased the authorized number of shares of the Company's convertible preferred stock to 755,000,000 shares.

NEUMORA THERAPEUTICS, INC.

Notes to Consolidated Financial Statements

Amgen Licenses and Collaboration Agreement

In September 2021, the Company entered into two license agreements with Amgen Inc. (Amgen) pursuant to which it obtained exclusive, worldwide licenses to develop, manufacture, use, commercialize and distribute products containing compounds that are directed to, in one case, CK1d, and in the other case, glucocerebrocidase (GCase), both for the treatment of neurodegenerative diseases. Under these two license agreements, Amgen is eligible to receive up to an aggregate of $360.0 million in commercial milestone payments per product with a compound directed to CK1d and up to an aggregate of $360.0 million in commercial milestone payments per product with a compound directed to GCase, in each case, upon the achievement of certain sales thresholds and single digit royalties on potential future net sales.

Concurrently, the Company entered into a collaboration agreement with Amgen to discover drug targets, biomarkers, Precision Phenotypes and other insights associated with central nervous system (CNS) diseases utilizing Amgen's deCODE genetics and human data research capabilities. The Company received exclusive rights under intellectual property generated in the collaboration to exploit therapeutic compounds and diagnostics for use with therapeutics in the CNS field and Amgen received exclusive rights to exploit therapeutic compounds and diagnostics for use with therapeutics outside of the CNS field. The term of the collaboration agreement is five years. The Company is committed to making quarterly payments to Amgen for their collaboration activities over the next three years totaling $62.5 million, or $75.0 million if certain progress milestones are achieved. There are no development or commercial milestones or royalty payments under the collaboration agreement, however, Amgen has an exclusive option to negotiate, and the right of first negotiation, to obtain exclusive, worldwide licenses to research, develop, commercialize and otherwise exploit up to two therapeutic compounds or any pharmaceutical product containing such therapeutic compound arising from the collaboration.

As part of the agreements, the Company issued to Amgen 157.0 million shares of its Series A-2 Preferred stock. Additionally, Amgen purchased 100.0 million shares of the Company's Series A-2 Preferred stock at a purchase price of $1.00 per share, for total consideration of $100.0 million. Subject to certain conditions, Amgen is also obligated to provide the Company additional financing of up to $100.0 million.

2021 Stock Option Grants

Between March and July 2021, the Company granted options to purchase 20,082,500 shares of the Company's common stock to employees and non-employee service providers, each with an exercise price of $0.32 per share that generally vest over a three- or four-year vesting schedule and an option to purchase 3,500,000 shares of the Company's common stock to one of its executives that vests based on defined market conditions. In September 2021, the Company granted options to purchase 4,337,500 shares of the Company's common stock to employees and non-employee service providers, each with an exercise price of $0.54 per share that generally vest over a four-year vesting schedule.

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Shares

Common Stock

Prospectus

J.P. Morgan **BofA Securities** **Credit Suisse** **Stifel** **Guggenheim Securities**

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PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 13. Other Expenses of Issuance and Distribution

The following table sets forth the costs and expenses, other than underwriting discounts and commissions, payable by us in connection with the sale of the common stock being registered. All amounts are estimates except for the Securities and Exchange Commission (SEC) registration fee, the Financial Industry Regulatory Authority (FINRA) filing fee and the Nasdaq Global Market (Nasdaq) listing fee.

	Amount Paid or to Be Paid
SEC registration fee	$ *
FINRA filing fee	*
Nasdaq listing fee	*
Transfer agent's fees and e	*
Printing and engraving expenses	*
Legal fees and expenses	*
Accounting fees and expenses	*
Blue Sky fees and expenses	*
Miscellaneous	*
Total	$ *

* To be completed by amendment.

Item 14. Indemnification of Directors and Officers

Section 145 of the Delaware General Corporation Law provides that a corporation may indemnify directors and officers as well as other employees and individuals against expenses (including attorneys' fees), judgments, fines, and amounts paid in settlement actually and reasonably incurred by such person in connection with any threatened, pending, or completed actions, suits, or proceedings in which such person is made a party by reason of such person being or having been a director, officer, employee, or agent to the registrant. The Delaware General Corporation Law provides that Section 145 is not exclusive of other rights to which those seeking indemnification may be entitled under any bylaw, agreement, vote of stockholders or disinterested directors or otherwise. Article 9 of the registrant's amended and restated certificate of incorporation provides for indemnification by the registrant of its directors, officers, and employees to the fullest extent permitted by the Delaware General Corporation Law. The registrant has entered into indemnification agreements with each of its current directors, executive officers, and certain other officers to provide these directors and officers additional contractual assurances regarding the scope of the indemnification set forth in the registrant's amended and restated certificate of incorporation and amended and restated bylaws and to provide additional procedural protections. There is no pending litigation or proceeding involving a director or executive officer of the registrant for which indemnification is sought.

Section 102(b)(7) of the Delaware General Corporation Law permits a corporation to provide in its certificate of incorporation that a director of the corporation shall not be personally liable to the corporation or its stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to the corporation or its stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) for unlawful payments of dividends or unlawful stock repurchases, redemptions, or other distributions, or (iv) for any transaction from which the director derived an improper personal benefit. The registrant's amended and restated certificate of incorporation provides for such limitation of liability.

The registrant maintains standard policies of insurance under which coverage is provided (a) to its directors and officers against loss rising from claims made by reason of breach of duty or other wrongful act, and (b) to the registrant with respect to payments that may be made by the registrant to such officers and directors pursuant to the above indemnification provision or otherwise as a matter of law.

The proposed form of underwriting agreement to be filed as Exhibit 1.1 to this registration statement provide for indemnification of directors and officers of the registrant by the underwriters against certain liabilities.

Item 15. Recent Sales of Unregistered Securities

Since its inception in November 2019, the registrant has sold the following securities without registration under the Securities Act of 1933:

(a) From January 2020 to December 2020, the registrant issued 186,643,334 shares of its common stock for proceeds of approximately $49,553.

(b) From May 2020 to September 2020, the registrant issued 52,508,326 shares of its common stock in connection with its issuance and sale of its Series A-2 convertible preferred stock for no additional consideration.

(c) In September 2020, the registrant issued 45,178,495 shares of its Series A-1 convertible preferred stock at $1.00 per share for gross proceeds of approximately $45.2 million, in connection with its acquisition of BlackThorn.

(d) In September 2020, the registrant issued 2,292,672 shares of its Series A-1 convertible preferred stock upon exercise of warrants for proceeds of approximately $3.1 million.

(e) In September 2020, the registrant issued 237,697,774 shares of its Series A-2 convertible preferred stock at $1.00 per share for gross proceeds of approximately $ 237.7 million, including conversion of the convertible promissory notes of an aggregate principal amount of approximately $55.9 million issued from February 2020 to September 2020.

(f) In November 2020, the registrant issued 12,000,000 shares of its Series A-2 convertible preferred stock at $1.00 per share for gross proceeds of $12.0 million, in connection with its acquisition of Alairion.

(g) From August 2021 to September 2021, the registrant issued 191,250,000 shares of its Series A-2 convertible preferred stock at $1.00 per share for gross proceeds of approximately $191.3 million.

(h) In September 2021, the registrant issued 100,000,000 shares of its Series A-2 convertible preferred stock at $1.00 per share for gross proceeds of approximately $100.0 million.

(i) In September 2021, the registrant issued 157,000,000 shares of its Series A-2 convertible preferred stock in connection with the entry into an intellectual property license arrangements.

(j) the registrant has granted equity awards under the 2015 Plan to its directors, officers, employees, and consultants, which awards consisted of 2,330,374 options to purchase an aggregate of 2,330,374 shares of its common stock at exercise prices ranging from $0.32 to $1.38 per share.

(k) the registrant has issued an aggregate of 88,098 shares of its common stock upon the exercise of options under our 2015 Plan for aggregate proceeds of approximately $97,553.

(l) the registrant has granted equity awards under the 2020 Plan its directors, officers, employees, and consultants, which awards consisted of 63,121,900 options to purchase an aggregate of 63,121,900 shares of its common stock at exercise prices ranging from $0.32 to $0.54 per share and 4,000,000 restricted stock awards issued at $0.32 per share.

(m) the registrant has issued an aggregate of 5,957,327 shares of its common stock upon the exercise of options under our 2020 Plan for aggregate proceeds of approximately $1.9 million.

The offers, sales and issuances of the securities described in Item 15(a) through 15(m) were exempt from registration under the Securities Act in reliance upon Section 4(a)(2) of the Securities Act or Regulation D

promulgated thereunder as transactions by an issuer not involving any public offering. The recipients of the securities in each of these transactions represented their intentions to acquire the securities for investment only and not with a view to or for sale in connection with any distribution thereof, and appropriate legends were placed upon the stock certificates issued in these transactions. All recipients had adequate access, through their relationships with us, to information about our company.

The offers, sales, and issuances of the securities described in Item 15(j) through 15(m) were exempt from registration under the Securities Act under either Rule 701, in that the transaction were under compensatory benefit plans and contracts relating to compensation, or under Section 4(a)(2) of the Securities Act in that the transactions were between an issuer and members of its senior executive management and did not involve any public offering within the meaning of Section 4(a)(2). The recipients of such securities were our employees, directors or consultants. Appropriate legends were affixed to the securities issued in these transactions.

Item 16. Exhibits and Financial Statement Schedules

See the Exhibit Index attached to this registration statement, which Exhibit Index is incorporated herein by reference.

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes thereto.

Item 17. Undertakings

(a) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Securities Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer, or controlling person of the registrant in the successful defense of any action, suit, or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered hereunder, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question of whether such indemnification by it is against public policy as expressed in the Securities Act and will be governed by the final adjudication of such issue.

(b) The undersigned registrant hereby undertakes that:

(1) For purposes of determining any liability under the Securities Act, the information omitted from the form of prospectus filed as part of this registration statement in reliance upon Rule 430A and contained in a form of prospectus filed by the registrant pursuant to Rule 424(b)(1) or (4) or 497(h) under the Securities Act shall be deemed to be part of this registration statement as of the time it was declared effective.

(2) For the purpose of determining any liability under the Securities Act, each post-effective amendment that contains a form of prospectus shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
1.1*	Form of Underwriting Agreement				
2.1*†	Agreement and Plan of Merger, dated June 1, 2020, by and among the Registrant, Berries Merger Sub, Inc, BlackThorn Therapeutics, Inc. and Fortis Advisors LLC				
2.2*†	Agreement and Plan of Merger, dated November 24, 2020, by and among the Registrant, Alairion Merger Sub I, Inc, Alairion Merger Sub II, LLC, Alairion, Inc. and John F. Lee				
3.1*	Amended and Restated Certificate of Incorporation, as amended, currently in effect				
3.2*	Form of Amended and Restated Certificate of Incorporation, to be in effect immediately prior to the completion of this offering				
3.3*	Bylaws, currently in effect				
3.4*	Form of Amended and Restated Bylaws, to be in effect immediately prior to the completion of this offering				
4.1*	Reference is made to Exhibits 3.1 through 3.4				
4.2*	Form of Common Stock Certificate				
5.1*	Opinion of Latham & Watkins LLP				
10.1*	Investors' Rights Agreement, dated September 8, 2020, by and among the Registrant and the investors listed therein				
10.2*†	Research Collaboration and License Agreement, dated September 10, 2021, by and between the Registrant and Amgen Inc.				
10.3*†	Exclusive License Agreement for CK1d, dated September 10, 2021, by and between the Registrant and Amgen Inc.				
10.4*†	Exclusive License Agreement for GCASE, dated September 10, 2021, by and between the Registrant and Amgen Inc.				
10.5(a)*†	License Agreement, dated November 23, 2015, by and between BlackThorn Therapeutics, Inc. and Scripps Research Institute				
10.5(b)*†	First Amendment to License Agreement, dated November 13, 2017, by and between BlackThorn Therapeutics, Inc. and Scripps Research Institute				
10.5(c)*†	Second Amendment to License Agreement, dated April 9, 2019, by and between BlackThorn Therapeutics, Inc. and Scripps Research Institute				
10.6*	Lease, dated September 16, 2020, by and between the Registrant and BRE-BMR Grove LLC				
10.7(a)*#	2020 Equity Incentive Plan				
10.7(b)*#	Form of Stock Option Agreement under the 2020 Equity Incentive Plan				

Exhibit Number	Exhibit Description	Incorporated by Reference			Filed Herewith
		Form	Date	Number	
10.7(c)*#	Form of Restricted Stock Purchase Agreement under the 2020 Equity Incentive Plan				
10.8(a)*#	2022 Incentive Award Plan				
10.8(b)*#	Form of Stock Option Grant Notice and Stock Option Agreement under the 2022 Incentive Award Plan				
10.8(c)*#	Form of Restricted Stock Award Grant Notice and Restricted Stock Award Agreement under the 2022 Incentive Award Plan				
10.8(d)*#	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the 2022 Incentive Award Plan				
10.9*#	Employee Stock Purchase Plan				
10.10*#	Employment Agreement by and between the Registrant and Paul Berns				
10.11*#	Employment Agreement by and between the Registrant and Lori Lyons-Williams				
10.12*#	Employment Agreement by and between the Registrant and Joshua Pinto, Ph.D.				
10.13*#	Employment Agreement by and between the Registrant and Nick Brandon, Ph.D.				
10.14*#	Employment Agreement by and between the Registrant and John Dunlop, Ph.D.				
10.15*#	Employment Agreement by and between the Registrant and John Reynders, Ph.D.				
10.16*#	Employment Agreement by and between the Registrant and Jane Tiller, MBChB, FRCPsych				
10.17*#	Employment Agreement by and between the Registrant and Tamara L. Tompkins				
10.18*#	Non-Employee Director Compensation Program				
10.19*	Form of Indemnification and Advancement Agreement for directors and officers				
21.1*	List of subsidiaries				
23.1*	Consent of Independent Registered Public Accounting Firm				
23.2*	Consent of Latham & Watkins LLP (included in Exhibit 5.1)				
24.1*	Power of Attorney (reference is made to the signature page to the Registration Statement)				

* To be filed by amendment.
\# Indicates management contract or compensatory plan.
† Certain portions of this document that constitute confidential information have been redacted in accordance with Regulation S-K, Item 601(b)(10).

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, the registrant has duly caused this registration statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Watertown, State of Massachusetts, on the day of , 2022.

NEUMORA THERAPEUTICS, INC.

By: _____
Name: Paul Berns
Title: Chief Executive Officer

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Paul Berns and Joshua Pinto, Ph.D. and each of them, his or her true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him or her and in his or her name, place, and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this registration statement and any and all additional registration statements pursuant to Rule 462(b) of the Securities Act of 1933, and to file the same, with all exhibits thereto, and all other documents in connection therewith, with the Securities and Exchange Commission, granting unto each said attorney-in-fact and agents full power and authority to do and perform each and every act in person, hereby ratifying and confirming all that said attorneys-in-fact and agents or either of them or their or his or her substitute or substitutes may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, this registration statement has been signed by the following persons in the capacities and on the dates indicated.

Signature	Title	Date
Paul Berns	Chief Executive Officer and Director (principal executive officer)	, 2022
Joshua Pinto, Ph.D.	Chief Financial Officer (principal financial officer)	, 2022
Kristina M. Burow	Director	, 2022
Matthew Fust	Director	, 2022
Maykin Ho, Ph.D.	Director	, 2022
Robert Nelsen	Director	, 2022
Kári Stefánsson, M.D.	Director	, 2022
Stacie Weninger, Ph.D.	Director	, 2022