

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

SCHEDULE 14A

Proxy Statement Pursuant to Section 14(a) of the Securities
Exchange Act of 1934 (Amendment No.)

Filed by the Registrant

Filed by a Party other than the Registrant

Check the appropriate box:	
<input type="checkbox"/>	Preliminary Proxy Statement
<input type="checkbox"/>	Confidential, for use of the Commission only (as permitted by Rule 14a-6(e)(2))
<input checked="" type="checkbox"/>	Definitive Proxy Statement
<input type="checkbox"/>	Definitive Additional Materials
<input type="checkbox"/>	Soliciting Material Pursuant to §240.14a-12

ULTRAGENYX PHARMACEUTICAL INC.



(Name of Registrant as Specified In Its Charter)

(Name of Person(s) Filing Proxy Statement, if other than the Registrant)

Payment of Filing Fee (Check all boxes that apply):	
<input checked="" type="checkbox"/>	No fee required
<input type="checkbox"/>	Fee paid previously with preliminary materials
<input type="checkbox"/>	Fee computed on table in exhibit required by Item 25(b) per Exchange Act Rules 14a-6(i)(1) and 0-11



2022 PROXY STATEMENT

June 24, 2022

8:00 a.m. Pacific Time

www.virtualshareholdermeeting.com/RARE2022



Notice of Annual Meeting of Stockholders

To Be Held on
June 24, 2022 at
8:00 a.m. Pacific Time

Dear Stockholder:

You are cordially invited to attend the Annual Meeting of Stockholders of Ultragenyx Pharmaceutical Inc., a Delaware corporation (we, us, Ultragenyx or the Company), which will be held on June 24, 2022, at 8:00 a.m. Pacific Time virtually via the Internet at www.virtualshareholdermeeting.com/RARE2022 (Annual Meeting). Instructions on how to participate in the Annual Meeting and demonstrate proof of stock ownership are included in this Proxy Statement. The webcast of the Annual Meeting will be archived for one year after the date of the Annual Meeting at www.virtualshareholdermeeting.com/RARE2022. Only stockholders who held stock at the close of business on the record date, April 26, 2022, may vote at the Annual Meeting or any adjournment or postponement thereof.

In the event of a technical malfunction or other situation that the meeting chair determines may affect the ability of the Annual Meeting to satisfy the requirements for a meeting of stockholders to be held by means of remote communication under the Delaware General Corporation Law, or that otherwise makes it advisable to adjourn the Annual Meeting, the chair or secretary of the Annual Meeting will convene the meeting at 10:00 a.m. Pacific Time on the date specified above and at the Company's address specified above solely for the purpose of adjourning the meeting to reconvene at a date, time and physical or virtual location announced by the meeting chair. Under either of the foregoing circumstances, we will post information regarding the announcement on the Investors page of the Company's website at <https://ir.ultragenyx.com>.

At the Annual Meeting, you will be asked to consider and vote upon: (1) the election of the three Class III director nominees named in the Proxy Statement; (2) the ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2022; (3) an advisory (non-binding) resolution to approve the compensation of our named executive officers; (4) an advisory (non-binding) resolution to approve the frequency of future advisory votes on executive compensation; and (5) any other business that may properly come before the Annual Meeting or any adjournment or postponement thereof. No other items of business are expected to be considered, and no other director nominees will be entertained, at the Annual Meeting.

The accompanying Proxy Statement more fully describes the details of the business to be conducted at the Annual Meeting. Proposal No. 1 relates solely to the election of the three directors nominated by the Board of Directors. After careful consideration, our Board of Directors has unanimously approved the proposals and recommends that you vote **FOR** each of the three director nominees, **ONE YEAR** with respect to the say on pay frequency proposal and **FOR** each of the other proposals described in the Proxy Statement. In accordance with Delaware law, a list of stockholders entitled to vote at the Annual Meeting will be available in electronic form during the Annual Meeting at www.virtualshareholdermeeting.com/RARE2022 and will be accessible during normal business hours for ten days prior to the meeting at our principal place of business, 60 Leveroni Court, Novato, California 94949.

We are pleased to make use of the U.S. Securities and Exchange Commission (SEC) rules that allow companies to furnish proxy materials to their stockholders via the Internet. We believe the ability to deliver proxy materials electronically allows us to provide our stockholders with the information they need, while lowering the costs of delivery and reducing the environmental impact from the distribution of our Annual Meeting materials.

We look forward to speaking with you at the Annual Meeting.

Sincerely,



Emil D. Kakkis, M.D., Ph.D.
President and Chief Executive Officer
April 28, 2022

WHETHER OR NOT YOU EXPECT TO ATTEND THE ANNUAL MEETING, PLEASE VOTE VIA THE INTERNET AS INSTRUCTED IN THE NOTICE OF INTERNET AVAILABILITY OR, IF YOU REQUESTED AND RECEIVED A PRINTED COPY OF THE PROXY STATEMENT, COMPLETE, DATE, SIGN, AND RETURN THE ENCLOSED PROXY CARD USING THE ENCLOSED RETURN ENVELOPE, AS PROMPTLY AS POSSIBLE SO THAT YOUR SHARES MAY BE REPRESENTED AT THE ANNUAL MEETING. YOU MAY ALSO VOTE AT THE VIRTUAL ANNUAL MEETING.

IMPORTANT NOTICE REGARDING THE AVAILABILITY OF PROXY MATERIALS FOR THE ANNUAL MEETING OF STOCKHOLDERS TO BE HELD ON JUNE 24, 2022:

The Proxy Statement and Annual Report on Form 10-K for the year ended December 31, 2021 are available at www.proxyvote.com.

VOTING METHODS

If you are an owner of record as of the record date, you may vote via any of the following methods:



INTERNET
Visit the website at:
www.proxyvote.com



TELEPHONE
Call toll-free at
1-800-690-6903



MAIL
If you requested and received a proxy card, sign, date and mail the proxy card in the enclosed envelope



AT THE MEETING:
Vote at the meeting by going to:
www.virtualshareholdermeeting.com/RARE2022

If you are a beneficial owner of shares held through a broker, bank or other owner of record, you must follow the voting instructions you receive from the owner of record to vote your shares.

Table of Contents

Proxy Statement Overview	4
Meeting and Voting Information	4
Business Highlights	4
Board of Directors	5
Corporate Governance Overview	7
Stockholder Engagement	8
Proposal 1 – Election of Class III Directors	9
Nomination of Directors	9
Nominees and Incumbent Directors	10
Class III Directors Nominated for Election	10
Class I Directors Continuing in Office Until 2023	11
Class II Directors Continuing in Office Until 2024	12
Current Member Not Standing for Reelection	14
Vote Required	14
Director Resignation Policy	14
Proposal 2 – Ratification of the Selection of Independent Registered Public Accounting Firm	15
Fees for Independent Registered Public Accounting Firm	16
Vote Required	16
Report of the Audit Committee	17
Proposal 3 – Advisory (Non-Binding) Vote to Approve the Compensation of our Named Executive Officers	18
Background	18
Vote Required	18
Proposal 4 – Advisory (Non-Binding) Vote On Frequency of Future Advisory Votes to Approve Executive Compensation	19
Background	19
Recommendation	19
Vote Required	19
Corporate Governance	20
Director Independence	20
Director Commitments	20
Global Code of Conduct	20
Anti-Hedging Policy	20
Stockholder Communications	20
Board of Directors and Committees	21
Board Leadership Structure	21
Role of the Board in Risk Oversight	21
Board Committees	22
Compensation Committee Interlocks and Insider Participation	24
Environmental, Social and Governance (ESG) Matters	25
Executive Officers	28
Certain Relationships and Related-Person Transactions	30
Delinquent Section 16(a) Beneficial Ownership Reports	30
Security Ownership of Certain Beneficial Owners and Management	31
Executive Compensation	33
Compensation Discussion and Analysis	33
Fiscal 2021 Compensation	43
Risk Management and Mitigation	45
Compensation Committee Report	45
Summary Compensation Table	46
Grants of Plan-Based Awards	49
Outstanding Equity Awards at December 31, 2021	50
Option Exercises and Stock Vested	51
Pension Benefits	51
Nonqualified Deferred Compensation	51
Potential Payments Upon Termination or Change of Control	53
Equity Compensation Plan Information	55
Director Compensation	56
CEO Pay Ratio	57
Additional Information	58
Other Business	62
Forward-Looking Statements	62
Delivery Of Proxy Materials	62

Proxy Statement Overview

This overview highlights certain information contained elsewhere in this Proxy Statement and does not contain all of the information that you should consider. You should read the entire Proxy Statement carefully before voting. For more complete information regarding our business and 2021 performance, please review our Annual Report on 2021 Form 10-K as filed with the U.S. Securities and Exchange Commission (SEC) on February 15, 2022.

Meeting and Voting Information

 Meeting Date and Meeting Time June 24, 2022 8:00 a.m. Pacific Time	 Record Date April 26, 2022	 Location Live via audio webcast at www.virtualshareholdermeeting.com/RARE2022
--	---	---

We intend to mail the Notice Regarding the Availability of Proxy Materials containing instructions on how to access this Proxy Statement and our 2021 Annual Report on Form 10-K on or about April 28, 2022 to all stockholders entitled to vote at the Annual Meeting.

Proposals	Board Vote Recommendation	For More Information See Page
Proposal 1 Election of Class III Directors	FOR each nominee	9
Proposal 2 Ratification of the selection of Ernst & Young LLP as our auditor	FOR	15
Proposal 3 Say on Pay	FOR	18
Proposal 4 Say on Pay frequency	Every ONE YEAR	19

Business Highlights

In 2021, we made significant advances with our late-stage pipeline products while exceeding expectations for the performance of our commercial products and finishing the year in a strong financial position. Our key financial and operational accomplishments during the year include:

Significant Revenue Growth



Revenue

We achieved \$351.4 million in total revenue during 2021, a 30% increase compared to total revenue of \$271 million in 2020, largely driven by continued strong growth in Crysvida[®] (burosumab) sales during the year. Despite the limitations and challenges related to the ongoing COVID-19 pandemic, we exceeded our 2021 guidance range of \$180 million to \$190 million, recognizing \$192.6 million in Crysvida[®] revenue in the Ultragenyx territories. Sales of Dojolvi[®] (triheptanoin) continued to be strong in the United States a full year after product approval and launch, with approximately 270 patients on reimbursed commercial therapy in the United States as of the end of 2021.

Performance

We made important progress with the clinical development of our early and late-stage product candidates and we expect to continue enrolling our pivotal programs throughout 2022. We expanded our global commercial efforts, including obtaining additional product approvals from regulatory authorities in certain countries outside of the United States for our commercialized products and beginning to establish our commercial organization in Japan. We leveraged creative, technology-focused solutions to overcome logistical and technical challenges presented by the COVID-19 pandemic to successfully complete the technology transfer of our PCL and HEK293 platforms to Daiichi Sankyo Co. (Daiichi Sankyo) within the expected time period. The transfer enables Daiichi Sankyo to use the technologies for its internal gene therapy programs pursuant to the terms of our license and technology access agreement with them. Finally, in 2021, we continued to make meaningful progress on construction of our gene therapy manufacturing facility in Bedford, Massachusetts.

Board of Directors

The following table provides summary information about each nominee for director at the Annual Meeting and our continuing directors, as of the date of this Proxy Statement.

Nominee/Director Name	Age	Principal Occupation	Director Since	Year Current Term Expires	Current Director Class	Independent
Director Nominees						
Lars Ekman, M.D., Ph.D.	72	Executive Partner at Sofinnova	2016	2022	III	✔
Matthew K. Fust	57	Board member and advisor to various life science companies	2014	2022	III	✔
Amrit Ray, M.D.	49	Chief Patient Officer at Biohaven Pharmaceuticals	2022	2022	III	✔
Continuing Directors						
Emil D. Kakkis, M.D., Ph.D.	61	President and Chief Executive Officer, Ultragenyx	2010	2023	I	✘
Shehnaaz Suliman, M.D.	50	Chief Executive Officer of ReCode Therapeutics	2019	2023	I	✔
Daniel G. Welch	64	Executive Chairman and board member to various biotechnology companies	2015	2023	I	✔
Deborah Dunsire, M.D.	59	President and CEO of H. Lundbeck A/S	2017	2024	II	✔
Michael Narachi	62	President and CEO of CODA Biotherapeutics, Inc.	2015	2024	II	✔
Corsee D. Sanders, Ph.D.	65	Board member and advisor to various life science companies	2021	2024	II	✔



Board Diversity

Our Nominating and Corporate Governance Committee places significant emphasis on diversity and actively considers whether potential candidates would assist in achieving a mix of Board members that represents a diversity of talents, skills, backgrounds, and expertise. The current composition of our Board reflects the importance of diversity to the Board. Currently, three of our directors self-identify as Asian, one self-identifies as LGBTQ+ and three are women. We also have a female chairperson of our Nominating and Corporate Governance Committee. In accordance with Nasdaq's board diversity listing standards, below is the aggregate statistical information about our Board's self-identified gender and racial characteristics and LGBTQ+ status as voluntarily confirmed to us by each of our directors.

Board Diversity Matrix (as of the date of this Proxy Statement)					
Total Number of Directors:				10	
	Female	Male	Non-Binary	Did not Disclose Gender	
Gender	3	7	—	—	
Number of Directors who identify in any of the categories below:					
African American or Black	—	—	—	—	
Alaskan Native or Native American	—	—	—	—	
Asian	2	1	—	—	
Hispanic or Latinx	—	—	—	—	
Native Hawaiian or Pacific Islander	—	—	—	—	
White	1	6	—	—	
Two or More Races or Ethnicities	—	—	—	—	
LGBTQ+	—	1	—	—	
Did not disclose demographic background	—	—	—	—	

Board Skills and Experience

Our Nominating and Corporate Governance Committee also considers numerous other skills, qualities and experiences when evaluating director nominees, including whether the nominee has specific strengths that would augment existing skills and experiences of the Board and in a manner that is aligned with the company's strategic direction. The following matrix highlights each director's primary skills or knowledge in these areas as identified by the Nominating and Corporate Governance Committee. The matrix does not encompass all of the knowledge, skills, experiences or attributes of our directors, and the fact that a particular knowledge, skill, experience or attribute is not listed does not mean that a director does not possess it. In addition, the absence of a particular knowledge, skill, experience or attribute with respect to any of our directors does not mean the director in question is unable to contribute to the decision-making process in that area. The type and degree of knowledge, skill and experience listed below may vary among the members of the Board.

	Welch	Kakkis	Aliski	Dunsire	Ekman	Fust	Narachi	Ray	Sanders	Suliman
Core Board Capabilities										
Biopharma C-level leadership	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Scientific and research leadership		✓			✓			✓	✓	✓
Clinical development leadership		✓		✓	✓		✓	✓	✓	✓
Regulatory leadership		✓			✓		✓	✓	✓	
Rare disease commercial experience	✓	✓	✓	✓						
Biopharma commercial leadership	✓		✓	✓			✓	✓		
Global access, pricing and reimbursement	✓		✓	✓			✓	✓		
Global business operations	✓	✓	✓	✓		✓	✓	✓	✓	✓
Finance and capital markets	✓			✓	✓	✓	✓	✓		✓
Corporate strategy and/or business development leadership	✓	✓		✓			✓	✓		✓
Corporate governance and board experience	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Relevant / Advisory Capabilities										
Compliance (GXP, commercial)	✓	✓	✓	✓	✓	✓	✓	✓	✓	
Corporate legal and IP	✓			✓			✓			✓
Government affairs and policy	✓	✓		✓			✓	✓		
Human resources and organizational development	✓	✓		✓		✓	✓	✓	✓	✓
Manufacturing/supply chain	✓	✓		✓			✓			

Corporate Governance Overview

We are committed to maintaining good corporate governance practices and we periodically review our practices. We believe that good corporate governance, including the practices listed below, promotes the long term interests of our stockholders.

- All of our directors are independent, other than our President and Chief Executive Officer
- Director Resignation Policy that applies when a director fails to receive majority support in an uncontested election
- Solely independent Audit Committee, Nominating and Corporate Governance Committee and Compensation Committee
- Strong and active independent Chairman
- Annual Board and committee self-evaluations
- Active stockholder engagement program
- All our current directors attended 100% of board and committee meetings of which the director was a member in 2021
- Minimum stock ownership requirements for named executive officers and directors
- Director Overboarding Policy limiting the total number of public company boards that a director may serve to five total public company boards and public company CEO directors to three total public company boards
- Board and committees are authorized to engage outside advisors independently of management
- Clawback Policy which permits us to recover 100% of any of any incentive based compensation (including performance based cash and equity compensation tied to performance objectives) that we pay to our current or former executive officers (see section entitled "Clawback Policy" of this Proxy Statement for additional details)
- Prohibition against hedging transactions by our directors and employees, including our executive officers
- Corporate Governance Guidelines and robust Global Code of Conduct

Stockholder Engagement



Our stockholder outreach program is an ongoing effort by our management to engage with our stockholders throughout the year in a continuous and meaningful way and is consistent with our commitment to engagement, communication, and transparency. During our recent engagement season, we reached out to stockholders representing over 75% of our outstanding shares as of September 30, 2021, including almost all of our top 30 largest stockholders. In response to our outreach efforts, we met with stockholders who responded to our engagement request, which holders represented approximately 58% of our outstanding shares as of September 30, 2021. Participants at these meetings included our Chief Legal Officer, our Chief Human Resources Officer and Shehnaaz Suliman, M.D., Chairperson of our Nominating and Corporate Governance Committee. Topics discussed during the meetings included executive compensation, corporate governance and environmental, social and governance (ESG) and sustainability matters. Our Board and management team reviewed and considered feedback received throughout our engagement activities and adopted certain changes in response to such feedback as described below.

Outcomes from Engagement

The Board adopted certain changes to our corporate governance practices in response to feedback we received from our stockholder engagement activities. These changes include:

Corporate Governance

Feedback Received	Action Taken
Increased transparency regarding the skills and experience of individual directors	We included a board skills matrix in this Proxy Statement to reflect the skills and experiences of our directors on an individual basis
Increased transparency regarding the Company's initiatives related to ESG and sustainability matters	We published our inaugural ESG report in April 2022, which is available in digital format on our website at www.ultragenyx.com under "Corporate Sustainability".
Public disclosure of our employee workforce demographic information	We disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 information related to the percentage of women in our global workforce and in leadership positions as well as the percentage of our U.S. workforce that are racially or ethnically diverse. This information was also included in our inaugural ESG report, which we published in April 2022.

PROPOSAL 1

Election of Class III Directors

Our Amended and Restated Certificate of Incorporation provides that the Board is to be divided into three classes as nearly equal in number as reasonably possible, with directors in each class generally serving three-year terms. The total Board size is currently fixed at ten directors. The Class III directors (whose terms expire at the Annual Meeting) are Lars Ekman, M.D., Ph.D., Matthew K. Fust and Amrit Ray, M.D. Dr. Ekman and Mr. Fust were previously elected by stockholders at the 2019 annual meeting. Dr. Ray was appointed as a director by the Board in April 2022. William Aliski, also a Class III director, is not standing for reelection at the Annual Meeting. The Class I directors (whose terms expire at the 2023 annual meeting of stockholders) are Emil D. Kakkis, M.D., Ph.D., Shehnaaz Suliman, M.D., and Daniel G. Welch. The Class II directors (whose terms expire at the 2024 annual meeting of stockholders) are Deborah Dunsire M.D., Michael Narachi and Corsee D. Sanders, Ph.D. The Class III directors elected at the Annual Meeting will hold office until the 2025 annual meeting of stockholders or until their successors are elected and qualified, unless they resign or their seats become vacant due to death, removal, or other cause in accordance with our Amended and Restated Bylaws (bylaws).

As described below, the Board, upon the recommendation of the Nominating and Corporate Governance Committee, has nominated the director nominees listed above for election as directors at the Annual Meeting. They have indicated their willingness to serve if elected. Should any of them become unable or, for good cause, unwilling to serve, the persons named on the enclosed proxy as proxy holders may vote all proxies given in response to this solicitation for the election of a substitute nominee(s) chosen by the Board or the Board may reduce the size of the Board.

Nomination of Directors

The Nominating and Corporate Governance Committee reviews and recommends to the Board potential nominees for election to the Board. In reviewing potential nominees, the Nominating and Corporate Governance Committee considers the qualifications of each potential nominee in light of the Board's existing and desired mix of experience and expertise. Specifically, the Nominating and Corporate Governance Committee considers each potential nominee's personal and professional ethics, integrity, values, experience, interest in the Company, and commitment to the representation of the long-term interests of the stockholders. As described more fully above under " – Board Diversity, Skills and Expertise", the Nominating and Corporate Governance Committee also considers each potential nominee's contribution to the Board's diversity of talents, skills, backgrounds, including with respect to age, gender, national origin, sexual orientation and identification, race, ethnicity and culture, and expertise. Additionally, the Nominating and Corporate Governance Committee considers whether a nominee will be able to dedicate sufficient time to, and focus on, his or her duties as a member of the Board. The Board membership criteria are set forth in our Corporate Governance Guidelines, a copy of which is available on our website at www.ultragenyx.com in the "Corporate Governance" subsection of the "Investors & Media" tab. The Nominating and Corporate Governance Committee assesses its effectiveness in balancing these considerations in connection with its annual evaluation of the composition of the Board.

After reviewing the qualifications of potential Board candidates, the Nominating and Corporate Governance Committee presents its recommendations to the Board, which selects the final director nominees. We did not pay any fees to any third party to identify or assist in identifying or evaluating nominees for the Annual Meeting.

The Nominating and Corporate Governance Committee considers stockholder-recommended director nominees using the same criteria set forth above. Stockholders who wish to recommend a potential nominee to the Nominating and Corporate Governance Committee for consideration for election at a future annual meeting of stockholders must provide the Nominating and Corporate Governance Committee with the same information that would be required to nominate a director candidate in accordance with the process and within the deadline for nominating director candidates set forth below under the question "When are stockholder proposals and director nominations for inclusion in our proxy statement for next year's annual meeting due?" in the section entitled "Additional Information".

Nominees and Incumbent Directors

Information regarding our director nominees and our current directors, including their respective age as of the date of this Proxy Statement and their principal occupation, is set forth below.

Class III Directors Nominated for Election

Lars Ekman, M.D., Ph.D. Executive Partner at Sofinnova

Age: 72
Director since: 2016
INDEPENDENT
Committees: 1
Other Public Directorships: 2

Dr. Ekman has more than 30 years of experience in the pharmaceutical industry and is currently an executive partner at Sofinnova, a venture capital firm, where Dr. Ekman has served as executive partner since March 2008. He currently serves as Chairman of the Board of Amarin Corporation plc, a public biopharmaceutical company and Chairman of the Board of Prothena Corporation plc, a public neuroscience company. Dr. Ekman previously served on the boards of Spark Therapeutics, Inc. from 2015 to December 2019, Elan Corporation plc from 2007 to 2013, InterMune Inc. from 2006 to 2013, Ocera Therapeutics, Inc. from 2009 to 2015 and Sophiris Bio, Inc. from 2010 to September 2020. From October 2008 to 2011, he served as Co-Founder and Chief Executive Officer of Cebix Inc., a C-peptide replacement therapy company. He was Executive Vice President and President of Global Research and Development at Elan Corporation plc, from January 2001 to December 2007. Prior to joining Elan, he was Executive Vice President, Research and Development at Schwarz Pharma AG, a pharmaceutical company, from February 1997 to December 2000, and prior to that was employed in a variety of senior scientific and clinical functions at Pharmacia, now Pfizer Inc. Dr. Ekman is a board-certified surgeon with a Ph.D. in experimental biology and has held several clinical and academic positions in both the United States and Europe. He holds a Ph.D. and M.D. from the University of Gothenburg, Sweden.

Skills and Qualifications specific to Ultragenyx:

We believe that Dr. Ekman is qualified to serve on our Board due to his extensive experience in the life sciences industry, and particularly his research and development expertise, as well as his membership on various boards of directors in the biotechnology industry.

Matt Fust Board member and advisor to various life science companies

Age: 57
Director since: 2014
INDEPENDENT
Committees: 2
Other Public Directorships: 2

Mr. Fust is a board member and advisor to life sciences companies. Mr. Fust currently serves on the board of directors of Atara Biotherapeutics, Inc. and Crinetics Pharmaceuticals, Inc., which are publicly traded biopharmaceutical companies. Mr. Fust also previously served on the board of directors of Sunesis Pharmaceuticals, Inc. from May 2005 to May 2017, the board of Dermira, Inc. from August 2014 to February 2020 and the board of MacroGenics, Inc. from March 2014 to May 2020. He retired as Executive Vice President of Onyx Pharmaceuticals, Inc., a biopharmaceutical company, where he served from January 2009 to January 2014. From May 2003 to December 2008, Mr. Fust served as Chief Financial Officer at Jazz Pharmaceuticals, Inc., a specialty pharmaceutical company. From 2002 to 2003, Mr. Fust served as Chief Financial Officer at Perlegen Sciences, Inc., a biopharmaceutical company. Previously, he was Senior Vice President and Chief Financial Officer at ALZA Corporation, a pharmaceutical company, where he was an executive from 1996 to 2002. From 1991 to 1996, Mr. Fust was a manager in the healthcare strategy practice at Andersen Consulting, a consulting company. Mr. Fust holds a B.A. in Accounting from the University of Minnesota and an M.B.A. from the Stanford Graduate School of Business.

Skills and Qualifications specific to Ultragenyx:

We believe that Mr. Fust is qualified to serve on our Board due to his extensive experience in the life sciences industry, his financial experience and ability to be our "audit committee financial expert," and his service as a director of other public biopharmaceutical companies.

Amrit Ray, M.D.**Chief Patient Officer at Biohaven Pharmaceuticals**

Age: 49
Director since: 2022
INDEPENDENT
Committees: 1
Other Public Directorships: 0

Dr. Ray currently serves as Chief Patient Officer at Biohaven Pharmaceuticals, a public biopharmaceutical company, a role he has held since March 2022. Prior to his role at Biohaven, he served as Senior Adviser to Bain Capital Life Sciences, an investment company, from February 2021 to March 2022. Prior to Bain Capital, Dr. Ray served as Global President, Head of R&D and Medical at Pfizer Upjohn, a division of Pfizer, Inc., a public pharmaceutical company, from January 2019 to January 2021 and as Global President, Head of R&D of Pfizer Essential Health from 2017 to January 2019. Prior to his roles at Pfizer, he held positions of increasing responsibility at Johnson & Johnson, a public pharmaceutical company, including serving as Senior Vice President, External Affairs (Science and Medicine) in 2017, Senior Vice President, Chief Medical Officer of Janssen from 2012 to 2017 and Senior Vice President, Chief Safety Officer from 2009 to 2012. Dr. Ray currently serves as a Visiting Professor of Practice, Faculty of Medical Sciences at Newcastle University in the United Kingdom and as a member of the board of directors of CorEvitas, LLC, a private company providing specialized patient registries and curated data sources. He is also currently a board member at EveryLife Foundation for Rare Diseases. Dr. Ray holds a B.S., with Honours, in Immunology and a M.D. (M.B., Ch.B.) from the University of Edinburgh. He also holds an M.B.A. from the Tuck School of Business at Dartmouth College.

Skills and Qualifications specific to Ultragenyx:

We believe that Dr. Ray is qualified to serve on our Board due to his extensive experience in the life sciences industry, and particularly his research and development expertise. Dr. Ray was recommended to the Nominating and Corporate Governance Committee as a director candidate by another director.

Class I Directors Continuing in Office Until 2023**Emil D. Kakkis, M.D., Ph.D.****Founder, President and CEO**

Age: 61
Director since: 2010
NOT INDEPENDENT
Committees: 1
Other Public Directorships: 0

Dr. Kakkis is our founder and has served as our President and Chief Executive Officer and as a member of our Board since our inception in April 2010. Prior to Ultragenyx, from September 1998 to February 2009, Dr. Kakkis served in various executive capacities, and ultimately as Chief Medical Officer, at BioMarin Pharmaceutical Inc., a biopharmaceutical company. Dr. Kakkis then served as a development consultant to BioMarin from 2009 to 2010. Dr. Kakkis is also Founder of EveryLife Foundation for Rare Diseases, a non-profit organization he started in 2009 to accelerate biotechnology innovation for rare diseases. Dr. Kakkis received the Termeer Visionary Leadership Award in 2019 and the Leadership Award from the California Life Sciences Association in 2021. Dr. Kakkis is board certified in Medical Genetics and was board certified in Pediatrics. He holds a B.A. in Biology from Pomona College and combined M.D. and Ph.D. degrees from the UCLA School of Medicine's Medical Scientist Training Program where he received the Bogen prize for his research.

Skills and Qualifications specific to Ultragenyx:

We believe that Dr. Kakkis possesses specific expert knowledge of genetics and rare diseases and operational experience in the life sciences sector that qualify him to serve on our Board.

Shehnaaz Suliman, M.D., M.Phil., M.B.A**Chief Executive Officer of ReCode Therapeutics**

Age: 50
Director since: 2019
INDEPENDENT
Committees: 2
Other Public Directorships: 1

Dr. Suliman has served as Chief Executive Officer of ReCode Therapeutics, a privately-held, integrated genetic medicines company, since January 2022. Prior to joining ReCode Therapeutics, Dr. Suliman served as President and Chief Operating Officer of Alector, Inc., a clinical stage biotechnology company, from December 2019 to December 2021 and previously served as Senior Vice President, Corporate Development and Strategy of Theravance Biopharma, Inc., a biopharmaceutical company, from July 2017 to March 2019. Prior to her position at Theravance, Dr. Suliman worked for Genentech, Inc., a biopharmaceutical company, as Group Leader and Project Team Leader in the R&D Portfolio Management and Operations Group from September 2010 to May 2015 and then as Vice President and Global Therapeutic Head, Roche Partnering from June 2015 to July 2017. Prior to Genentech, Dr. Suliman held various management roles of increasing responsibility at Gilead Sciences, Inc., a biopharmaceutical company, from January 2005 and September 2010. Prior to Gilead, Dr. Suliman was an investment banker with Lehman Brothers and Petkevich & Partners, advising public and private companies on buy- and sell-side transactions. She is a member of the board of directors of 10X Genomics, Inc., a publicly traded life science technology company. Dr. Suliman received her M.D. at the University of Cape Town Medical School, South Africa, and holds an M.B.A., with distinction, and M.Phil. in Development Studies from Oxford University, where she was a Rhodes Scholar.

Skills and Qualifications specific to Ultragenyx:

We believe that Dr. Suliman is qualified to serve on our Board due to her extensive operational experience with global biopharmaceutical companies, and particularly her expertise in business development, corporate strategy and clinical drug development.

Daniel G. Welch**Executive Chairman at Levo Therapeutics, Inc., Incarda Therapeutics, Inc. and ShouTi Pharmaceuticals**

Age: 64
Director since: 2015
INDEPENDENT
Committees: 2
Other Public Directorships: 2

Mr. Welch is currently Executive Chairman at Levo Therapeutics, Inc., Executive Chairman of Incarda Therapeutics, Inc. and Executive Chairman of ShouTi Pharmaceuticals, each a private biotechnology company, positions he has held since August 2018, March 2019 and December 2020, respectively. From January 2015 to January 2018, he was an Executive Partner at Sofinnova Ventures, a venture capital firm. Prior to Sofinnova, Mr. Welch served as Chairman, Chief Executive Officer, and President of InterMune, Inc., a biotechnology company, from May 2008 to October 2014 and served as President and Chief Executive Officer of InterMune and a member of its board of directors from September 2003 to May 2008. From August 2002 to January 2003, Mr. Welch served as Chairman and Chief Executive Officer of Triangle Pharmaceuticals, Inc., a pharmaceutical company. From October 2000 to June 2002, Mr. Welch served as President of the Pharmaceutical Division of Elan Corporation, plc., a pharmaceutical company. In addition to his Executive Chairman roles as described above, Mr. Welch currently serves on the boards of directors of Seagen Inc. (formerly Seattle Genetics, Inc.) and Nuvation Bio Inc., which are both publicly traded biotechnology companies. Mr. Welch previously served as chairman of the board of AveXis, Inc., a publicly traded biotechnology company, from January 2016 through its acquisition in May 2018, and on the board of Intercept Pharmaceuticals, Inc., a publicly traded biotechnology company, from November 2015 to June 2021. Mr. Welch holds a B.S. from the University of Miami and an M.B.A. from the University of North Carolina.

Skills and Qualifications specific to Ultragenyx:

We believe that Mr. Welch is a strong operating executive with operational and strategic expertise in the global pharmaceutical market, whose experience contributes valuable insight to the Board.

Class II Directors Continuing in Office Until 2024**Deborah Dunsire, M.D.****President and CEO of H. Lundbeck A/S**

Age: 59
Director since: 2017
INDEPENDENT
Committees: 2
Other Public Directorships: 1

Dr. Dunsire has served as President and Chief Executive Officer of H. Lundbeck A/S, a pharmaceutical company, since September 2018. She previously served as President, Chief Executive Officer and director of Xtuit Pharmaceuticals, Inc., a biopharmaceutical company, from January 2017 to March 2018. Prior to her position at Xtuit, she served as President, Chief Executive Officer and director of FORUM Pharmaceuticals Inc., a pharmaceutical company, from July 2013 to May 2016. Prior to FORUM, Dr. Dunsire worked for Takeda Pharmaceutical Company Limited, a publicly traded pharmaceutical company, as a corporate officer from June 2010 to June 2011 and a director from June 2011 to June 2013. She served as President, Chief Executive Officer and director of Millennium Pharmaceuticals, Inc., a biopharmaceutical company, from 2005 to 2008, when it was acquired by Takeda, and then as President and Chief Executive Officer of Millenium: The Takeda Oncology Company after the acquisition from 2008 to 2013. Prior to Millenium, Dr. Dunsire held various roles of increasing responsibility at Novartis Pharma AG from 1988 to 2005. Dr. Dunsire currently serves as a director of Syros Pharmaceuticals, a public biotechnology company and previously served as a director of Allergan, Inc., a publicly traded pharmaceutical company, from December 2006 to April 2015 and as a director of Alexion Pharmaceuticals Inc., a public biopharmaceutical company, from January 2018 to July 2021. She obtained an MBBCh from the University of the Witwatersrand.

Skills and Qualifications specific to Ultragenyx:

We believe that Dr. Dunsire is qualified to serve on our Board due to her extensive experience in the biotechnology and pharmaceutical sectors, including service as the chief executive officer of various pharmaceutical companies, which gives her the skills to provide us with operational and strategic insights.

Michael Narachi**President, CEO and Director of CODA Biotherapeutics, Inc.****Age: 62****Director since: 2015****INDEPENDENT****Committees: 2****Other Public Directorships: 0**

Mr. Narachi currently serves as President, Chief Executive Officer and director of CODA Biotherapeutics, Inc., a private biotherapeutics company. Between March 2009 and July 2018, Mr. Narachi served as President, Chief Executive Officer and director of Orexigen Therapeutics, Inc., a biotechnology company. Orexigen filed for reorganization under Chapter 11 of the U.S. Bankruptcy Code in March 2018. Previously, Mr. Narachi served as Chairman, Chief Executive Officer, and President of Ren Pharmaceuticals, Inc., a private biotechnology company, from November 2006 to March 2009. In 2004, Mr. Narachi retired as an officer and Vice President of Amgen Inc., a leading therapeutics company, where he served as General Manager of Amgen's Anemia Business from 1999 to 2003. Mr. Narachi joined Amgen in 1984 and held various senior positions throughout the organization over a 20-year career including: Vice President of Development and Representative Director for Amgen Japan; Head of Corporate Strategic Planning; Chief Operations Officer of Amgen BioPharma; and Vice President, Licensing and Business Development. He served as General Manager of Amgen's Anemia Business from 1999 to 2003 until his retirement in 2004. Mr. Narachi currently serves on the board of directors of BIO, the Biotechnology Innovation Organization, and previously served as a member of the board of directors of PhRMA, the Pharmaceutical Research and Manufacturers of America. He previously served as the chairman of the board of directors of Celladon Corporation, a publicly traded gene therapy company, from October 2013 to March 2016, and as a director of AMAG Pharmaceuticals, Inc., a publicly traded specialty pharmaceutical company, from November 2006 to April 2014. Mr. Narachi holds a B.S. in Biology and an M.A. in Biology and Genetics from the University of California at Davis. He also holds an M.B.A. from the Anderson Graduate School of Management at University of California, Los Angeles.

Skills and Qualifications specific to Ultragenyx:

We believe that Mr. Narachi is qualified to serve on our Board due to his extensive experience in the life sciences industry, his service as the chief executive officer of various biotechnology companies, and his membership on various boards of directors in the biotechnology and pharmaceutical sectors, all of which give him the skills to provide us with operational and strategic insights.

Corsee D. Sanders, Ph.D.**Board member and adviser to various life science companies****Age: 65****Director since: 2021****INDEPENDENT****Committees: 2****Other Public Directorships: 3**

Dr. Sanders currently serves as a board member and advisor to life science companies. Dr. Sanders currently serves as a member of the board of directors of Beigene Ltd., Molecular Templates Inc. and Legend Biotech Corporation, each a publicly traded biotechnology company, and AltruBio Inc., a private biopharmaceutical company. She is a member of the Board of Trustees and Chair of the Research Ethics Committee for the Fred Hutchinson Cancer Research Center. She most recently served as Executive Vice President at Juno Therapeutics, Inc., a biopharmaceutical company, from 2017 to 2018 and strategic advisor to the Chief Medical Officer of Celgene Corporation, a biopharmaceutical company, from 2018 to 2019 following Juno's acquisition by Celgene. Following the acquisition of Celgene by Bristol Myers Squibb, Dr. Sanders served as Transition Advisor to the Clinical Development team at BMS from 2019 to 2020. Prior to her role at BMS, she held positions of increasing responsibility at Genentech/Roche, a biotechnology company, from 1994 to 2017, including serving as Senior Vice President, Global Head of Clinical Operations and Industry Collaboration, from 2012 to 2017. Dr. Sanders holds a B.S. and M.S. in Statistics, *magna cum laude*, from the University of the Philippines. She also holds an M.A. and Ph.D. in Statistics from the Wharton Doctoral Program at the University of Pennsylvania.

Skills and Qualifications specific to Ultragenyx:

We believe that Dr. Sanders is qualified to serve on our Board due to her established and extensive experience in global clinical development and her role as an advisor and director to various companies in the biotechnology and pharmaceutical sectors, all of which give her the skills to provide us with operational and strategic insights.

Current Member Not Standing for Reelection

William Aliski

Board member and advisor to various life science companies

Age: 74

Director since: 2011

INDEPENDENT

Committees: 2

Other Public Directorships: 2

Mr. Aliski has served as a commercial consultant for early-stage orphan disease companies, including Audentes Therapeutics, Inc. from September 2018 to March 2019, Ra Pharmaceuticals, Inc. from October 2016 to March 2017, Clementia Pharmaceuticals, Inc. from December 2015 to January 2017 and May 2018 to the present, OxThera from January 2015 to April 2015, Prosensa during 2014, Adimab LLC from November 2013 to December 2013, NPS Pharmaceuticals from April 2013 to December 2014, Fidelity Biosciences from August 2012 to December 2012, and Enobia Pharma from September 2011 to March 2012. Before that, Mr. Aliski served as Senior Vice President and Chief Commercial Officer of FoldRx Pharmaceuticals, a rare disease company that is now a wholly-owned subsidiary of Pfizer Inc., from June 2009 to March 2011, as Director of Simon Kucher Partners, a global consulting firm, from January 2008 to June 2009, and as General Manager of BioMarin Europe at BioMarin Pharmaceuticals Inc. from December 2005 to January 2008. Mr. Aliski currently serves on the board of directors of Applied Genetic Technologies Corporation, a public biotechnology company, and on the board of directors of X4 Pharmaceuticals, Inc., a public biopharmaceutical company. Mr. Aliski received a B.S. in Economics and a Master of Social Planning from Boston College and an M.P.A. from the Kennedy School of Government at Harvard University.

Skills and Qualifications specific to Ultragenyx:

We believe that Mr. Aliski is qualified to serve on our Board due to his extensive experience in the life sciences industry, membership on various boards of directors, and his leadership and management experience.

Vote Required

The three nominees who receive the greatest number of affirmative votes will be elected as Class III directors. Broker non-votes and shares as to which a stockholder withholds voting authority are not considered votes cast and therefore will have no effect on the vote outcome.

Director Resignation Policy

We have a Director Resignation Policy, which is set forth in our Corporate Governance Guidelines, a copy of which is available on our website at in the "Corporate Governance" subsection of the "Investors & Media" tab. The policy establishes that any director nominee who receives more "withhold" votes than "for" votes in an uncontested election of directors is required to tender his or her resignation promptly following the certification of the election results. Abstentions and broker non-votes are not counted as either a "withhold" or "for" vote. The Nominating and Corporate Governance Committee will promptly consider the tendered resignation and make a recommendation to the Board. The Board will act on the recommendation of the Nominating and Corporate Governance Committee no later than 90 days following the certification of the election results. The Board will promptly publicly disclose its decision and, if applicable, the reasons for rejecting the tendered resignation.



THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" EACH OF THE DIRECTOR NOMINEES IDENTIFIED ABOVE.

PROPOSAL 2

Ratification of the Selection of Independent Registered Public Accounting Firm

Our Audit Committee has selected Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2022, and has further directed that we submit the selection of Ernst & Young LLP for ratification by our stockholders at the Annual Meeting.

We are not required to submit the selection of our independent registered public accounting firm for stockholder approval, but are submitting our selection of Ernst & Young LLP for stockholder ratification as a matter of good corporate governance. If the stockholders do not ratify this selection, the Audit Committee will reconsider its selection of Ernst & Young LLP. Even if the selection is ratified, our Audit Committee may direct the appointment of a different independent registered public accounting firm at any time during the year if the Audit Committee determines that the change would be in our best interests.

The Audit Committee reviews and pre-approves all audit and non-audit services performed by its independent registered public accounting firm. The Audit Committee may delegate its pre-approval authority to one or more of its members and has delegated such authority to the Chairman of the Audit Committee; any pre-approval decisions made by the Chairman are reported to the Audit Committee at the next scheduled committee meeting. The Audit Committee may pre-approve specified audit-related services (assurance and related services that are reasonably related to the performance of the audit or review of our financial statements and that are traditionally performed by the independent auditor) as well as specified tax services that the Audit Committee believes would not impair the independence of the independent auditor, and that are consistent with rules on auditor independence established by the SEC and the Public Company Accounting Oversight Board (PCAOB). The Audit Committee may also pre-approve those permissible non-audit services classified as "all other services" that it believes are routine and recurring services and would not impair the independence of the independent auditor and are consistent with SEC and PCAOB rules on auditor independence. All requests or applications for services to be provided by the independent auditor will be submitted to the Chief Financial Officer and must include a detailed description of the services to be rendered. The Chief Financial Officer or the Principal Accounting Officer, as the case may be, will authorize those services that have been pre-approved by the Audit Committee. If there is any question as to whether a proposed service fits within the pre-approved categories of services, the Chairman of the Audit Committee is to be consulted for a determination. For services that have not been pre-approved by the Audit Committee, requests or applications to provide services will be submitted to the Audit Committee by both the independent auditor and the Chief Financial Officer, and must include a joint oral or written statement as to whether, in their view, the request or application is consistent with the SEC's and PCAOB's rules on auditor independence.

All services rendered by Ernst & Young LLP in fiscal 2021 were approved in accordance with these policies. In its review of non-audit services, the Audit Committee considers, among other things, the possible impact of the performance of such services on the independent registered public accounting firm's independence. The Audit Committee has determined that the non-audit services performed by Ernst & Young LLP in the fiscal year ended December 31, 2021 were compatible with maintaining the independent registered public accounting firm's independence. Additional information concerning the Audit Committee and its activities can be found in the following sections of this Proxy Statement: "Board of Directors and Committees—Board Committees" and "Report of the Audit Committee."

Ernst & Young LLP has audited our financial statements since our inception. Representatives of Ernst & Young LLP are expected to be present at the Annual Meeting, will have the opportunity to make a statement if they desire to do so, and will be available to respond to appropriate stockholder questions.

Fees for Independent Registered Public Accounting Firm

The following is a summary of the aggregate audit fees billed or expected to be billed by Ernst & Young LLP for the indicated fiscal years and the fees billed by Ernst & Young LLP for all other services rendered during the indicated fiscal years.

	2021	2020
Audit fees ⁽¹⁾	\$ 1,747,000	\$ 1,626,000
Audit-related fees	—	—
Tax fees ⁽²⁾	65,000	94,000
All other fees	—	—
TOTAL	\$ 1,812,000	\$ 1,720,000

- (1) Audit fees consist of the aggregate fees billed for professional services rendered for the audit of our annual financial statements included in our annual reports on Form 10-K; the review of our interim financial statements included in our quarterly reports on Form 10-Q; consultation on technical accounting matters; assistance with registration statements filed with the SEC; and the issuance of comfort letters and consents.
- (2) Tax fees principally include fees for tax compliance and tax advice.

Vote Required

Ratification of the selection of the independent registered public accounting firm requires the affirmative vote of a majority of the votes cast. Because abstentions and broker non-votes are not counted as votes cast for or against this proposal, they will have no effect on the outcome of the vote.

 **THE BOARD OF DIRECTORS RECOMMENDS A VOTE "FOR" PROPOSAL NO. 2.**

Report of the Audit Committee

The Audit Committee evaluates auditor performance, manages relations with our independent registered public accounting firm, and evaluates policies and procedures relating to internal control systems. The Audit Committee operates under a written Audit Committee Charter that has been adopted by the Board, a copy of which is available on our website at www.ultragenyx.com. All members of the Audit Committee currently meet the independence and qualification standards for Audit Committee membership set forth in the listing standards and rules of Nasdaq and the SEC.

No member of the Audit Committee is a professional accountant or auditor. The members' functions are not intended to duplicate or to certify the activities of management and the independent registered public accounting firm. The Audit Committee serves a board-level oversight role in which it provides advice, counsel, and direction to management and the auditors on the basis of the information it receives, discussions with management and the auditors, and the experience of the Audit Committee's members in business, financial, and accounting matters.

The Audit Committee oversees our financial reporting process on behalf of the Board. Our management has the primary responsibility for the financial statements and reporting process, including our system of internal controls over financial reporting. In fulfilling its oversight responsibilities, the Audit Committee reviewed and discussed with management the audited financial statements included in the Annual Report on Form 10-K for the fiscal year ended December 31, 2021. This review included a discussion of the quality and the acceptability of our financial reporting, including the nature and extent of disclosures in the financial statements and the accompanying notes.

The Audit Committee discussed with our independent registered public accounting firm, which is responsible for expressing an opinion on the conformity of the audited financial statements with accounting principles generally accepted in the United States of America, their judgments as to the quality and the acceptability of our financial reporting and such other matters as are required to be discussed with the Committee pursuant to applicable rules of the PCAOB and the SEC. The Audit Committee has received the written disclosures and the letter from the independent registered public accounting firm required by the applicable rules of the PCAOB regarding the independent accountant's communications with the Audit Committee concerning independence. The Audit Committee discussed with the independent registered public accounting firm their independence.

In addition to the matters specified above, the Audit Committee discussed with our independent registered public accounting firm the overall scope, plans, and estimated costs of their audit. The Audit Committee met with the independent registered public accounting firm periodically, with and without management present, to discuss the results of the independent registered public accounting firm's examinations, the overall quality of our financial reporting, and the independent registered public accounting firm's reviews of the quarterly financial statements and drafts of the quarterly and annual reports.

Based on the reviews and discussions referred to above, the Audit Committee recommended to the Board that our audited financial statements should be included in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

Submitted by the Audit Committee of the Board of Directors

Matthew Fust, Chairperson
William Aliski
Corsee D. Sanders, Ph.D.
Michael Narachi

PROPOSAL 3

Advisory (Non-Binding) Vote to Approve the Compensation of our Named Executive Officers

Background

The Dodd-Frank Wall Street Reform and Consumer Protection Act (Dodd-Frank Act) requires that stockholders have the opportunity to cast an advisory (non-binding) vote to approve the compensation of our named executive officers (say-on-pay vote).

The say-on-pay vote is a non-binding vote on the compensation of our “named executive officers,” as described in the Compensation Discussion and Analysis section, the tabular disclosure regarding such compensation, and the accompanying narrative disclosure, set forth in this Proxy Statement. The say-on-pay vote is not a vote on our general compensation policies, compensation of our Board of Directors, our compensation policies as they relate to risk management, or our pay ratio.

Our philosophy in setting compensation policies for executive officers has two fundamental objectives: (1) to attract and retain a highly-skilled team of talented executives and (2) to align our executives’ interests with those of our stockholders by rewarding short-term and long-term performance and tying compensation to increases in stockholder value. The Compensation Committee believes that executive compensation should be directly linked to performance, including continuous improvements in corporate performance and accomplishments of our strategic plan that are expected to increase stockholder value. The Compensation Discussion and Analysis section starting on page 33 provides a more detailed discussion of the executive compensation program and compensation philosophy.

The vote under this Proposal No. 3 is advisory and therefore not binding on us, the Board, or our Compensation Committee. However, our Board, including our Compensation Committee, values the opinions of our stockholders and, to the extent there is any significant vote against this proposal, we will consider our stockholders’ concerns and evaluate what actions may be appropriate to address those concerns. The Dodd-Frank Act requires us to hold the say-on-pay vote at least once every three years, and we have determined to hold a say-on-pay vote every year. Unless the Board modifies its policy on the frequency of holding say-on-pay advisory votes, the next say-on-pay vote will occur in 2023.

Stockholders will be asked at the Annual Meeting to approve the following resolution pursuant to this Proposal No. 3:

RESOLVED, that the stockholders of Ultragenyx Pharmaceutical Inc. approve, on an advisory basis, the compensation of the Company’s “named executive officers” (as defined in the Company’s definitive proxy statement for the 2022 Annual Meeting of Stockholders (the “Proxy Statement”)), as such compensation is described in the Compensation Discussion and Analysis section, the tabular disclosure regarding such compensation, and the accompanying narrative disclosure, set forth in the Company’s Proxy Statement.

Vote Required

Approval of this resolution requires the affirmative vote of a majority of the votes cast on this proposal. Because abstentions and broker non-votes are not counted as votes cast for or against this resolution, they will have no effect on the outcome of the vote.

 THE BOARD OF DIRECTORS RECOMMENDS A VOTE “FOR” PROPOSAL NO. 3.

PROPOSAL 4

Advisory (Non-Binding) Vote On Frequency of Future Advisory Votes to Approve Executive Compensation

Background

We are also required by the Dodd-Frank Act to provide stockholders with a separate advisory (non-binding) vote for the purpose of asking stockholders to express their preference for the frequency of future say-on-pay votes (say-on-frequency vote). Stockholders may indicate whether they would prefer an advisory vote to approve executive compensation once every one, two or three years. We are required to solicit stockholder votes on the frequency of future say-on-pay proposals at least once every six years, although we may seek stockholder input more frequently. Unless the Board modifies its policy on the frequency of holding say-on-frequency advisory votes, the next say-on-frequency vote will occur in 2028.

The frequency period that receives the most votes (every one, two or three years) will be deemed to be the recommendation of the stockholders. This vote is advisory and not binding on the Board of Directors. However, the Board of Directors has determined that if the frequency period of “every one year” receives the highest number of votes, then it will adopt an annual frequency of future say-on-pay votes.

Recommendation

The Board believes there is a reasonable basis for holding the say-on-frequency vote every year, every two years and every three years; less frequent votes encourage a more long-term analysis of the Company's executive compensation programs and would avoid the burden that annual votes would impose on stockholders required to evaluate the executive compensation program each year, but more frequent votes provide stockholders with the opportunity to react to emerging trends in compensation and gives the Board and the Compensation Committee the opportunity to evaluate the compensation program each year in light of timely input from stockholders. The Board also believes that it is best practice to hold the advisory vote on executive compensation annually.

Therefore, the Board recommends that stockholders vote to hold the advisory vote on executive compensation every one year. Stockholders are not voting, however, to approve or disapprove of this particular recommendation. The proxy card provides for four choices and stockholders are entitled to vote on whether the advisory vote on executive compensation should be held every one, two, or three years, or to abstain from voting.

Vote Required

The frequency period that receives the most votes (every one, two or three years) will be deemed to be the recommendation of the stockholders. Abstentions and broker non-votes will have no effect on the outcome of the vote, except to the extent that the failure to vote for a particular frequency period may result in another frequency period receiving a larger proportion of the votes cast.

 THE BOARD OF DIRECTORS RECOMMENDS A VOTE OF EVERY “ONE YEAR” FOR PROPOSAL NO. 4.

Corporate Governance

Director Independence

Our Board currently consists of ten members. Our Board has determined that Mr. Aliski, Dr. Dunsire, Dr. Ekman, Mr. Fust, Mr. Narachi, Dr. Ray, Dr. Sanders, Dr. Suliman, and Mr. Welch qualify as “independent” directors in accordance with Nasdaq listing requirements and rules. Dr. Kakkis is not considered independent because he is an employee of the Company. Former director Clay B. Siegall, whose term expired at the 2021 annual meeting of stockholders, was independent during the period he served on the Board. Under Nasdaq rules, the Board’s determination of a director’s independence considers objective tests, such as whether the director is, or has been within the last three years, an employee of the Company and whether the director or any of his or her family members has engaged in certain types of business dealings with us. Under Nasdaq rules, our Board also evaluates whether any relationships exist that, in the opinion of our Board, would interfere with the exercise of independent judgment in carrying out the responsibilities of a director. In making these independence determinations, our Board reviewed and discussed information provided by the directors and us with regard to each director’s business and personal activities and relationships as they may relate to us and our management. There are no family relationships among any of our directors or executive officers.

Director Commitments

Our Board believes that all members of the Board must have sufficient time to focus on his or her Board duties. Our Corporate Governance Guidelines limit the total number of public company boards that a director may serve as follows:

- *Director who is not a public company Chief Executive Officer:* five total public company boards
- *Director who serves as a Chief Executive Officer of a public company:* three total public company boards

All of our directors are currently in compliance with our policy.

Global Code of Conduct

We have adopted a Global Code of Conduct that applies to all of our employees, officers, and directors, including those officers responsible for financial reporting. Our Global Code of Conduct is available on our website, www.ultragenyx.com, under the “Corporate Governance” subsection of the “Investors & Media” tab. We will promptly disclose on our website any future changes or amendments to the Global Code of Conduct that we are required to disclose, and any waivers of our Global Code of Conduct that apply to our Chairman of the Board, any of our executive officers, or any member of our Board.

Anti-Hedging Policy

Our insider trading policy prohibits our directors and employees, including our executive officers, from engaging in hedging transactions that are designed to hedge, offset or transfer with respect to equity compensation received by a director or employee, all or a portion of the risk of a decline in the market price of shares of our stock.

Stockholder Communications

Generally, stockholders who have questions or concerns regarding the Company should contact our Investor Relations department at (844) 280-7681. However, any stockholders who wish to address questions regarding our business or affairs directly with the Board, or any individual director, should direct his or her questions in writing to the Chairman of the Board, c/o Ultragenyx Pharmaceutical Inc., 60 Leveroni Court, Novato, California 94949. At the request of the Chairman of the Board, the Corporate Secretary reviews all correspondence addressed to the Chairman, organizes the correspondence, and provides it to the Chairman or to individual directors, as appropriate. Our independent directors have requested that certain items that are unrelated to the Board’s duties, such as spam, junk mail, mass mailings, solicitations, resumes, and job inquiries not be provided to directors.

Board of Directors and Committees

During fiscal 2021, our Board met four times and also acted by written consent seven times. Each of our current directors attended 100% of the aggregate meetings of the Board and meetings of the committees of which the director was a member in our last fiscal year held during the period when the director served on the Board or the committees, as applicable.

The Board has a standing Audit Committee, Compensation Committee, Nominating and Corporate Governance Committee, and Research and Development Committee. All members of the Audit, Compensation, and Nominating and Corporate Governance Committees are non-employee directors whom the Board has determined are independent under applicable independence standards (including the heightened independence standards that apply to Audit Committee and Compensation Committee members).

Seven of the directors serving at the time of the 2021 Annual Meeting of Stockholders (2021 Annual Meeting) attended such annual meeting. Each director who is up for election at an annual meeting of stockholders or who has a term that continues after such annual meeting is encouraged to attend the annual meeting of stockholders.

Board Leadership Structure

We currently separate the positions of Chairman of the Board and Chief Executive Officer, which allows our Chief Executive Officer, Dr. Kakkis, to focus on our day-to-day business, while allowing the Chairman of the Board, Mr. Welch, to lead the Board in its fundamental role of providing advice to and independent oversight of management. Independent oversight of management is an important goal of the Board, which is why our Corporate Governance Guidelines provide that a lead independent director will be appointed by the Board if the Chairman is not independent. Additionally, our Board recognizes the time, effort, and energy that the Chief Executive Officer is required to devote to his position in the current business environment, as well as the commitment required to serve as our Chairman. Our Board also believes that the separation of the Chairman and Chief Executive Officer positions fosters a greater role for the independent directors in the oversight of our Company and active participation of the independent directors in setting agendas and establishing priorities and procedures for the work of our Board. The benefits of the separated Chairman and Chief Executive Officer positions are augmented by the independence of nine of our ten current directors, including our Chairman, and our independent Board committees that provide appropriate oversight in the areas described below. At executive sessions of independent directors, these directors can speak candidly on any matter of interest. The independent directors of the Board regularly meet in executive sessions, and met four times in 2021, and the Chairman presides at these sessions. We believe this structure provides effective oversight of our management and the Company.

Role of the Board in Risk Oversight

The Board has overall responsibility for the oversight of our risk management process, which is designed to support the achievement of organizational objectives, including strategic objectives, to improve long-term organizational performance, and enhance stockholder value. Risk management includes not only understanding company-specific risks and the steps management implements to manage those risks, but also what level of risk is acceptable and appropriate for us. Management is responsible for establishing our business strategy, identifying and assessing the related risks, and implementing appropriate risk management practices. The Board periodically reviews our business strategy and management's assessment of the related risk and discusses with management the appropriate level of risk for us. In 2021, the Board and the committees, as appropriate, reviewed with management the various risks and mitigation strategies related to the COVID-19 pandemic, such as the Company's return to work and vaccination policies and the Company's initiatives related to ESG and sustainability matters. The Board also delegates to Board committees oversight of selected elements of risk as set forth below.

Board Committees

Our Board currently has a standing Audit Committee, Compensation Committee, Nominating and Governance Committee and Research and Development Committee. Each of these committees operates under a written charter which sets forth the functions and responsibilities of the committee, a copy of which is available on our website at www.ultragenyx.com under the "Corporate Governance" subsection of the "Investors & Media" tab.

Audit Committee	Key Responsibilities
<p>Members: Matthew K. Fust (Chairperson) William Aliski Corsee D. Sanders, Ph.D. Michael Narachi</p> <p><i>All members of the Audit Committee satisfy the current independence and financial literacy standards promulgated by Nasdaq and the SEC, and the Board has determined that Mr. Fust qualifies as an "audit committee financial expert," as the SEC has defined that term in Item 407 of Regulation S-K</i></p> <p>Meetings held during 2021: Six</p>	<p>The Audit Committee has been delegated the task of overseeing significant financial risks facing us and steps management has undertaken to mitigate these risks. The Audit Committee reports back to the Board regarding these risks. In 2021, the Audit Committee reviewed with management, in particular, the risks and mitigation strategies related to cybersecurity and the security programs related to our information technology systems. The Audit Committee is also responsible for the following:</p> <ul style="list-style-type: none"> • Appoints, approves the compensation of, reviews the performance of, and assesses the independence of our independent registered public accounting firm • Approves audit and permissible non-audit services, and the terms of such services, to be provided by our independent registered public accounting firm • Reviews the audit plan with the independent registered public accounting firm and members of management responsible for preparing our financial statements • Reviews and discusses with management and the independent registered public accounting firm our annual and quarterly financial statements and related disclosures and critical accounting policies • Reviews the adequacy of our internal control over financial reporting; establishes policies and procedures for the receipt and retention of accounting-related complaints and concerns • Recommends whether our audited financial statements shall be included in our annual reports on Form 10-K • Prepares the audit committee report to be included in our annual proxy statements • Reviews all related-person transactions • Reviews policies related to financial risk assessment and management • Establishes, maintains, and oversees our Global Code of Conduct • Assists the Nominating and Corporate Governance Committee by overseeing our compliance program with respect to legal and regulatory requirements impacting areas of financial risk • Annually reviews and reassesses the adequacy of the Audit Committee charter and performs other duties, as specified in the charter

Compensation Committee	Key Responsibilities
<p>Members: Michael Narachi (Chairperson) William Aliski Deborah Dunsire, M.D. Daniel G. Welch</p> <p><i>All members of the Compensation Committee satisfy the current Nasdaq and SEC independence standards</i></p> <p>Meetings held during 2021: Five</p>	<p>The Compensation Committee has been delegated the task of overseeing risks related to our compensation policies and programs. In 2021, the Compensation Committee reviewed with management in particular the risks and mitigation strategies related to human capital management such as employee retention and recruitment. The Compensation Committee is also responsible for the following:</p> <ul style="list-style-type: none">• Annually reviews and approves corporate goals and objectives relevant to the compensation of our executive officers• Evaluates the performance of our executive officers in light of such goals and objectives, and determines the compensation of our executive officers• Appoints, compensates, and oversees the work of any compensation consultant, legal counsel, or other advisor retained by the Compensation Committee• Conducts the independence assessment outlined in Nasdaq rules with respect to any compensation consultant, legal counsel, or other advisor retained by the Compensation Committee• Oversees, and has the authority to administer, our compensation and benefit plans• Reviews and approves our policies and procedures for the grant of equity-based awards• Reviews and makes recommendations to the Board with respect to director compensation• Reviews and discusses with management the compensation discussion and analysis, if any, to be included in our annual proxy statements or annual reports on Form 10-K• Oversees the maintenance and presentation to the Board of management's plans for succession to senior management positions• Annually reviews and reassesses the adequacy of the Compensation Committee charter and performs other duties, as specified in the charter

Nominating and Corporate Governance Committee	Key Responsibilities
<p>Members: Shehnaaz Suliman, M.D. (Chairperson) Matthew K. Fust Daniel G. Welch</p> <p><i>All members of the Nominating and Corporate Governance Committee satisfy the current Nasdaq and SEC independence standards</i></p> <p>Meetings held during 2021: Four</p>	<p>The Nominating and Corporate Governance Committee has been delegated the task of overseeing all risks facing us, other than those overseen by the Audit Committee and by the Compensation Committee, and reporting back to the Board regarding the same. In 2021, the Nominating and Corporate Governance Committee reviewed with management, in particular, the risks and mitigation strategies related to ESG matters and reviewed the Company's governance structure to assess the continued appropriateness of the classified board and other structural elements for the Company. The Nominating and Corporate Governance Committee is also responsible for the following:</p> <ul style="list-style-type: none">• Develops and recommends to the Board criteria for Board and committee membership• Establishes procedures for identifying and evaluating Board candidates, including nominees recommended by stockholders; identifies individuals qualified to become members of the Board• Recommends to the Board the persons to be nominated for election as directors and to each of the Board's committees• Develops and recommends to the Board a set of corporate governance guidelines• Oversees the maintenance and presentation to the Board of plans for succession to the position of Chief Executive Officer• Assists the Compensation Committee in its oversight of succession planning for other senior management positions• Oversees our compliance program• Annually reviews and reassesses the adequacy of the Nominating and Corporate Governance Committee charter and performs other duties, as specified in the charter

Research and Development Committee	Key Responsibilities
Members: Lars Ekman M.D., Ph.D. (Chairperson) Deborah Dunsire, M.D. Emil Kakkis, M.D., Ph.D. Amrit Ray, M.D. Corsee D. Sanders, Ph.D. Shehnaaz Suliman, M.D.	The Research and Development Committee assists the Board in its oversight of the strategic direction for our pipeline and investment in research and development. In 2021, the Research and Development Committee reviewed with management in particular the risks and mitigation strategies related to the Company's approach to evaluating its clinical and pre-clinical programs. The Research and Development Committee is also responsible for the following: <ul style="list-style-type: none">• Evaluates and advises on our key R&D activities and early pipeline development goals and strategy• Assesses the resources and budget allocated to R&D spend and provides guidance regarding the investment of resources in pipeline growth• Evaluates and provides input with respect to the quality of the science being conducted and overall program execution• Assesses the overall quality of the R&D programs and prospects for progression to monitor our pipeline to maintain product flow• Evaluates our clinical-stage pipeline and its progress, as well as those operational execution initiatives that are important for filing and approval of products in our pipeline• Performs other duties as specified in the Research and Development Committee Charter
Meetings held during 2021: Two	

Compensation Committee Interlocks and Insider Participation

During fiscal 2021, the Compensation Committee consisted of Messrs. Aliski, Narachi and Welch. Ms. Dunsire joined the Compensation Committee on March 30, 2022. None of the members of our Compensation Committee has at any time during the prior three years been one of our officers or employees. None of our executive officers currently serves, or in the past fiscal year has served, as a member of the board of directors or compensation committee of any entity that has one or more executive officers serving on our Board or Compensation Committee.

Environmental, Social and Governance (ESG) Matters*

At Ultragenyx, our purpose is to lead the future of rare disease medicine as we seek to treat individuals afflicted by diseases with limited or no treatment options, and we recognize that their lives and well-being are dependent upon our collective efforts to develop new therapies. For this reason, we are passionate about developing these therapies with the utmost urgency and care. Our strong commitment to ethics, integrity and corporate responsibility is centered around partnering with the rare disease community, improving access to treatments, maintaining a people-first culture, and investing in innovation.

In 2021, we took initial steps to become more deliberate in how we understand the risks and opportunities associated with ESG issues, how we manage them, and how we communicate our impact to our stockholders and other stakeholders. We completed a materiality analysis and considered both internal and external perspectives in evaluating our ESG priorities. The results of our materiality analysis enabled us to develop our strategic ESG framework with five pillars: Patients, People, Communities, Planet and Governance. These pillars informed the structure of our inaugural ESG report, which we published in April 2022, and is available in digital format on our website at www.ultragenyx.com under "Corporate Sustainability". The contents of the ESG report are not deemed to be part of this proxy statement or incorporated by reference herein.

Patients

We are committed to advancing innovative life changing treatments for patients with rare and ultra-rare diseases and achieving majority access to our commercialized products. As of the end of 2021, we have three first FDA-approved rare disease treatments for four diseases and six clinical programs in development.



We believe that pricing should not be a barrier to accessing treatment and we are committed to pricing our medicines responsibly. We set our drug prices with global pricing in mind, and in the U.S. we use our best efforts to help ensure that no patient foregoes treatment for financial reasons. Since 2013 through the end of 2021, over 380 patients in 43 countries have been approved for access to Ultragenyx treatments through various global expanded access and patient assistance programs.

We are committed to helping the rare disease community by sharing our science and expertise to advance future drug development, whether by us or others. For instance, we provide qualified researchers with access to certain data from our disease monitoring programs and clinical trials in the interest of improving patient care and helping advance medical science. We host a recurring RARE Entrepreneur Boot Camp, where we put our knowledge, expertise and connections to work to help patient families, foundations and other companies seeking to develop novel treatments for rare diseases. Over 85 individuals representing more than 65 organizations have attended our RARE Entrepreneur Boot Camp since its inception in 2017.

We provide independent medical educational and health-related grants to advance the medical and scientific understanding of rare and ultra-rare diseases, and to enable healthcare professionals to close clinical, research and other practice gaps. We make these annual grants with the ultimate purpose of improving care and increasing access to treatments. In 2021, we donated over \$2.2 million to over 100 rare disease patient advocacy groups in 18 countries.

People

We are dedicated to fostering a workplace environment that keeps our employees inspired and provides the vision, resources and support needed for our company's success. We believe in maintaining a healthy, inclusive company culture where employees feel respected, valued and a sense of belonging, and we provide opportunities for learning, personal growth and career advancement. We strive to provide employees with a workplace and work environment where they do their best work and where they want to stay long term.

Employee Diversity Data*

Total Number of Global Employees	1,118
Proportion of women	58%
Total Number of U.S. Employees	1,016
Proportion of women	59%
Proportion of U.S. employees who self-report as members of diverse populations**	44%
Proportion of females in U.S. leadership positions (VP and above)	44%
Total Number of Members on Ultragenyx's Executive Management Team	9
Number of women on the Executive Management Team	3
Executive Management Team who self-report as members of diverse populations**	3

* As of December 31, 2021. U.S. employee data consistent with company's submission on the U.S. Federal Employer Information Report Equal Opportunity (EEO-1) Form.

** Based on employees' self-reporting race and ethnicity

We took several steps in 2021 to bolster inclusion and diversity within our company, including:

- Forming an Inclusion and Diversity (I&D) Action Team comprised of I&D champions across the company to lead our program. We also began recruiting for an I&D leader to expand our efforts;
- Hosting our first I&D Summit for our employees to expand their understanding of I&D and to explore how we can deepen our I&D journey through specific initiatives; and
- Continuing to foster dialogue and engagement through our internal employee resource groups, including the launch of two new groups in 2021, UltraMosaic and LatinX.

Communities

We are committed to building stronger and healthier communities by being a thoughtful and responsible neighbor, providing jobs and supporting public health, wellness, educational, and humanitarian initiatives. In 2021, we donated over \$130,000 to 11 community-based or rare-disease focused organizations. We offer employees the opportunity to take two paid volunteer days each year (16 hours), so that they can spend time giving back to our communities and contribute to local initiatives. In response to the continuing impact of the COVID-19 pandemic around the globe, in 2021, we extended the number of volunteer days for employees with medical licenses, certifications and/or training so that they could volunteer their time to local hospitals where COVID-19 first response efforts are needed.

\$130,000

donated to community-based or
rare-disease focused
organizations

Planet

As we look to advance a diverse portfolio of novel treatments in rare and ultra-rare diseases, we are working to reduce the environmental impact of our business by enhancing and promoting sustainable practices across our office and laboratory spaces, whether leased or owned, and designing our future spaces and our new gene therapy manufacturing facility with sustainability in mind. A few of our initiatives are described below.

- Our headquarters, located in Novato, California, is purchasing 100% renewable electricity through Marin Clean Energy's (MCE) Deep Green program. Through the program, we are purchasing Green-e[®] certified renewable electricity from solar and wind sources and eliminating greenhouse gas (GHG) emissions associated with our electricity use. Purchasing renewable electricity supports the City of Novato's Climate Change Action Plan, which outlines strategies for the city to achieve a GHG reduction target of 40% below 2005 levels by 2035.
- As part of constructing our new gene therapy manufacturing facility, we are participating in Mass Save[®], an incentive program sponsored by electric utilities, under the "Whole Buildings Streamlined" path. The program evaluates energy savings by comparing the facility's design features to a baseline based on the state's current energy code. The design of our new site, which will house manufacturing, laboratory and office space, includes numerous energy conservation measures that go beyond the current energy code, such as:
 - LED lighting and lighting occupancy sensors.
 - High efficiency uninterruptable power supply system.
 - High performance condensing boilers and chillers.
 - Dewpoint controlled air dryers.
 - Demand control ventilation.
 - Unitary HVAC system.
 - Low flow domestic hot water fixtures.

When all of the planned measures are implemented, we expect to save more than 550,000 kilowatts annually at our manufacturing facility. These energy savings are equivalent to avoiding the emissions from driving over one million miles by an average passenger vehicle or the annual emissions from energy used to power approximately 50 homes.

Governance

We are committed to maintaining responsible corporate governance practices to promote the long term interest of our stockholders and other stakeholders. A summary of our corporate governance practices is described in this Proxy Statement under "— Corporate Governance."

- * Our ESG goals and other forward-looking statements about our corporate ESG activities are aspirational and may change, and there is no guarantee or promise that they will be met.

Executive Officers

Our current executive officers, their respective ages as of the date of this Proxy Statement, and positions are set forth in the following table. Biographical information regarding each executive officer (other than Dr. Kakkis) is set forth following the table. Biographical information for Dr. Kakkis is set forth above under Proposal No. 1 (Election of Class III Directors).

Name	Age	Position
Emil D. Kakkis, M.D., Ph.D.	61	President and Chief Executive Officer, Director
Camille L. Bedrosian, M.D.	69	Chief Medical Officer and Executive Vice President
Mardi C. Dier	58	Chief Financial Officer and Executive Vice President
Erik Harris	52	Chief Commercial Officer and Executive Vice President
Dennis Huang	57	Chief Technical Operations Officer and Gene Therapy Operations and Executive Vice President
Thomas Kassberg	61	Chief Business Officer and Executive Vice President
Karah Parschauer	44	Chief Legal Officer and Executive Vice President
John R. Pinion II	56	Chief Quality Officer and Executive Vice President of Translational Sciences

Camille L. Bedrosian, M.D. has served as our Chief Medical Officer and Executive Vice President since January 2018. Prior to Ultragenyx, she served as Senior Vice President and Chief Medical Officer at Alexion Pharmaceuticals, Inc., a biopharmaceutical company, from May 2008 to January 2018. From September 2002 to April 2008, she served as Vice President and Chief Medical Officer at Ariad Pharmaceuticals, Inc., an oncology company. From 1997 to 2002, Dr. Bedrosian served in the Clinical Research and Development Department of Wyeth/Genetics Institute, Inc., most recently as Senior Director, Oncology/Hematology. From 1986 to 1997, she was a Fellow, an Associate, and then Assistant Professor of Medicine in the Division of Hematology and Oncology at Duke University Medical Center and the Duke Comprehensive Cancer Center. Dr. Bedrosian currently serves on the board of directors of Rhythm Pharmaceuticals, Inc., a public biopharmaceutical company, and on the board of directors of Crinetics Pharmaceuticals, Inc., a public clinical stage pharmaceutical company. Dr. Bedrosian holds an A.B. in Chemistry from Harvard University/Radcliffe College, a M.S. in Biophysics from M.I.T., and a M.D. from Harvard Medical School.

Mardi C. Dier has served as our Executive Vice President and Chief Financial Officer since October 2020. She previously served as Executive Vice President, Chief Financial Officer and Chief Business Officer of Portola Pharmaceuticals, Inc., a biopharmaceutical company, from August 2006 through the acquisition by Alexion Pharmaceuticals in July 2020. Previously, she served as Vice President of Investor Relations at Chiron Corporation, a biotechnology company, from 2003 until its acquisition by Novartis Pharmaceuticals in 2006. Prior to joining Chiron, she worked as an investment banker at Prudential Securities, where she focused on client development, equity underwriting and mergers and acquisitions for biotechnology and other life sciences companies, and prior to that was in the audit department of KPMG Peat Marwick. Ms. Dier currently serves on the board of directors of ORIC Pharmaceuticals, Inc., a public biopharmaceutical company, the board of directors of Prelude Therapeutics Inc., a public biopharmaceutical company, and the board of directors of Synthekine, Inc., a private biopharmaceutical company. She holds a B.S. in Biology from Stanford University and an M.B.A. from the Anderson School at the University of California, Los Angeles.

Erik Harris has served as our Chief Commercial Officer and Executive Vice President since June 2019. Prior to his appointment as our Chief Commercial Officer, Erik served as our Senior Vice President and Head of North American Commercial Operations from July 2017 to June 2019. Prior to Ultragenyx, Mr. Harris spent six years at Crescendo Bioscience, Inc., a molecular diagnostic company, most recently as Vice President of Commercial. Earlier in his career, Mr. Harris served as Vice President of Marketing at InterMune, Inc., a biotechnology company, and also held positions in the commercial organizations at Elan Pharmaceuticals, Inc., Genentech, Inc., and Bristol-Myers Squibb Company. At the start of his professional career, Mr. Harris served as a Lieutenant Commander in Naval Aviation and Congressional Fellow for the United States Navy. Mr. Harris currently serves on the board of directors of Denali Therapeutics Inc., a public biopharmaceutical company. Mr. Harris holds a B.S. from the United States Naval Academy and an M.B.A. from the Wharton School of Business.

Dennis Huang has served as our Executive Vice President since January 2016, our Chief Technical Operations Officer since May 2015 and as Chief Technical Operations Officer and Gene Therapy Operations since December 2021. From May 2015 to January 2016, he served as our Senior Vice President. Prior to Ultragenyx, Mr. Huang served as Senior Vice President of Manufacturing and Supply Chain at InterMune, Inc., a biotechnology company, from August 2013 to March 2015. Prior to InterMune, Mr. Huang served as Vice President of Biologic Manufacturing and Development at Allergan, Inc., a global pharmaceutical company, from May 2006 to August 2013. Mr. Huang currently serves on the board of directors of CytoDel, Inc., a private biopharmaceutical company. Mr. Huang holds a B.A. in Chemistry from Knox College in Galesburg, Illinois.

Thomas Kassberg has served as our Executive Vice President since January 2016 and our Chief Business Officer since November 2011. From November 2011 to January 2016, he served as our Senior Vice President. Prior to Ultragenyx, Mr. Kassberg worked as Vice President of Business Development at Corium International, Inc., a biotechnology company, from July 2010 to October 2011. Prior to his work at Corium International, Inc., Mr. Kassberg worked as an independent consultant in corporate development and business strategy and consulted with

a number of companies from March 2009 to June 2010, including Corium International, Inc., a biopharmaceutical company, and Rib-X Pharmaceuticals, Inc., a pharmaceutical company focused on the development of novel antibiotics. Before becoming a consultant, Mr. Kassberg worked at Proteolix, Inc., a biotechnology company subsequently acquired by Onyx Pharmaceuticals, from January 2008 to February 2009, where he served as Senior Vice President of Corporate Development. Mr. Kassberg holds a B.A. in Business Administration from Gustavus Adolphus College and an M.B.A. from Northwestern University.

Karah Parschauer has served as our Chief Legal Officer and Executive Vice President since December 2021 and as our General Counsel and Executive Vice President since June 2016. Prior to Ultragenyx, Ms. Parschauer served in various executive capacities, and most recently as Vice President, Associate General Counsel, at Allergan plc, a pharmaceutical company, from June 2005 to June 2016. Prior to Allergan, Ms. Parschauer was an attorney at Latham & Watkins LLP, where she practiced in the areas of mergers and acquisitions, securities offerings and corporate governance. Ms. Parschauer currently serves on the board of directors of Evolus, Inc., a publicly traded performance beauty company, the board of directors of Anebulo Pharmaceuticals, a publicly traded biotechnology company, and the board of directors of Tenaya Therapeutics, a publicly traded biotechnology company. Ms. Parschauer holds a B.A. in Biology from Miami University and a J.D. from Harvard Law School.

John R. Pinion II has served as our Chief Quality Officer and Executive Vice President of Translational Sciences since September 2017. From January 2016 to September 2017, he served as our Executive Vice President of Analytical Sciences and Research, and from July 2015 to September 2017, as our Chief Quality Operations Officer. From July 2015 to January 2016, he served as our Senior Vice President of Analytical Sciences and Research. Prior to Ultragenyx, Mr. Pinion served in various roles with increasing responsibilities at Genentech, a pharmaceutical company, from 2005 to June 2015, including his most recent position as the Senior Vice President and Global Head of Quality and Compliance for Roche/Genentech Pharma Technical Operations from October 2009 to July 2015. Mr. Pinion currently serves on the board of directors of Aroa Biosurgery, a soft tissue regeneration company listed on the Australian Securities Exchange. Mr. Pinion holds a B.S. of Science in Mechanical Engineering from the University of West Virginia.

Certain Relationships and Related-Person Transactions

Related-Person Transactions

Since January 1, 2021, we have not become, and are not currently proposed to be, a participant in any transactions required to be disclosed under SEC rules with any "related persons," which are generally considered to be our directors and executive officers, nominees for director, holders of more than 5% of our outstanding common stock, and members of their immediate families.

Procedures for Related-Person Transactions

We have adopted a written related-person transactions policy that governs the review, approval, and/or ratification of transactions with a related person where the amount involved exceeds \$100,000 and in which any related person has or will have a direct or indirect interest. Under the policy, a "related person" is defined as any person described in Item 404(a) of Regulation S-K and includes any director, nominee for director, or executive officer of the Company; a beneficial owner of more than five percent of any class of our voting securities; and a person who is an immediate family member of any such director, nominee for director, executive officer, or more-than-five percent beneficial owner (the term "immediate family member" included any child, stepchild, parent, stepparent, spouse, sibling, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law, or sister-in-law and any person (other than a tenant or employee) sharing the household of any such director, nominee for director, executive officer, or more-than-five percent beneficial owner).

Pursuant to this policy, prior to entering into a transaction with a related person, our Chief Financial Officer (or Chief Legal Officer, in the case where the Chief Financial Officer has a direct or indirect interest in the transaction) will review the proposed transaction to determine if such transaction qualifies as a related-person transaction. If the Chief Financial Officer (or Chief Legal Officer, if applicable) determines that the proposed transaction is a related-person transaction, then the proposed transaction will be submitted to the Audit Committee for consideration at the next Audit Committee meeting; provided, however, that if the Chief Financial Officer (or Chief Legal Officer, if applicable), in consultation with the Chief Executive Officer, determines that it is not practicable or desirable to wait until the next meeting of the Audit Committee, then the Chief Financial Officer (or Chief Legal Officer, if applicable) shall submit the proposed transaction to the chairperson of the Audit Committee (who possesses delegated authority to act between meetings of the Audit Committee to pre-approve or ratify, as applicable, any related-person transaction in which the aggregate amount involved is expected to be less than \$1 million).

In the event that our Chief Executive Officer or Chief Financial Officer (or Chief Legal Officer, if applicable) becomes aware of a related-person transaction that has not been previously approved or previously ratified under our related-person transaction policy, the transaction, if pending or ongoing, will be promptly submitted to the Audit Committee or the chairperson of the Audit Committee for consideration. If the transaction is already completed, the Audit Committee or the chairperson of the Audit Committee shall evaluate the transaction to determine if rescission of the transaction and/or any disciplinary action is appropriate.

In evaluating these transactions, the Audit Committee or the chairperson of the Audit Committee, as applicable, will consider all of the relevant facts and circumstances available, including (if applicable) but not limited to: the benefits to us; the impact on a director's independence in the event the related person is a director, an immediate family member of a director, or an entity in which a director has a position or relationship; the availability of other sources for comparable products or services; the terms of the transaction; and the terms available to unrelated third parties or to employees generally. The Audit Committee or the Chairperson of the Audit Committee, as applicable, will only approve related-person transactions that are in, or are not inconsistent with, the best interests of the Company and its stockholders, as the Audit Committee or the Chairperson of the Audit Committee determines in good faith.

No member of the Audit Committee shall participate in any review, consideration or approval of any related-person transaction with respect to which such member or any of his or her immediate family members is the related person.

Delinquent Section 16(A) Beneficial Ownership Reports

Under Section 16(a) of the Exchange Act and SEC rules, our directors, executive officers and beneficial owners of more than 10% of any class of equity security are required to file periodic reports of their ownership, and changes in that ownership, with the SEC. To our knowledge, based solely on a review of copies of the reports filed with the SEC and any written representations that no other reports were required, all reports required to be filed by our executive officers, directors and beneficial owners of more than 10% of our common stock were timely filed in fiscal 2021.

Security Ownership of Certain Beneficial Owners and Management

The following table sets forth information relating to the beneficial ownership of our common stock as of April 18, 2022 (unless otherwise indicated), by:

- each person, or group of affiliated persons, known by us to beneficially own more than 5% of our outstanding shares of common stock;
- each of our directors;
- each of our named executive officers; and
- all current directors and executive officers as a group.

The number of shares beneficially owned by each entity, person, director or executive officer is determined in accordance with the rules of the SEC, and the information is not necessarily indicative of beneficial ownership for any other purpose. Under such rules, beneficial ownership includes any shares over which the individual has sole or shared voting power or investment power as well as any shares that the individual has the right to acquire within 60 days through the exercise of any stock options, warrants or other rights. We believe, based on the information furnished to us, that except as otherwise indicated, and subject to applicable community property laws, the persons named in the table below have sole voting and investment power with respect to all shares of common stock held by that person.

The percentage of shares beneficially owned is computed on the basis of 69,829,249 shares of our common stock outstanding as of April 18, 2022. Shares of our common stock that a person has the right to acquire within 60 days are deemed outstanding for purposes of computing the percentage ownership of the person holding such rights, but are not deemed outstanding for purposes of computing the percentage ownership of any other person, except with respect to the percentage ownership of all directors and executive officers as a group. Unless otherwise indicated below, the address for each beneficial owner listed is c/o Ultragenyx Pharmaceutical Inc., 60 Leveroni Court, Novato, California 94949.

Name and Address of Beneficial Owner	Beneficial Ownership	
	Number of Shares	% of Total
Stockholders Owning Greater than 5%:		
T. Rowe Price Associates, Inc. ⁽¹⁾	11,525,089	16.5%
The Vanguard Group ⁽²⁾	5,920,568	8.5%
Capital International Investors ⁽³⁾	5,629,453	8.1%
Federated Hermes, Inc. ⁽⁴⁾	3,986,870	5.7%
Directors and Named Executive Officers:		
William Aliski ⁽⁵⁾	162,260	*
Deborah Dunsire, M.D. ⁽⁶⁾	43,425	*
Lars Ekman, M.D., Ph.D. ⁽⁷⁾	49,050	*
Matthew K. Fust ⁽⁸⁾	50,300	*
Michael Narachi ⁽⁹⁾	59,050	*
Amrit Ray, M.D.	0	*
Corsee D. Sanders, Ph.D. ⁽¹⁰⁾	2,217	*
Shehnaaz Suliman, M.D. ⁽¹¹⁾	34,800	*
Daniel G. Welch ⁽¹²⁾	59,050	*
Emil D. Kakkis, M.D., Ph.D. ⁽¹³⁾	3,213,710	4.6%
Camille Bedrosian, M.D. ⁽¹⁴⁾	110,133	*
Mardi C. Dier ⁽¹⁵⁾	23,788	*
Erik Harris ⁽¹⁶⁾	80,568	*
John R. Pinion II ⁽¹⁷⁾	230,542	*
All executive officers and directors as a group ⁽¹⁸⁾ (16 persons)	4,783,499	6.7%

* Indicates beneficial ownership of less than 1% of the total outstanding common stock.

- (1) Based on information set forth in a Schedule 13G/A filed with the SEC on February 14, 2022 by T. Rowe Price Associates, Inc. The Schedule 13G/A reported that, as of December 31, 2021, T. Rowe Price Associates, Inc. has sole voting power with respect to 3,600,803 of these shares and sole dispositive power with respect to 11,525,089 of these shares. The principal business address for T. Rowe Price Associates, Inc. is listed in such filing as 100 E. Pratt Street, Baltimore, MD 21202.
- (2) Based on information set forth in a Schedule 13G/A filed with the SEC on February 10, 2022 by The Vanguard Group. The Schedule 13G/A reported that, as of December 31, 2021, The Vanguard Group has shared voting power with respect to 37,387 shares, sole dispositive power with respect to 5,825,268 shares, and shared dispositive power with respect to 95,300 shares. The principal business address for The Vanguard Group is listed in such filing as 100 Vanguard Blvd., Malvern, PA 19355.
- (3) Based on information set forth in a Schedule 13G/A filed with the SEC on February 11, 2022 by Capital International Investors. The Schedule 13G/A reported that, as of December 31, 2021, Capital International Investors has sole voting power with respect to 5,579,689 of these shares and sole dispositive power with respect to 5,629,453 of these shares. Capital International Investors, a division of Capital Research and Management Company ("CRMC"), as well as the following CRMC affiliates and subsidiaries, Capital Bank and Trust Company, Capital International, Inc., Capital International Limited, Capital International Sarl Capital International K.K. and Capital Group Private Client Services, Inc. collectively provide investment management services under the name "Capital International Investors." The principal business address for Capital International Investors is listed in such filing as 333 South Hope Street, Los Angeles, CA 90071.
- (4) Based on information set forth in a Schedule 13G/A filed with the SEC on February 14, 2022 by Federated Hermes, Inc. ("Federated") and the Trust and Trustees, as defined below. The Schedule 13G/A reported that, as of December 31, 2021, Federated has sole voting and sole dispositive power with respect to all shares beneficially owned as a result of acting as the parent holding company to companies that act as investment advisor to various investment companies. Federated is the parent holding company of Federated Equity Management Company of Pennsylvania and Federated Global Investment Management Corp. (the "Investment Advisers"), which act as investment advisers to registered investment companies. The Investment Advisers are wholly owned subsidiaries of FII Holdings, Inc., which is wholly owned subsidiary of Federated. All of Federated's outstanding voting stock is held in the Voting Shares Irrevocable Trust (the "Trust") for which Thomas R. Donahue, Rhodora J. Donahue and J. Christopher Donahue act as trustees (collectively, the "Trustees"). The Trustees have collective voting control over Federated. Federated, the Trust, and each of the Trustees expressly disclaim beneficial ownership of these shares pursuant to Rule 13d-4 of the Exchange Act. The principal business address for Federated is listed in such filing as 1001 Liberty Avenue, PA 15222-3779.
- (5) Consists of (a) 74,680 shares of common stock held by the William and Carolyn Aliski Trust, (b) 70,830 shares of common stock held by Mr. Aliski, and (c) 16,750 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022. Mr. Aliski shares voting and dispositive power over the 74,680 shares of common stock held by the William and Carolyn Aliski Trust and Mr. Aliski is the trustee of the trust. Mr. Aliski also has sole voting and dispositive power over the 16,750 shares of common stock issuable pursuant to stock options held by Mr. Aliski.
- (6) Consists of (a) 10,425 shares of common stock and (b) 33,000 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (7) Consists of (a) 12,300 shares of common stock and (b) 36,750 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (8) Consists of (a) 21,050 shares of common stock and (b) 29,250 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (9) Consists of (a) 12,300 shares of common stock and (b) 46,750 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (10) Consists of 2,217 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (11) Consists of (a) 5,550 shares of common stock and (b) 29,250 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (12) Consists of (a) 12,300 shares of common stock and (b) 46,750 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (13) Consists of (a) 2,283,277 shares of common stock held by the Emil Kakkis and Jenny Soriano Living Trust, dated June 18, 2009, (b) 481,649 shares of common stock held by Dr. Kakkis and (c) 448,784 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022. Dr. Kakkis shares voting and dispositive power over the 2,209,741 shares of common stock held by the Emil Kakkis and Jenny Soriano Living Trust, dated June 18, 2009; each of Dr. Kakkis and Dr. Soriano is a trustee of such trust. Dr. Kakkis has sole voting and dispositive power over the 555,185 shares of common stock held by him and the 448,784 shares of common stock issuable pursuant to stock options held by Dr. Kakkis.
- (14) Consists of (a) 24,413 shares of common stock and (b) 85,720 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (15) Consists of (a) 3,683 shares of common stock and (b) 20,105 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (16) Consists of (a) 11,542 shares of common stock and (b) 69,026 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (17) Consists of (a) 32,241 shares of common stock and (b) 198,301 shares of common stock issuable pursuant to stock options exercisable within 60 days of April 18, 2022.
- (18) Consists of (a) 3,298,702 shares of common stock held by our directors and executive officers and (b) 1,484,797 shares of common stock issuable pursuant to stock options held by our directors and executive officers that are exercisable within 60 days of April 18, 2022.

Executive Compensation

Table of Contents

Compensation Discussion and Analysis	33
Fiscal 2022 Compensation	43
Risk Management and Mitigation	45
Compensation Committee Report	45
Summary Compensation Table	46
Grants of Plan-Based Awards	49
Outstanding Equity Awards at December 31, 2021	50
Option Exercises and Stock Vested	51
Pension Benefits	51
Nonqualified Deferred Compensation	51
Potential Payments Upon Termination or Change of Control	53

Compensation Discussion and Analysis

The following compensation discussion and analysis describes the material elements of compensation earned in fiscal 2021 by each of the executive officers identified below in the Summary Compensation Table, who are referred to collectively as our “named executive officers.” Our named executive officers with respect to the fiscal year that ended on December 31, 2021 are:



These persons constitute our principal executive officer, our principal financial officer and our three other most highly paid executive officers serving during fiscal 2021.

Business Highlights

In 2021, we made significant advances with our late-stage pipeline products while exceeding expectations for the performance of our commercial products and finishing the year in a strong financial position. Our key financial and operational accomplishments during the year include:

Significant Revenue Growth



Revenue

We achieved \$351.4 million in total revenue during 2021, a 30% increase compared to total revenue of \$271 million in 2020, largely driven by continued strong growth in Crysvida[®] (burosumab) sales during the year. Despite the limitations and challenges related to the ongoing COVID-19 pandemic, we exceeded our 2021 guidance range of \$180 million to \$190 million, recognizing \$192.6 million in Crysvida[®] revenue in the Ultragenyx territories. Sales of Dojolvi[®] (trihexanoin) continued to be strong in the United States a full year after product approval and launch, with approximately 270 patients on reimbursed commercial therapy in the United States as of the end of 2021.

Performance

- **Advancement of our Clinical Product Candidates.** We made important progress with the clinical development of our early and late-stage product candidates and we expect to continue enrolling our pivotal programs throughout 2022. Significant clinical development achievements during 2021 include:
 - **Gene Therapy Programs:**
 - **DTX401 and DTX301:** Throughout 2021, we shared updated longer-term safety, efficacy and durability data from our ongoing Phase 1/2 study of DTX401, an adeno-associated virus (AAV) type 8 based gene therapy product candidate for the treatment of glycogen storage disease type Ia, and for our ongoing Phase 1/2 study of DTX301, an AAV8 gene therapy product candidate for the treatment of ornithine transcarbamylase deficiency. At the 14th International Congress of Inborn Errors of Metabolism (ICIEM) in November 2021, we presented data indicating that patients in the study for DTX401 demonstrated a durable response up to three years after receiving DTX401 and that patients in the study for DTX301 demonstrated a durable response up to four years after receiving DTX301. Both DTX401 and DTX301 have progressed into pivotal studies based in part on the strength of the Phase 1/2 results.
 - **UX701:** We announced in early 2021 that the FDA had cleared the investigational new drug (IND) application for UX701, our investigational AAV type 9 gene therapy being evaluated for the treatment of Wilson Disease. In the fourth quarter 2021, we initiated screening and enrolling patients into our seamless Phase 1/2/3 *Cyprus2+* study for Wilson Disease.
 - **Other Programs.**
 - **UX143:** In October 2021, at the American Society for Bone and Mineral Research (ASBMR) annual meeting, we, along with our partner, Mereo BioPharma Group plc (Mereo), presented additional secondary endpoint data from the Phase 2b *ASTEROID* study of UX143, a fully human monoclonal antibody that inhibits sclerostin, that is being evaluated to treat osteogenesis imperfecta (OI). The Phase 2b *ASTEROID* dose-finding study was concluded by Mereo in 2019. The additional secondary endpoint data presented in October 2021 demonstrated that treatment with UX143 resulted in dose-dependent increase in P1NP serum levels, a marker of bone formation, and a decrease in CTx serum levels, a marker of bone resorption, confirming the mechanism of action of sclerostin inhibition over the 12-month treatment period. Observed improvements in bone mineral density were continuous over the 12 months of the study, with comparable gains achieved in the first and second six months of treatment in the high dose group despite temporal changes in biomarkers. We expect to initiate a seamless Phase 2/3 study of UX143 in pediatric and adult patients ages 5 to <26 in the first half of 2022. We also expect to initiate a separate Phase 2 study of patients under age five with OI to start in the second half of 2022 and to continue to evaluate adult patients who were previously treated in the *ASTEROID* study.
 - **UX053:** In 2021, the FDA cleared our IND application for UX053, an investigational mRNA therapy being evaluated for the treatment of Glycogen Storage Disease Type III (GSDIII). The FDA and European Commission subsequently granted Orphan Drug Designation for UX053, which highlights the significant unmet need for patients with GSDIII. We began dosing in our Phase 1/2 study of UX053 in December 2021.
 - **GTX-102:** During the second quarter 2021, we and our partner, GeneTx Biotherapeutics LLC (GeneTx) announced that Health Canada had cleared a protocol amendment and the U.K. Medicines and Healthcare Products Regulatory Agency (MHRA) had approved a clinical trial application to begin treatment of patients in Canada and the U.K. in the Phase 1/2 study of GTX-102, an investigation treatment for Angelman syndrome. In September 2021, we and GeneTx also announced that the FDA had removed the clinical hold on the study of GTX-102 in the United States and that GeneTx could begin dosing patients in the United States in the Phase 1/2 study of GTX-102 in pediatric patients with Angelman syndrome. We subsequently began dosing patients under the amended protocol in Canada and the U.K. in the fourth quarter of 2021.
- **Expanded Global Commercial Efforts.** We made significant progress in continuing to expand our global commercial efforts, including obtaining approvals outside of the United States for our commercialized products as described below, and beginning to establish our commercial organization in Japan.
 - **Dojolvi:** Approvals from Health Canada and Brazil's National Health Surveillance Agency (ANVISA) in February 2021 and August 2021, respectively, for Dojolvi[®] as a source of calories and fatty acids for the treatment of adult and pediatric patients with long-chain fatty acid oxidation disorders (LC-FAOD).
 - **Crysvita:** Approval from Colombia's Instituto Nacional de Vigilancia de Medicamentos y Alimentos, or INVIMA, in July 2021 for the treatment of XLH in adult and pediatric patients one year of age and older. Approval from by Health Canada for the treatment of Tumor Induced Osteomalacia (TIO) in adults in September 2021.
 - **Mepsevii[®]** (vestronidase alfa): Reimbursement approval by the Sistema Nacional de Salud (SNS) for the treatment of pediatric and adult patients with Mucopolysaccharidosis VII (MPS VII; Sly syndrome) in July 2021 for patients of all ages in Spain.
- **Completion of Technology Transfer to Daiichi Sankyo.** In 2021, the Ultragenyx team leveraged creative, technology-focused solutions to overcome logistical and technical challenges presented by the COVID-19 pandemic to successfully complete the technology transfer of our PCL and HEK293 platforms to Daiichi Sankyo Co. (Daiichi Sankyo) within the expected time period. The tech transfer enables Daiichi Sankyo to use the technologies for its internal gene therapy programs pursuant to the terms of our license and technology access agreement with them. We received a \$25 million payment from Daiichi Sankyo upon completion of the tech transfer.
- **Gene Therapy Manufacturing Facility.** We continued to make meaningful progress on construction of our gene therapy manufacturing facility in Bedford, Massachusetts in 2021, including completion of the core and shell of the building by the third quarter of 2021, ahead of schedule.

Stockholder Outreach

Stockholder Advisory Vote on Executive Compensation

Each year, our stockholders are provided the opportunity to cast an advisory vote on the compensation of our named executive officers, or the “say-on-pay” vote, and the Compensation Committee considers the outcome of the prior year’s say-on-pay vote when making decisions relating to the compensation of our named executive officers and our executive compensation programs. We received 74.2% support for our say-on-pay proposal at our 2021 Annual Meeting. While this result reflects broad support of our compensation philosophy and pay practices and an improvement to the support we received at the 2020 Annual Meeting, we were nevertheless disappointed by the outcome and continued engaging with our stockholders as we have in prior years, reflecting our commitment to engagement, communication and transparency.

2021 Stockholder Engagement



During our recent engagement season, we reached out to stockholders representing over 75% of our outstanding shares as of September 30, 2021 including almost all of our top 30 largest stockholders. In response to our outreach efforts, we met with stockholders who responded to our engagement request, which holders represented approximately 58% of our outstanding shares as of September 30, 2021. Participants at these meetings included our Chief Legal Officer, our Chief Human Resources Officer and Shehnaaz Suliman, M.D., Chairperson of our Nominating and Corporate Governance Committee. Topics discussed during the meetings included executive compensation, corporate governance and ESG and sustainability matters. Our Board and management team reviewed and considered feedback received throughout our engagement activities and adopted certain changes in response to such feedback as described below.

During the course of our engagement efforts in 2021 and in recent years, we learned that the driver for nearly all the votes cast against our 2021 say-on-pay proposal was disapproval by one institutional investor and several of its affiliates of the evergreen feature in our 2014 Incentive Plan and 2014 Employee Stock Purchase Plan. Our 2014 Incentive Plan and 2014 Employee Stock Purchase Plan, including the evergreen provisions within the plans, were approved by our stockholders in connection with our initial public offering in 2014. In response to prior feedback, we previously publicly disclosed that we will not seek to extend the evergreen provisions, nor adopt new ones, upon expiration of the current evergreen provisions after January 1, 2024. Our Compensation Committee had reexamined the evergreen provisions in our 2014 Incentive Plan and 2014 Employee Stock Purchase Plan and determined that the evergreen provision has been crucial in ensuring that we have enough shares to grant equity awards to enable us to recruit and retain talented employees in our competitive biotech industry. Our Compensation Committee also noted that several of our peers in the biotech industry that have been public for approximately the same period as us and for whom we are competing for this critical talent have similar evergreen provisions in their equity plans. Without the benefit of our sunset evergreen provisions, we would be constrained in our ability to attract and retain a skilled and motivated workforce in our competitive industry. Even with the retention of the evergreen provision in our equity plan, our Compensation Committee and our executive management team are focused on serving as responsible stewards of share utilization, such as maintaining a reasonable burn rate.

Outcomes from 2021 Engagement

The Board adopted certain changes to our corporate governance practices in response to feedback we received from our stockholder engagement activities. These changes include:

Corporate Governance

Feedback Received	Action Taken
Increased transparency regarding the skills and experience of individual directors	We included a board skills matrix in this Proxy Statement to reflect the skills and experiences of our directors on an individual basis
Increased transparency regarding the Company’s initiatives related to ESG and sustainability matters	We published our inaugural ESG report in April 2022, which is available in digital format on our website at www.ultragenyx.com under “Corporate Sustainability”.
Public disclosure of our employee workforce demographic information	We disclosed in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 information related to the percentage of women in our global workforce and in leadership positions as well as the percentage of our U.S. workforce that are racially or ethnically diverse This information was also included in our inaugural ESG report, which we published in April 2022

Compensation Philosophy and Objectives

Our philosophy in setting compensation policies for executive officers has two fundamental objectives: (1) to attract and retain a highly-skilled team of executives and (2) to align our executives' interests with those of our stockholders by rewarding short-term and long-term performance and tying compensation to increases in stockholder value. The Compensation Committee believes that executive compensation should be directly linked to both continuous improvements in corporate performance (pay for performance) and accomplishments that are expected to increase stockholder value. In furtherance of this goal, the Compensation Committee has adhered to the following guidelines as a foundation for decisions that affect the levels of compensation:

- provide a competitive total compensation package that enables us to attract and retain highly qualified executives with the skills and experience required for the achievement of business goals;
- align compensation elements with our annual goals and long-term business strategies and objectives;
- promote the achievement of key strategic and financial performance measures by linking short-term and long-term cash and equity incentives to the achievement of measurable corporate and individual performance goals and objectives; and
- align executives' incentives with the creation of stockholder value.

The Compensation Committee has historically compensated executive officers with three primary compensation components: a base salary, an annual bonus opportunity, and equity-based compensation. The Compensation Committee believes that cash compensation in the form of base salary and an annual bonus opportunity provides our executive officers with short-term rewards for success in achieving annual goals and objectives, and that long-term compensation through the award of stock options, restricted stock units (RSUs) and performance stock units (PSUs) aligns the objectives of management with those of our stockholders with respect to long-term performance and success of the Company.

In setting compensation levels for our executive officers, the Compensation Committee does not formulaically benchmark against any one specific reference point. Instead, it considers a variety of factors, including peer group survey data, tenure, role, responsibilities, performance, and local competitive market practices. Compensation paid to our named executive officers is delivered primarily through at-risk pay, based on both short-term and long-term incentives, including the achievement of corporate and individual goals and objectives.

In addition to our compensation elements, the following compensation program features are designed to align our executive team's interests with stockholder interests and market best practices.

What We Do	What We Don't Do
 Our Compensation Committee is comprised solely of independent directors.	 We do not offer any tax gross-up payments to our executive team for any change-of-control payments.
 Our Compensation Committee engages its own independent, external compensation consultant to assist the committee in its review of executive and director compensation practices.	 As discussed above under “– Corporate Governance”, we prohibit our executive officers from hedging our securities.
 We proactively engage with our stockholders throughout the year.	 We prohibit our employees, including our executive team, from pledging our securities.
 We have a clawback policy, which permits us to recover performance-based cash and equity compensation paid to our current or former executive officers in certain cases; see “– Clawback Policy”.	 We do not offer our executive team any substantially enhanced benefits or perquisites when compared with our overall employee population.
 We require our executive officers and directors to hold shares of our common stock in order to align their long-term interests with those of our stockholders; see “– Minimum Stock Ownership Requirements”.	 We prohibit the repricing of outstanding stock options without stockholder approval.
 We have double-trigger vesting of outstanding equity awards following covered transactions under our employment arrangements with our executive officers. See “Summary Compensation Table—Narrative Disclosure to Summary Compensation Table—Covered Transaction”.	
 We have established a long-term incentive program applicable to all current employees, including our executive officers, to further tie compensation to performance and focus employee efforts on corporate goals and objectives; see “– Equity Compensation—Annual Equity Grants in Fiscal 2021” and “– Fiscal 2022 Compensation – Equity Grants.”	
 We hold an annual say-on-pay vote for stockholders.	

Roles in Determining Compensation

Compensation Committee

The Board has delegated to the Compensation Committee the responsibility to ensure that total compensation paid to our executive officers, including our named executive officers, is consistent with our compensation policy and objectives. The Compensation Committee oversees and approves all compensation arrangements and actions for our executive officers, including our named executive officers. While the Compensation Committee draws on a number of resources, including input from the Board, the Chief Executive Officer, and its independent compensation consultants, to make decisions regarding our executive compensation program, ultimate decision-making authority rests with the Compensation Committee. The Compensation Committee retains discretion over base salaries, annual bonuses, and equity compensation for executive officers. The Compensation Committee relies upon the judgment of its members in making compensation decisions, after reviewing our corporate performance and carefully evaluating an executive's performance during the year against established goals, operational performance, and business responsibilities. In addition, the Compensation Committee utilizes discretion in the assessment process to respond to and adjust to a dynamic business environment.

Compensation Consultant

The Compensation Committee retains the services of an independent, external compensation consultant, Aon's Human Capital Solutions Practice, a division of Aon plc (Aon). The mandate of the consultant is to assist the Compensation Committee in its review of executive and director compensation practices, including the competitiveness of pay levels, executive compensation design, benchmarking with our peers in the industry, and other technical considerations, including tax- and accounting-related matters. The Compensation Committee annually evaluates Aon's performance and determines whether to engage Aon or another compensation consultant and has the final authority to engage and terminate Aon's services. In 2021, the cost of Aon's consulting services related to executive compensation and director compensation provided to the Compensation Committee was approximately \$158,665. In addition, in 2021, management also engaged Aon to provide survey data relating to non-executive employee compensation and services related to equity plan design and other performance analytics and affiliates of Aon to provide insurance brokerage services and risk services. The aggregate cost of such other consulting services provided in 2021 by Aon and other affiliates of Aon (not related to Aon's executive compensation and director compensation consulting services provided to the Compensation Committee) was approximately \$192,685, of which approximately \$158,645 was related to various insurance-related consulting services, \$23,340 related to various compensation surveys and \$10,700 related to equity plan and performance analytics services.

Our Compensation Committee has assessed the independence of Aon consistent with Nasdaq listing standards and has concluded that the engagement of Aon does not raise any conflict of interest.

Chief Executive Officer

The Chief Executive Officer attends Compensation Committee meetings and works with the Compensation Committee Chairman and Aon to develop compensation recommendations for the executive officers (excluding the Chief Executive Officer), based upon individual experience and breadth of knowledge, internal considerations, individual performance during the fiscal year, competitive market considerations, and other factors deemed relevant by the Compensation Committee. The recommendations are then submitted to the Compensation Committee for review and consideration. The Compensation Committee works directly with Aon and the other non-employee directors of the Board to evaluate the performance of the Chief Executive Officer and determine compensation actions for the Chief Executive Officer.

Defining and Comparing Compensation to Market Benchmarks

While we do not establish compensation levels based solely on benchmarking, pay practices at other companies are an important factor that the Compensation Committee considers in assessing the reasonableness of compensation and ensuring that our compensation practices are competitive in the marketplace. Market data is one element considered by the Compensation Committee when making executive compensation decisions, but the Compensation Committee does not set compensation levels based solely on market data. Rather, the Compensation Committee reviews the 25th, 50th and 75th percentiles of relevant market data as one frame of reference in making its executive compensation decisions. Final executive compensation decisions reflect a variety of factors, including each executive's experience, performance rating, the relative importance of the executive's role within the organization, as well as where each executive's pay level falls relative to the market data.

In order to evaluate the level of compensation for our named executive officers for 2021, our Compensation Committee, using information provided by Aon, established a peer group of publicly traded, national, and regional companies in the biopharmaceutical and biotechnology industries based on a balance of the following criteria:

- companies with recently filed NDAs or early commercial organizations;
- companies with comparable market capitalizations (i.e., in the range of \$1.5 billion to \$12 billion);
- companies with revenue of between \$100 million and \$1 billion; and
- companies with headcounts between 250 to 2,000 employees.

Our 2021 peer group is comprised of the following 19 companies in the pharmaceutical and biotechnology industries, reflecting the addition of Acceleron Pharma, Inc., Blueprint Medicines Corporation, Global Blood Therapeutics, Inc. and GW Pharmaceuticals, plc and the removal of Array BioPharma Inc., Clovis Oncology, Inc., Portola Pharmaceuticals Inc., Puma Biotechnology Inc. and Sage Therapeutics from our 2020 peer group.

ACADIA Pharmaceuticals Inc.	Exelixis Inc.	Ionis Pharmaceuticals, Inc.
Acceleron Pharma, Inc.	FibroGen, Inc.	Nektar Therapeutics
Agios Pharmaceuticals, Inc.	Global Blood Therapeutics, Inc.	Neurocrine Biosciences, Inc.
Alnylam Pharmaceuticals Inc.	GW Pharmaceuticals, plc	PTC Therapeutics, Inc.
Amicus Therapeutics	Halozyme Therapeutics, Inc.	Sarepta Therapeutics, Inc.
bluebird bio, Inc.	Intercept Pharmaceuticals, Inc.	Theravance Biopharma, Inc.
Blueprint Medicines Corporation		

We believe that the compensation practices of our 2021 peer group provided us with appropriate benchmarks for evaluating the compensation of our named executive officers for 2021 because of the developmental, market and organizational characteristics we shared with our peer group. At the time that we selected our 2021 peer group we were at approximately the 39th percentile of the peer group in terms of market capitalization, the 83rd percentile in terms of employees headcount and the 32nd percentile in terms of revenue (but 83rd percentile based on projected revenue for 2021).

Annual Performance Reviews

Our Compensation Committee conducts an annual performance review of our named executive officers and approves their compensation. By the end of the first quarter of each year, base salaries and equity awards for the fiscal year are approved and, for purposes of determining potential payments under our corporate bonus plan (the bonus plan), target bonuses, annual corporate goals and individual performance objectives are established and set forth in writing. After the end of each year, our Compensation Committee determines the amounts that will be paid to our executive officers under our bonus plan after carefully (1) reviewing overall corporate performance; (2) evaluating each named executive officer's annual performance against established corporate goals; and (3) in the case of executive officers other than our Chief Executive Officer, reviewing the achievement of individual performance objectives.

At its first regularly scheduled meeting each year, our Compensation Committee, with input from the Board, evaluates our Chief Executive Officer's individual performance, determines whether to adjust his base salary, and determines the amount of equity awards and his bonus, if any, under our bonus plan.

Our Compensation Committee may also review and adjust the compensation of our executive officers throughout the course of the year.

Base Salary

Overview

The Compensation Committee believes it is important to provide adequate fixed compensation to our executive officers working in a highly volatile and competitive industry. The Compensation Committee's choice of actual pay levels versus our competitive market reflects consideration of our stockholders' interests in paying what is necessary to achieve our corporate goals, while setting competitive levels which are essential to retain these key executives. In determining appropriate base salary levels for a given executive officer, the Compensation Committee considers the following factors:

- individual performance of, and overall management of the function by, the executive, as well as our overall corporate performance, during the prior year;
- level of responsibility, including breadth, scope, and complexity of the position;
- level of experience and expertise of the executive;
- internal review of the executive's compensation relative to other executives to ensure internal equity;
- executive officer compensation levels at other similar companies to ensure competitiveness; and
- recruiting and retention market dynamics.

The effective date of annual merit increases to base salary is March 1.

2021 Base Salaries

The Compensation Committee engaged Aon to conduct a competitive review and analysis of our current executive compensation program relative to our 2021 peer group. Aon prepared an Executive Compensation Assessment report in December 2020 that provided a competitive assessment of our executive compensation program as compared to the 2021 peer group data for base salaries, target total cash compensation, and equity compensation.

For 2021, increases in base salaries for our named executive officers, were 5.4% annualized for Dr. Kakkis, 8.4% annualized for Dr. Bedrosian, 7.8% annualized for Mr. Harris and 11.3% annualized for Mr. Pinion. These increases were based on their individual performance against goals and objectives during 2020 (and were similar to merit-based increases for our employees generally), as well as Aon's trends report of standard annual merit salary increases for 2021. As Ms. Dier joined the company in October 2020, she was not eligible for an increase in her base salary at year end 2020. However, the Compensation Committee increased Ms. Dier's base salary in May 2021 by 3.6% annualized to reflect and recognize her exemplary performance.

The following table shows the increases in base salaries for our named executive officers between fiscal 2020 and fiscal 2021:

Name	Title	Fiscal 2020 Base Salary (as of December 31, 2020)	Fiscal 2021 Base Salary (as of December 31, 2021)	Percentage Increase (%)
Emil D. Kakkis, M.D., Ph.D.	President and Chief Executive Officer	\$ 735,000	\$ 775,000	5.4
Mardi C. Dier	Chief Financial Officer and Executive Vice President	550,000	570,000	3.6
Camille L. Bedrosian, M.D.	Chief Medical Officer and Executive Vice President	529,300	574,000	8.4
Erik Harris	Chief Commercial Officer and Executive Vice President	510,000	550,000	7.8
John R. Pinion II	Chief Quality Officer and Executive Vice President, Translational Sciences	465,600	518,000	11.3

Annual Bonus

Overview

Our annual incentive program provides an opportunity for cash bonus awards based upon the attainment of annual performance goals. For all executive officers, except the Chief Executive Officer, the goals relate to both corporate and individual performance. Corporate performance goals include business, financial, and operational measures or objectives. Individual performance goals focus on individual contributions that drive achievement of the corporate goals and provide leadership for the executive officers' respective functions. The Chief Executive Officer's bonus is based solely on corporate performance.

The individual goals for each executive officer, other than the Chief Executive Officer, are adopted at the beginning of each performance year by the Chief Executive Officer and communicated to each executive officer. The Compensation Committee considers the individual performance of each executive officer (other than our Chief Executive Officer) and our overall corporate performance for the preceding fiscal year in deciding whether to award a bonus and, if one is to be awarded, the amount of the bonus.

All executive officers are assigned annual bonus targets, expressed as a percent of base salary, based on each executive officer's accountability, scope of responsibilities, and potential impact on performance, as well as peer group competitive data for similarly situated positions. The annual bonus is weighted 75% for corporate performance and 25% for individual performance, except that the annual bonus for the Chief Executive Officer is weighted 100% for corporate performance. With respect to the corporate component of the bonus, the maximum payout is 150% of target. With respect to the individual component of the bonus, the maximum payout is 120% of target. Actual payouts are based upon achievement with respect to established goals (for corporate performance) and individual performance rating (for individual performance).

Generally, by the end of each fiscal year or shortly thereafter, the Compensation Committee assesses corporate performance, and determines an overall percentage of goal achievement, for such year. This corporate performance score determines the size of the bonus pool applicable to the corporate component of the bonus plan. A score at or below 50% results in the corporate component of the bonus pool not being funded.

If an executive officer receives a performance rating that he or she only partially meets expectations, then the individual component of the bonus is paid out at 50%; if an executive officer receives an unsatisfactory performance rating, then the individual component of the bonus is not paid out to that officer. Subject to the rights contained in any agreement between the Company and the executive officer, an executive officer must be employed by the Company on the bonus payment date to be eligible to receive a bonus payment.

Fiscal 2021 Bonuses

Annual corporate goals for fiscal 2021 were proposed by our executive officers and approved by our Board in early 2020 upon the recommendation of our Compensation Committee. Individual objectives for our executive officers for 2021 were proposed by each executive officer, with review, input and confirmation from our Chief Executive Officer.

For 2021, our Compensation Committee set the annual targets for our executive officers' bonuses as a percent of base salary generally targeting the market 50th percentile of our 2021 peer group. The target bonuses, as a percentage of base salary, for the named executive officers for fiscal 2021 are set forth in the following table and did not change from 2020 (other than for Ms. Dier, who was not eligible to receive a bonus for 2020 performance as she commenced employment after September 30, 2020).

Name	Title	Target Bonus for Fiscal 2021 (% of Base Salary)
Emil D. Kakkis, M.D., Ph.D.	President and Chief Executive Officer	70%
Mardi C. Dier	Chief Financial Officer and Executive Vice President	45%
Camille L. Bedrosian, M.D.	Chief Medical Officer and Executive Vice President	45%
Erik Harris	Chief Commercial Officer and Executive Vice President	45%
John R. Pinion II	Chief Quality Officer and Executive Vice President, Translational Sciences	45%

In February 2022, the Compensation Committee assessed our overall 2021 performance against the achievement of the corporate goals to determine a total percentage of achievement between 0% and 150%. The Compensation Committee considered the following performance goals, as well as the relative weighting of these goals, in assessing overall performance for the 2021 fiscal year:

Goal	Weighting	Achievement Against Goal
1. Commercial Products <ul style="list-style-type: none"> Achieving targets for global revenue in our territories and number of patients on products in target territories 	45%	Partially achieved
2. Development Program <ul style="list-style-type: none"> Initiate pivotal trials for specified product candidates Resume enrollment and dosing in Phase 1/2 study of GTX-102; New IND for specified program Construction milestone on new gene therapy manufacturing facility 	50%	Partially Achieved
3. General Corporate <ul style="list-style-type: none"> Maintaining operating cash usage within 5% of budget Retaining over 85% of key contributors Achieve threshold scores in annual employee engagement survey: overall engagement score of 80%+, inclusion and diversity score of 75%+ and employee well-being score of 70%+ 	5%	Exceeded Goal

In establishing these goals, the Compensation Committee selected performance goals that it considered aggressive, meaning that they are goals that were considered achievable, but only with a high degree of diligence and success in execution. Although the COVID-19 pandemic created significant uncertainty, the Compensation Committee did not make any changes or adjustments to the performance goals during 2021 as a result of such uncertainty.

In assessing performance against these goals, the Compensation Committee reviewed each goal and determined whether or not it was achieved. The Compensation Committee then referred to the relative importance of the goals, based on the previously established weightings of each goal. After completing this assessment, the Compensation Committee determined that some goals were not completely achieved, and other goals were exceeded. The Compensation Committee also considered additional key corporate achievements that were not represented in the 2021 corporate goals, including successful completion of strategic and financing transactions. In light of the Company's achievements during the year and the success of our team in the face of the uncertainties surrounding the COVID-19 pandemic, the Compensation Committee determined an overall percentage of achievement for all goals combined, which resulted in 92% achievement for fiscal year 2021.

In February 2021, in addition to assessing the foregoing corporate goals, the Compensation Committee assessed the individual accomplishments of our named executive officers for purposes of determining the individual component of their annual bonus, other than our Chief Executive Officer whose annual bonus is based solely on the corporate goals described above. Key individual achievements for these named executive officers are summarized below.

Named Executive Officer	Key 2021 Achievements
Camille L. Bedrosian, M.D. Chief Medical Officer and EVP	<ul style="list-style-type: none"> Led and supported teams in removal of FDA clinical hold and resumption of enrollment and dosing in patients for GTX-102 Led program teams related to pivotal trials for product candidates Successfully recruited, hired and onboarded several senior team members in development team Key member of COVID-19 Taskforce Mentorship program sponsor for internal talent development
Mardi Dier Chief Financial Officer and EVP	<ul style="list-style-type: none"> Managed spend of finance department to within 5% of budget Developed and implemented strategic plan and financing strategy Led reorganization of finance department to meet scaling needs of company Continued to develop and enhance IT capabilities, particularly with respect to cybersecurity
Erik Harris Chief Commercial Officer and EVP	<ul style="list-style-type: none"> Achieve continued growth in product sales to support achievement of global revenue targets Achieve operating margin for global commercial team within specified variance Led and supported Company's commercial expansion in Asia Evolved commercial organization to support commercial and pipeline with vacancy rate below specified target
John R. Pinion II Chief Quality Officer and EVP, Translational Sciences	<ul style="list-style-type: none"> Successfully maintained reliable quality supply of both commercial and clinical products Successfully managed all non-clinical studies, biomarker or bioanalytical method development and testing activities Effectively executed non-clinical studies to successfully enable IND filing ahead of plan Provided quality assurance and quality control support to enable achievement of gene therapy manufacturing plant construction milestone Led recruiting efforts to fill key leadership roles on team

Dr. Kakkis evaluated the performance of Dr. Bedrosian, Ms. Dier, Mr. Harris and Mr. Pinion after considering the above achievements and provided a proposed bonus amount for each such officer to the Compensation Committee in light of such officer's achievements during 2021.

Achievement of Goals and Relationship to Compensation Awarded

The overall 92% achievement score for the 2021 corporate goals, combined with Dr. Kakkis' assessment of the individual performance and achievement of Dr. Bedrosian, Ms. Dier, Mr. Harris and Mr. Pinion during fiscal 2021 resulted in the Compensation Committee approving bonus awards for performance in 2021 as set forth in the following table.

Name	Title	Corporate Component Score (Weighting 75%; 100% for CEO)	Individual Component Score (Weighting 25%)	Total Fiscal 2021 Bonus
Emil D. Kakkis, M.D., Ph.D.	President and Chief Executive Officer	92	—	\$ 499,100
Mardi C. Dier	Chief Financial Officer and Executive Vice President	92	110	\$ 247,523
Camille L. Bedrosian, M.D.	Chief Medical Officer and Executive Vice President	92	110	\$ 249,260
Erik Harris	Chief Commercial Officer and Executive Vice President	92	120	\$ 245,025
John R. Pinion II	Chief Quality Officer and Executive Vice President of Translational Sciences	92	110	\$ 224,942

The bonuses awarded under our 2021 annual incentive program were paid in March 2022.

Equity Compensation

Overview

Stock Options, Restricted Stock Units and Performance Stock Units. Executive officers are eligible to receive equity compensation in the form of stock options, RSUs and/or PSUs. The Compensation Committee grants stock options, RSUs and/or PSUs annually to executive officers to recognize their contributions to the achievement of corporate objectives, to align their interests with those of our stockholders by creating value tied to the performance of our stock price, and for retention purposes. In determining the form and value of an annual grant, the Compensation Committee considers the contributions and responsibilities of each executive officer, appropriate incentives for the achievement of our long-term growth, the size and value of grants made to other executives at peer companies holding comparable positions, individual achievement of designated performance goals, and our overall performance relative to corporate objectives. The Compensation Committee also grants stock options

and RSUs to new executive officer hires. In determining the form and value of a new hire grant to executive officers, the Compensation Committee considers the expected contributions and responsibilities of each executive officer, appropriate incentives for the achievement of our long-term growth, the size and value of grants made to other new hire executives at peer companies holding comparable positions, and the competitive market dynamics at the time of hire.

Under the terms of our 2014 Incentive Plan, pursuant to which all equity grants are currently made, the exercise price of any stock options awarded must be equal to at least 100% of the fair market value of our common stock (the closing sales price on The Nasdaq Global Select Market) on the date of grant. We do not have any program, plan or obligation that requires us to grant equity awards on specified dates, although we make annual equity grants in or around March of each year to allow management and the Compensation Committee to review all elements of compensation at the same point in the year. We also do not have any program, plan or practice to time award dates of stock option grants to our executive officers in coordination with the release of material nonpublic information. Equity awards may occasionally be granted following a significant change in job responsibilities or to meet special retention or performance objectives.

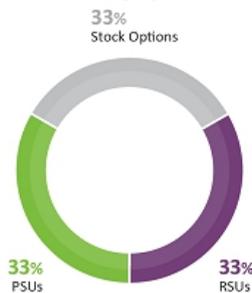
Authority to make equity grants to executive officers rests with the Compensation Committee. Recommendations for equity grant guidelines are made by Aon based on grant values for similarly situated executive positions in our peer group companies and accounting for dilution constraints. Our CEO recommends grants for individual executives within those guidelines. The Compensation Committee then reviews and considers our CEO's recommendation and approves the final grant amounts. The Compensation Committee also determines and approves the final grant amounts to our CEO.

We believe that annual equity awards serve as a useful performance recognition mechanism, encouraging the retention of executive officers by maintaining their focus on our long-term performance, as well as on the achievement of specific performance goals. Our typical option awards to executive officers (including our named executive officers) have a term of 10 years and vest and become exercisable over a period of four years, with 25% of the underlying shares vesting on the first anniversary of the grant date and the remainder monthly over the next three years. Our typical RSU awards to executive officers (including our named executive officers) vest and become exercisable over a period of four years, with 25% of the underlying shares vesting on each anniversary of the grant date.

In addition to the new hire and annual equity awards described above, the Compensation Committee considers grants of other equity awards, as needed, to align business strategy with our compensation practices.

Annual Equity Grants in Fiscal 2021

2021 Annual Equity Awards Mix



We typically make our annual equity grants in or around March of each year to allow management and the Compensation Committee to review all elements of compensation at one point in the year. For 2021, the equity grants to our executive officers reflected a 33%/33%/33% value split among option, RSUs and PSUs. The PSU awards granted to our executive officers in March 2021 (2021 PSUs) consist of a revenue portion with a two-year performance period and a relative total stockholder return (TSR) portion with a three-year performance period. 80% of the 2021 PSU awards will vest based upon achievement of revenue-based targets during the period beginning January 1, 2021 and ending December 31, 2022, with all of the earned revenue based PSUs vesting on the later of (i) the date in which the Compensation Committee certifies such achievement and (ii) March 1, 2023. 20% of the 2021 PSU awards will vest based upon our TSR performance relative to the TSR of the companies in the Nasdaq Biotechnology Index during the period beginning January 1, 2021 and ending December 31, 2023, with all of the earned relative TSR-based PSUs vesting on the later of (i) the date in which the Compensation Committee certifies such achievement and (ii) March 1, 2024.

The table below sets forth all annual equity awards granted in fiscal 2021 to our named executive officers.

Name	Date of Grant	Number of Options	Number of RSUs	Target Number of PSUs
Emil D. Kakkis, M.D., Ph.D.	3/1/2021	36,000	18,000	18,000
Mardi C. Dier	3/1/2021	11,000	5,500	5,500
Camille L. Bedrosian, M.D.	3/1/2021	11,000	5,500	5,500
Erik Harris	3/1/2021	11,000	5,500	5,500
John R. Pinion II	3/1/2021	11,000	5,500	5,500

The values of the equity grants awarded to executive officers for the 2021 fiscal year, as well as all compensation actions taken with respect to the named executive officers in fiscal 2021, are reflected in the Summary Compensation Table.

Fiscal 2022 Compensation

Peer Group

The Compensation Committee reviews our list of peer companies annually to determine if revisions are needed to reflect changes in our development status, market capitalization, changes in individual peer companies, and other factors. The Compensation Committee engaged Aon to assist in reviewing our peer group and in suggesting revisions, as appropriate.

Based on Aon's assessment and recommendations, the Compensation Committee selected 20 publicly traded companies in the pharmaceutical and biotechnology industries to serve as our new list of peer companies for 2022, referred to as our 2022 peer group, by balancing the following criteria:

- companies with emphasis on companies focused on orphan pharmaceutical products;
- companies with comparable market capitalizations (i.e., in the range of \$2.5 billion to \$20 billion);
- companies with revenue of between \$100 million and \$1 billion; and
- companies with headcounts between 300 to 3,000 employees.

Our 2022 peer group is comprised of the following 20 companies in the pharmaceutical and biotechnology industries, reflecting the addition of Biohaven Pharmaceutical Holding Company Ltd., BioMarin Pharmaceutical Inc., Inmed Incorporated, Jazz Pharmaceuticals plc and United Therapeutics Corporation and the removal of bluebird bio, Inc., GW Pharmaceuticals plc, Intercept Pharmaceuticals Inc. and Theravance Biopharma, Inc. from our 2021 peer group.

ACADIA Pharmaceuticals Inc.	Blueprint Medicines Corporation	Jazz Pharmaceuticals plc
Accelaron Pharma, Inc.	Exelixis Inc.	Nektar Therapeutics
Agios Pharmaceuticals, Inc.	FibroGen, Inc.	Neurocrine Biosciences, Inc.
Alnylam Pharmaceuticals Inc.	Global Blood Therapeutics, Inc.	PTC Therapeutics, Inc.
Amicus Therapeutics	Halozyme Therapeutics	Sarepta Therapeutics, Inc.
Biohaven Pharmaceutical Holding Company Ltd.	Inmed Incorporated	United Therapeutics Corporation
BioMarin Pharmaceutical Inc.	Ionis Pharmaceuticals, Inc.	

We believe that the compensation practices of our 2022 peer group provided us with appropriate compensation benchmarks for evaluating the compensation of our named executive officers for 2022.

Base Salaries

For 2022, increases in base salaries for our named executive officers, were 3.2% annualized for Dr. Kakkis, 4.5% annualized for Dr. Bedrosian, 3.5% annualized for Ms. Dier, 3.5% annualized for Mr. Harris and 3.5% annualized for Mr. Pinion. The overall 2022 merit budget was based on an Aon trend report regarding projected market merit spends for 2022. Individual increases in base salaries were also based on achievement of 2021 individual goals.

Annual Bonuses

For 2022, the Compensation Committee increased the target annual bonus from 70% to 75% for our Chief Executive Officer and increased the target annual bonus from 45% to 50% for all other named executive officers. No other significant changes were made to the bonus plan for 2022.

Equity Compensation

For 2022, the equity grants to our executive officers continued to reflect a 33%/33%/33% value split among option, RSUs and PSUs. The PSU awards granted to our executive officers in 2022 (2022 PSUs) consist of a revenue portion with a two-year performance period and a relative TSR portion with a three-year performance period. 80% of the 2022 PSU awards will vest based upon achievement of revenue-based targets during the period beginning January 1, 2022 and ending December 31, 2023, with all of the earned revenue based PSUs vesting on the later of (i) the date in which the Compensation Committee certifies such achievement and (ii) March 1, 2024. 20% of the 2022 PSU awards will vest based upon our TSR performance relative to the TSR of the companies in the Nasdaq Biotechnology Index during the period beginning January 1, 2022 and ending December 31, 2024, with all of the earned relative TSR-based PSUs vesting on the later of (i) the date in which the Compensation Committee certifies such achievement and (ii) March 1, 2025.

Employee Benefit Program

Executive officers are eligible to participate in all of our employee benefit plans, including medical, dental, vision, group life, disability, and accidental death and dismemberment insurance. In each case, participation is on the same basis as other employees, subject to applicable law. We also provide vacation and other paid holidays to all employees, including executive officers, all of which we believe to be comparable to those provided at peer companies. These benefit programs are designed to enable us to attract and retain our workforce in a competitive marketplace. Reliable and competitive health, welfare and vacation benefits ensure that we have a productive and focused workforce.

In addition, our named executive officers are eligible to participate in a retirement savings plan (401(k) Plan), which is a tax-qualified defined contribution plan pursuant that allows participants to contribute certain amounts of their annual compensation, subject to limits prescribed by the Internal Revenue Service. In December 2021, we increased the amount of our matching contributions from 3% to 4% of eligible compensation contributed to the plan such that effective January 2022, we make matching contributions of up to 100% of the first 4% of eligible compensation contributed to the plan. All of our employees are eligible to participate in the 401(k) Plan on the same terms as the named executive officers

Tax and Accounting Considerations

Deductibility of Executive Compensation

In making compensation decisions affecting our executive officers, the Compensation Committee considers our ability to deduct under applicable federal corporate income tax law compensation payments made to executives. Specifically, the Compensation Committee considers the requirements and impact of Section 162(m) of the Internal Revenue Code, which limits the tax deductibility to us of compensation in excess of \$1.0 million in any year for certain executive officers. The Compensation Committee considers the Section 162(m) rules as a factor in determining compensation, but will not necessarily limit compensation to amounts deductible under Section 162(m).

Accounting for Stock-Based Compensation

Under the Accounting Standards Codification, or ASC, Topic 718, we are required to estimate and record an expense at the measurement date for each award of equity compensation over the vesting period of the award. Accounting rules also require us to record cash compensation as an expense at the time the obligation is incurred.

Allocation of Compensation

There is no pre-established policy or target for the allocation of compensation. The factors described above, as well as the overall compensation philosophy, are reviewed to determine the appropriate level and mix of compensation. In fiscal 2021, the largest portion of compensation to each of our named executive officers was in the form of equity compensation.

Timing of Compensation Actions

Cash compensation, including base salary adjustments, for our named executive officers is reviewed annually, usually in the first quarter of the fiscal year and upon promotion or other change in job responsibilities. The effective date of annual merit increases to salary is March 1st. Equity compensation is granted annually each March as well as upon the hiring of the named executive officer or in connection with promotions, however generally a named executive officer must have been employed by September 30 to receive an annual equity grant for the year of hire.

Clawback Policy

Our Board has adopted a Clawback Policy which permits us to recover up to 100% of any incentive based compensation (including performance based cash and equity compensation tied to performance objectives) that we pay to our current or former executive officers during the one-year period preceding the date on which we are required to prepare an accounting restatement if the Board determines that an act or omission of such executive officers contributed to the circumstances requiring the restatement and such act or omission involved fraud or intentional misconduct by the officer.

Minimum Stock Ownership Requirements

The Compensation Committee adopted stock ownership guidelines in order to align the long-term interests of our executive officers and directors with those of our stockholders. The guidelines require holding our common stock with value equivalent to 3x the annual retainer for Board members, 3x the base salary for our Chief Executive Officer and 1x the base salary for the other named executive officers. Shares that

count toward satisfaction of these guidelines include shares owned outright by the individual (including RSUs that have vested), shares retained after an option exercise or issuance under another type of equity award granted under the company's equity incentive plans, shares retained after purchase under the ESPP and shares held in trust for the benefit of the individual. These guidelines were required to be achieved by the end of 2021 for our named executive officers and Board members who have been named executive officers and Board members as of the date the policy was implemented and within five years of appointment for newly appointed named executive officers and Board members. As of December 31, 2021, each of our Board members and named executive officers who were required to be in compliance with the guidelines by the end of 2021 had met the ownership guidelines.

Risk Management and Mitigation

In reviewing the compensation structure in fiscal 2021, the Compensation Committee also considered how our compensation policies may affect our risk profile and how compensation policies may be used to mitigate risks facing us. More specifically, the Compensation Committee considered the general design philosophy of our policies for employees whose conduct would be most affected by incentives established by compensation policies. In considering these issues, the Compensation Committee concluded that the use of performance-based bonuses and long-term equity awards did not appear to create undue risks for us or encourage excessive risk-taking behavior on the part of employees.

With respect to bonus awards, the amount of an individual's award depends principally (exclusively, in the case of our Chief Executive Officer) on our overall performance, which reduces the ability and incentive for an individual to take undue risks in an effort to increase the amount of his or her bonus award for a particular year. For fiscal 2021, our corporate goals were reviewed and approved by the Board in early 2021, upon the recommendation of the Compensation Committee, and are considered to be generally of the nature that would not encourage or reward excessive risk taking. Additionally, the Compensation Committee monitors our performance throughout the year and has the ability to intervene in instances where our actions vis-à-vis our performance goal attainment would be considered unduly risky, so that the Compensation Committee may act to prevent or penalize such actions.

With respect to equity awards, these awards typically vest over several years, meaning that long-term value creation, contrasted with short-term gain, presents the best opportunity for employees to profit from these awards.

Compensation Committee Report

The Compensation Committee has reviewed and discussed with management the Compensation Discussion and Analysis required by Item 402(b) of Regulation S-K. Based on this review and discussion, the Compensation Committee recommended to the Board of Directors that the foregoing Compensation Discussion and Analysis be included in this proxy statement and in our Annual Report on Form 10-K for the fiscal year ended December 31, 2021.

Submitted by the Compensation Committee of the Board of Directors

Michael Narachi, Chairman
William Aliski
Deborah Dunsire, M.D.
Daniel G. Welch

Summary Compensation Table

The following table sets forth the compensation earned during the years ended December 31, 2021, 2020, and 2019 by our Chief Executive Officer, Chief Financial Officer and our next three highest-paid executives. We refer to these officers as our named executive officers.

Name and Principal Position	Year	Salary	Bonus ⁽¹⁾	Stock Awards ⁽²⁾	Option Awards ⁽³⁾	Non-Equity Incentive Plan Compensation ⁽⁴⁾	All Other Compensation ⁽⁵⁾	Total
Emil D. Kakkis, M.D., Ph.D.	2021	\$ 768,846	\$ —	\$ 5,410,512	\$ 2,835,580	\$ 499,100	\$ 8,700	\$ 9,522,738
President and Chief Executive Officer	2020	759,231	—	1,906,720	1,802,869	668,850	6,550	5,144,220
	2019	714,000	—	2,702,000	2,650,784	479,808	6,550	6,553,142
Mardi Dier	2021	561,539	—	1,653,212	866,427	247,523	3,173	3,331,874
Chief Financial Officer and Executive Vice President	2020	116,346	100,000	3,820,000	2,084,296	—	—	6,120,642
Camille L. Bedrosian, M.D.	2021	567,123	—	1,653,212	866,427	249,260	8,700	3,344,722
Chief Medical Officer and Executive Vice President	2020	546,686	—	695,392	674,871	297,731	—	2,214,680
	2019	511,186	—	878,150	863,513	230,076	2,729	2,485,654
Erik Harris	2021	543,846	—	1,653,212	866,427	245,025	8,700	3,317,210
Chief Commercial Officer and Executive Vice President	2020	501,247	—	723,432	707,007	292,613	—	2,224,299
	2019	418,077	—	691,705	962,122	201,488	—	2,273,392
John R. Pinion II,	2021	509,939	—	1,653,212	866,427	224,942	8,700	3,263,220
Chief Quality Officer and Executive Vice President,	2020	480,063	—	723,432	707,007	267,138	—	2,177,641
Translational Sciences	2019	447,690	—	1,756,300	923,578	205,490	—	3,333,238

(1) The amounts reported in this column represent sign-on bonuses.

(2) The amounts reported in this column for a fiscal year represent the grant date fair value of the RSUs and PSUs granted to our named executive officers during the fiscal year, as computed in accordance with ASC Topic 718, not including any estimates of forfeitures, and, with respect to the PSUs, assuming the most probable outcome of the performance conditions as of the grant date. The assumptions used in calculating the grant date fair value of the RSUs and PSUs reported in this column are set forth in the notes to our financial statements included in our Annual Report. The amounts reported in this column reflect the accounting cost for these RSUs and PSUs and do not correspond to the actual economic value that may be received by the named executive officers from the RSUs and the PSUs. The value of the PSUs reported in this column for 2021, assuming achievement of the maximum performance level, is as follows: \$5,128,920 for Dr. Kakkis and \$1,567,170 for Ms. Dier, Dr. Bedrosian, Mr. Harris and Ms. Pinion.

(3) The amounts reported in this column for a fiscal year represent the grant date fair value of the stock options granted to our named executive officers during the fiscal year, as computed in accordance with ASC Topic 718, not including any estimates of forfeitures. The assumptions used in calculating the grant date fair value of the stock options reported in this column are set forth in the notes to our financial statements included in our Annual Report. The amounts reported in this column reflect the accounting cost for these stock options, and do not correspond to the actual economic value that may be received by the named executive officers from the options.

(4) Amounts for a fiscal year represent cash bonuses earned in that fiscal year and paid in the subsequent fiscal year based on achievement of performance goals and other factors deemed relevant by our Compensation Committee under our annual incentive program.

(5) Amounts reported in this column for the 2021 fiscal year reflects 401(k) matching contributions.

Narrative Disclosure to Summary Compensation Table

Employment Arrangements with Our Named Executive Officers

Dr. Kakkis, our Chief Executive Officer, is party to an employment agreement with us that provides for base salary, an annual bonus opportunity and participation in our employee benefit plans, subject to the terms of those plans. Pursuant to the terms of the employment agreement, the employment of Dr. Kakkis is at will; we may terminate his employment at any time, without advance notice, for any reason or for no reason at all, and Dr. Kakkis may terminate his employment at any time, upon four weeks' prior written notice, for any reason or for no reason at all.

Each of our other named executive officers is party to an offer letter with us that provides for base salary, an annual bonus opportunity, and an initial grant of equity. They are eligible to participate in our employee benefit plans, subject to the terms of those plans. Pursuant to the terms of the offer letters, their employment is at will and may be terminated either by us or by them, with or without advance notice, for any reason or for no reason at all.

Each of these employment arrangements and offer letters also contain provisions that provide for certain payments and benefits in the event of an involuntary termination of employment. In addition, the named executive officers may be entitled to accelerated vesting of their outstanding and unvested awards in certain circumstances. The information below describes certain compensation that may become due and payable as a result of certain events.

Involuntary Termination of Employment

Pursuant to their employment arrangements or offer letters, each named executive officer is eligible to receive certain payments and benefits in the event of certain qualifying terminations, including termination of his or her employment by us without "cause" (as defined below) or resignation of his or her employment with "good reason" or because of a "constructive termination" (each, as defined below). Upon the timely execution of a general release of claims, each named executive officer is eligible to receive the following payments and benefits:

- if Dr. Kakkis is terminated by us other than for cause, he shall be entitled to receive 24 months of base salary continuation;
- if Dr. Kakkis resigns his employment with us for good reason following a "change in control" (as defined below), then he shall be entitled to receive 24 months of base salary continuation; provided, however, that Dr. Kakkis must first provide us written notice of the good reason within six months of the event constituting good reason and we must fail to cure the good reason during a 20-day period;
- if Dr. Bedrosian is terminated by us without cause or resigns employment with us due to a constructive termination, she will be entitled to: (i) accelerated vesting of any equity-based compensation awards granted to her in connection with her employment as if she remained employed by us for an additional 12 months following the date of termination; (ii) an extended exercise period applicable to any options then held such that the executive has 12 months from termination to exercise any of the vested options, provided that in no event shall the exercise period be extended beyond the expiration date of any options then held; and (iii) 12 months of base salary continuation and a pro-rated annual bonus at the target in effect as of the date of termination; and
- if Ms. Dier, Mr. Harris or Mr. Pinion is terminated by us without cause or resigns employment with us due to a constructive termination, each executive will be entitled to: (i) an extended exercise period applicable to any options then held such that the executive has 12 months from termination to exercise any of the vested options, provided that in no event shall the exercise period be extended beyond the expiration date of any options then held; (ii) 12 months of base salary continuation and (iii) with respect to Ms. Dier, the annual bonus at the target in effect as of the date of termination.

Covered Transaction

Pursuant to the employment agreement with Dr. Kakkis, as amended and the offer letters with Dr. Bedrosian, Mr. Harris and Mr. Pinion (including any amendments) in addition to the severance benefits described above, in the event (i) we consummate a "Covered Transaction" (as defined in our 2014 Incentive Plan), which includes certain mergers or material asset sales, as well as any dissolution, liquidation, or winding down of the Company, (ii) the executive is employed by us (or our subsidiaries) on the date the Covered Transaction is consummated, and (iii) the executive is terminated by us without cause or resigns employment with us due to a constructive termination (or, in the case of Dr. Kakkis, for good reason) within 24 months in the case of Dr. Bedrosian, within 18 months in the case of Ms. Dier and Mr. Harris and 12 months in the case of Mr. Pinion after the consummation of the Covered Transaction, the vesting of all of such executive's outstanding equity awards shall accelerate with respect to 100% of the then-unvested awards.

Definitions

For purposes of Dr. Kakkis' employment agreement, "cause" means his:

- commission of a felony or any crime involving dishonesty, breach of trust, or physical harm to any person;
- willful engagement in conduct that is in bad faith and materially injurious to us, including but not limited to misappropriation of trade secrets, fraud, or embezzlement;
- material breach of his employment agreement that is not cured within 10 days after written notice to him from us; or
- willful refusal to implement or follow a lawful policy or directive of ours, which breach is not cured within 10 days after written notice to him from us.

For purposes of each of the offer letters with Ms. Dier, Mr. Harris and Mr. Pinion, "cause" means the named executive officer's:

- gross negligence in carrying out, or material failure to carry out, his or her duties for us (including, without limitation, failure to cooperate in any Company investigation), after notice from the Board and a reasonable opportunity to cure (if deemed curable);
- breach of his or her fiduciary duties to us, after notice from the Board and a reasonable opportunity to cure (if deemed curable);
- conviction of, or plea of guilty or no contest to, any felony;
- act of fraud or embezzlement with respect to his or her obligations to us or otherwise relating to our business;
- material violation of any of our policies;
- material breach of any agreement entered into with us; or
- unauthorized use or disclosure of confidential information or trade secrets of ours or of our affiliates.

For purposes of the offer letter with Dr. Bedrosian, "cause" means her:

- commission of a felony or any crime involving dishonesty, breach of trust, or physical harm to any person;
- willful engagement in conduct that is in bad faith and materially injurious to us, including but not limited to misappropriation of trade secrets, fraud, or embezzlement;
- material breach of any agreement with us that is not cured within 10 days of written notice by us to her; or
- willful refusal to implement or follow a lawful policy or directive of ours, which breach is not cured within 10 days after written notice by us to her.

For purposes of Dr. Kakkis' employment agreement, "good reason" means any of the following events if (i) we effect the event without the consent of Dr. Kakkis and (ii) such event occurs after a change in control:

- a change in his position with us that materially reduces his level of responsibility;
- a material reduction in his base salary, except for reductions that are comparable to reductions generally applicable to similarly situated executives of ours; or
- a relocation of his principal place of employment by more than 50 miles.

For purposes of Dr. Kakkis' employment agreement, "change in control" means a change in ownership or control of us effected through a merger, consolidation, or acquisition by any person or related group of persons (other than an acquisition by us or by an employee benefit plan sponsored by us or by a person or persons that directly or indirectly control, is controlled by, or is under common control with, us) of beneficial ownership of securities possessing more than 50% of the total combined voting power of our outstanding securities.

For purposes of each of the offer letters with Ms. Dier, Mr. Harris and Mr. Pinion, "constructive termination" means the occurrence of any of the following events without the named executive officer's consent, subject to standard notice and cure requirements:

- a material reduction or change in the executive's job duties, responsibilities and requirements from the executive's job duties, responsibilities and requirements immediately prior to such reduction or change, taking into account the differences in job title and duties that are normally occasioned by reason of an acquisition of one company by another;
- a material reduction of the executive's base salary (other than an equal, across-the-board reduction in the compensation of all similarly-situated employees of ours or the surviving entity that is approved by the Board); or
- a requirement that the executive relocate to a principal office that increases his or her one-way commute by more than 50 miles relative to the executive's immediately preceding principal office.

For purposes of the offer letter with Dr. Bedrosian, "constructive termination" means the occurrence of any of the following events without her consent, subject to standard notice and cure requirements:

- a material reduction or change in her job duties, responsibilities, authority or requirements from her job duties, responsibilities, authority or requirements immediately prior to such reduction or change;
- a material reduction of her base salary (other than an equal, across-the-board reduction in the compensation of all similarly-situated employees of ours or the surviving entity that is approved by the Board);
- a requirement that she relocate to a principal office that increases her one-way commute by more than 50 miles relative to her immediately preceding principal office; or
- a material breach of her offer letter agreement or any other agreement between her and us.

Grants of Plan-Based Awards

The following table sets forth certain information regarding grants of plan-based awards to the named executive officers during fiscal 2021.

Name	Grant Date	Estimated Future Payouts Under Non-Equity Incentive Plan Awards ⁽¹⁾			Estimated Future Payouts Under Equity Incentive Plan Awards ⁽²⁾			Stock Awards: Number of Shares of Stock or Units Granted # ⁽³⁾	Option Awards: Number of Securities Underlying Options Granted #	Exercise Price of Option Awards (\$/Share)	Grant Date Fair Value of Stock and Option Awards (\$) ⁽⁴⁾
		Threshold (\$)	Target (\$)	Maximum (\$)	Threshold #	Target #	Maximum #				
Emil D. Kakkis, M.D., Ph.D.		271,250	542,500	813,750	—	—	—	—	—	—	—
	3/1/2021	—	—	—	—	—	—	—	36,000	142.47	2,835,580
	3/1/2021	—	—	—	—	—	—	18,000	—	—	2,564,460
Mardi C. Dier		128,250	256,500	365,513	—	—	—	—	—	—	—
	3/1/2021	—	—	—	—	—	—	—	11,000	142.47	866,427
	3/1/2021	—	—	—	2,475	5,500	11,000	5,500	—	—	783,585
Camille L. Bedrosian, M.D.		129,150	258,300	368,078	—	—	—	—	—	—	—
	3/1/2021	—	—	—	—	—	—	—	11,000	142.47	866,427
	3/1/2021	—	—	—	2,475	5,500	11,000	5,500	—	—	783,585
Erik Harris		123,750	247,500	352,688	—	—	—	—	—	—	—
	3/1/2021	—	—	—	—	—	—	—	11,000	142.47	866,427
	3/1/2021	—	—	—	—	—	—	5,500	—	—	783,585
John R. Pinion II		116,550	233,100	332,168	—	—	—	—	—	—	—
	3/1/2021	—	—	—	—	—	—	—	11,000	142.47	866,427
	3/1/2021	—	—	—	—	—	—	5,500	—	—	783,585
	3/1/2021	—	—	—	2,475	5,500	11,000	—	—	—	869,627

(1) The amounts in these columns represent the threshold, target and maximum amount of each named executive officer's cash payments under our 2021 annual incentive program as established by the Board and described in "Compensation Discussion and Analysis" above. Actual payments made for fiscal 2021 are provided in the Summary Compensation Table.

(2) The amounts in these columns represent the threshold, target and maximum level of achievement for the 2021 PSUs granted under our 2014 Incentive Plan. 80% of the PSU awards will vest upon achievement of the revenue based-targets during the period beginning January 1, 2021 and ending December 31, 2022, with all of the earned revenue-based PSUs vesting on the later of (i) the date in which our Compensation Committee certifies such achievement and (ii) March 1, 2023. 20% of the PSU awards will vest upon achievement of relative TSR performance during the period beginning January 1, 2021 and ending December 31, 2023, with all of the earned relative TSR-based PSUs vesting on the later of (A) the date in which our Compensation Committee certifies such achievement and (B) March 1, 2024. With respect to the revenue portion of the PSUs, 50% of such portion of the PSUs would be earned upon achievement of the threshold level, 100% of such portion of the PSUs would be earned upon achievement of the target level and 200% of such portion of the PSUs subject to the award would be earned upon achievement of the maximum level. With respect to the TSR portion of the PSUs, 25% of such portion of the PSUs would be earned upon achievement of the threshold level, 100% of such portion of the PSUs would be earned upon achievement of the target level and 200% of such portion of the PSUs subject to the award would be earned upon achievement of the maximum level.

(3) The amount represents the RSUs granted under our 2014 Incentive Plan.

(4) This column reflects the aggregate grant date fair value of equity awards granted in 2021 as computed in accordance with ASC Topic 718, not including any estimates of forfeitures. The assumptions used in calculating the grant date fair value of the stock and option awards reported in this column are set forth in the notes to our financial statements included in our Annual Report.

Outstanding Equity Awards at December 31, 2021

The following table sets forth information concerning the outstanding equity awards held by each of the named executive officers as of December 31, 2021.

Name	Grant Date	Option Awards				Stock Awards				
		Number of Securities Underlying Unexercised Options (#) Exercisable	Number of Securities Underlying Unexercised Options (#) Unexercisable	Option Exercise Price (\$)	Option Expiration Date ⁽¹⁾	Number of Shares or Units of Stock That Have Not Vested (#) ⁽²⁾	Market Value of Shares or Units of Stock That Have Not Vested (\$)	Equity Incentive Plan Awards: Number of Unearned Shares, Units or Other Rights That Have Not Vested (#) ⁽³⁾	Equity Incentive Plan Awards: Market or Payout Value of Unearned Shares, Units or Other Rights That Have Not Vested (\$)	
Emil D. Kakkis, M.D., Ph.D.	3/1/2021	—	36,000	142.47	3/1/2031	18,000	1,513,620	18,000	1,513,620	
	3/1/2020	24,544	31,556	56.08	3/1/2030	23,104	1,072,148	—	—	
	3/1/2019	45,375	20,625	67.55	3/1/2029	10,000	840,900	—	—	
	3/1/2018	88,594	5,906	48.43	3/1/2028	4,875	409,939	—	—	
	3/1/2017	78,000	—	88.80	3/1/2027	—	—	—	—	
	6/1/2016	63,700	—	70.57	6/1/2026	—	—	—	—	
	5/21/2015	68,300	—	84.89	5/21/2025	—	—	—	—	
	11/1/2013	47,853	—	6.86	11/1/2023	—	—	—	—	
Mardi C. Dier	3/1/2021	—	11,000	142.47	3/1/2031	5,500	462,495	5,500	462,495	
	10/12/2020	11,667	28,333	95.50	10/12/2030	30,000	2,522,700	—	—	
Erik Harris	3/1/2021	—	11,000	142.47	3/1/2031	5,500	462,495	5,500	462,495	
	3/1/2020	9,625	12,375	56.08	3/1/2030	8,956	753,110	—	—	
	6/19/2019	7,500	4,500	63.27	6/19/2029	1,750	147,158	—	—	
	3/1/2019	8,938	4,062	67.55	3/1/2029	2,000	168,180	—	—	
	3/1/2018	3,656	244	48.43	3/1/2028	162	13,623	—	—	
	7/6/2017	30,000	—	63.28	7/6/2027	—	—	—	—	
Camille L. Bedrosian, M.D.	3/1/2021	—	11,000	142.47	3/1/2031	5,500	462,495	5,500	462,495	
	3/1/2020	9,188	11,812	56.08	3/1/2030	8,581	721,576	—	—	
	3/1/2019	14,781	6,719	67.55	3/1/2029	3,500	294,315	—	—	
	1/30/2018	51,167	1,833	55.00	1/30/2028	4,500	378,405	—	—	
John R. Pinion II	3/1/2021	—	11,000	142.47	3/1/2031	5,500	462,495	5,500	462,495	
	3/1/2020	9,625	12,375	56.08	3/1/2030	8,956	753,110	—	—	
	3/1/2019	15,813	7,187	67.55	3/1/2029	10,000	840,900	—	—	
	3/1/2018	25,313	1,687	48.43	3/1/2028	1,250	105,113	—	—	
	3/1/2017	18,000	—	88.80	3/1/2027	—	—	—	—	
	6/3/2016	11,000	—	69.53	6/3/2026	—	—	—	—	
	6/1/2016	17,800	—	70.57	6/1/2026	—	—	—	—	
	7/16/2015	90,000	—	124.87	7/16/2025	—	—	—	—	

- The options vest with respect to 1/4th of the shares underlying the option on the one-year anniversary of the applicable grant date, and with respect to 1/48th of the shares underlying the option, on each monthly anniversary thereafter, subject to the holder's continued service to us through each such vesting date. Please see the section entitled "—Narrative Disclosure to Summary Compensation Table—Covered Transaction" for accelerated vesting provisions that apply on certain terminations of employment.
- Except as described below, the RSUs vest with respect to 1/4th of the underlying shares on each anniversary of the grant date over a four-year period. For (i) Dr. Kakkis, 10,354 of the total earned PSUs listed in the March 1, 2020 row will vest on March 1, 2022 and for (ii) each of Dr. Bedrosian, Mr. Harris and Mr. Pinion, 3,106 of the total earned PSUs listed in the March 1, 2020 row will vest on March 1, 2022. Please see the section entitled "—Narrative Disclosure to Summary Compensation Table—Covered Transaction" for accelerated vesting provisions that apply on certain terminations of employment.
- The PSUs vest as set forth in the table are reported at target achievement. The PSUs vest as described above under "Compensation Discussion and Analysis—Equity Compensation". Please see the section entitled "—Narrative Disclosure to Summary Compensation Table—Covered Transaction" for accelerated vesting provisions that apply on certain terminations of employment.

Option Exercises and Stock Vested

The following table sets forth certain information concerning the option awards exercised and stock awards vested for our named executive officers during fiscal 2021.

Name	Option Awards		Stock Awards	
	Number of Shares Acquired on Exercise (#)	Value Realized on Exercise (\$) ⁽¹⁾	Number of Shares Acquired on Vesting (#)	Value Realized on Vesting (\$) ⁽²⁾
Emil D. Kakkis, M.D., Ph.D.	—	—	38,494	5,332,661
Mardi C. Dier	—	—	10,000	827,900
Camille L. Bedrosian, M.D.	35,000	2,572,500	14,819	2,030,339
Erik Harris	—	—	9,682	1,246,007
John R. Pinion II	—	—	15,614	2,161,266

(1) Value realized does not represent proceeds from any sale of any common stock acquired upon exercise, but is determined by multiplying the number of shares acquired upon exercise by the difference between the exercise price of the option and the closing price of our common stock on The Nasdaq Global Select Market on each exercise date.

(2) Value realized is equal to the closing price of our common stock on The Nasdaq Global Select Market on each vesting date multiplied by the number of stock awards that vested.

Pension Benefits

We do not have a defined benefit plan. Our named executive officers did not participate in, or otherwise receive any special benefits under, any pension or defined benefit retirement plan sponsored by us during fiscal 2021.

Nonqualified Deferred Compensation

In June 2021, we adopted a non-qualified deferred compensation plan (Deferred Compensation Plan). Our Deferred Compensation Plan permits highly-compensated U.S. based employees, including our named executive officers, as well as non-employee members of the Board to defer up to 75% of their base salary and up to 100% of director compensation and other types of compensation, including annual cash bonus, RSUs and PSUs awarded after the participant's election takes into effect.

Generally, a deferral election must be made no later than December 31 of the previous year, and is irrevocable. Deferrals with respect to salary are deducted from the participant's salary in equal installments for the period of January 1 to December 31 of each year. These deferral elections are for the salary earned by the participant for the particular salary pay period during that year, which would otherwise be payable to the participant in such pay period. The election to defer salary under the Deferred Compensation Plan is in addition to any deferral election made by the participant under our 401(k) Plan. Deferrals for performance-based annual bonuses are for those bonuses earned during the year in question, which are payable the following year. The Deferred Compensation Plan is intended to provide participants with a tax deferral opportunity for compensation paid by us. The deferred amounts are not subject to income tax or income tax withholding when earned and deferred, but are fully taxable (and withheld appropriately) when distributed.

The Deferred Compensation Plan authorizes the company to make matching contributions at our sole discretion. The participant is 100% vested at all times in his or her deferred cash account (including any company matching contributions), and deferrals of any compensation subject to vesting (such as RSUs and PSUs) shall vest in accordance with the provisions of the underlying award.

The Deferred Compensation Plan provides for payment of deferred compensation and earnings thereon. A distribution is made upon a participant's separation from service with us, his or her retirement, a date specified by the participant in his or her compensation deferral agreement, the death of a participant (in such a case, to the designated beneficiary) or a "change in control." Payment distributions can be made in a lump sum, annual installments of up to five years at the participant's election or for "specified date accounts only", installments of up to 15 years, at the participant's election.

The Deferred Compensation Plan credits gains and losses to deferred amounts based upon “deemed” investments in mutual funds investing in equity instruments or debt securities chosen by each participant (which the participant may change at any time) from a “menu” of fund options provided by us. The investment returns credited to participants’ accounts in the Deferred Compensation Plan correspond to actual returns of the chosen funds. The performance of the mutual funds fluctuates with the conditions of the capital markets and the economy generally, and is affected by prevailing interest rates and credit risks. The investment options under the Deferred Compensation Plan include:

Fund	2021 Rate of Return (%)
PIMCO VIT Short-Term Admin	(0.06)
Vanguard VIF Total Bond Market Index	(1.72)
Western Asset Core Plus Vit I	(1.97)
DFA VIT Inflation-Protected Secs Instl.	5.58
Great-West Multi-Sector Bond Investor (MXLMX)	0.89
American Funds IS [®] Capital World Bond 2	(4.92)
Vanguard VIF Equity Income	25.33
Fidelity [®] VIP Index 500 Initial	28.58
Invesco VI Equally Wtd S&P 500 I	29.18
T. Rowe Price Blue Chip Growth Port	17.62
American Century Vp Mid Cap Value I (AVIPX)	23.20
Great-West S&P Mid Cap 400 [®] Index Inv (MXMDX)	24.01
MFS [®] VIT Mid Cap Growth Init	14.11
DFA VA US Targeted Value	39.68
Great-West S&P Smallcap 600 [®] Index Inv (MXISX)	25.95
Clearbridge Variable Small Cap Growth I (QLMSIX)	12.61
Vanguard VIF Total Intl Stock Market Index	8.53
Vanguard VIF International	(1.54)
American Funds IS [®] New World 2	4.92
MFS [®] VIT III Global Real Estate Initial	30.12

For fiscal year 2021, other than Ms. Dier, none of our named executive officers participated in the Deferred Compensation Plan. Ms. Dier elected to defer a portion of her cash bonus for fiscal year 2021 performance, which was paid in March 2022.

Name	Executive Contributions in Last FY (\$) ⁽¹⁾	Company Contributions in Last FY (\$)	Aggregate Earnings in Last FY (\$)	Aggregate Withdrawals/ Distributions (\$)	Aggregate Balance at Last FYE (\$)
Emil D. Kakkis, M.D., Ph.D., President and Chief Executive Officer	—	—	—	—	—
Mardi C. Dier, Chief Financial Officer and Executive Vice President	111,385	—	—	—	111,385
Camille L. Bedrosian, M.D., Chief Medical Officer and Executive Vice President	—	—	—	—	—
Erik Harris, Chief Commercial Officer and Executive Vice President	—	—	—	—	—
John R. Pinion II, Chief Quality Officer and Executive Vice President, Translational Sciences	—	—	—	—	—

(1) The amounts disclosed in this column are also disclosed in the “Non-Equity Incentive Plan Compensation” column for the named executive officer in the Summary Compensation Table.

Potential Payments Upon Termination or Change of Control

The amount of compensation and benefits payable to each named executive officer in various termination and change in control situations, as described above under “—Narrative Disclosure to Summary Compensation Table—Involuntary Termination of Employment” and “—Narrative Disclosure to Summary Compensation Table—Covered Transaction, has been estimated in the tables below. The tables below do not include the values of any amounts that a named executive officer may receive under the Deferred Plan as a result of a termination of employment or a change in control, as all amounts under the Deferred Plan are fully vested benefits.

The value of the option, RSU, and PSU vesting acceleration was calculated for each of the tables below based on the assumption that the change in control and executive's employment termination occurred on December 31, 2021. The closing price of our common stock on The Nasdaq Global Select Market as of December 31, 2021, the last trading day of 2021, was \$84.09, which was used as the value of our common stock for purposes of the following tables. The value of the option vesting acceleration was calculated by multiplying the number of unvested option shares subject to vesting acceleration as of December 31, 2021 by the difference between the closing price of our common stock as of December 31, 2021 and the exercise price for such unvested option shares. No value is attributed to unvested options subject to acceleration which have exercise prices above the closing market price of our common stock as of December 31, 2021. The value of the RSU and PSU vesting acceleration was calculated by multiplying the number of unvested RSUs, earned but unvested PSUs and unearned PSUs (based on an assumed target level of performance) subject to vesting acceleration as of December 31, 2021 by the closing price of our common stock as of December 31, 2021.

Dr. Emil Kakkis

The following table describes the potential payments upon employment termination for Emil Kakkis, our President and Chief Executive Officer, as if his employment terminated as of December 31, 2021, the last business day of the fiscal year.

Potential Payments Upon Termination or Change of Control	Termination by Company without Cause	Resignation for Good Reason following a Change in Control	Termination by Company without Cause following a Covered Transaction	Resignation for Good Reason following a Covered Transaction
Base Salary	\$ 1,550,000	\$ 1,550,000	\$ 1,550,000	\$ —
Acceleration of equity awards	—	—	7,656,523	7,656,523
TOTAL	\$ 1,550,000	\$ 1,550,000	\$ 9,206,523	\$ 7,656,523

Mardi C. Dier

The following table describes the potential payments upon employment termination for Mardi Dier, our Chief Financial Officer and Executive Vice President, as if her employment terminated as of December 31, 2021, the last business day of the fiscal year.

Potential Payments Upon Termination or Change of Control	Termination by Company without Cause	Resignation due to a Constructive Termination	Termination by Company without Cause or resignation due to a Constructive Termination following a Covered Transaction
Base Salary	\$ 570,000	\$ 570,000	\$ 570,000
Bonus	256,500	256,500	256,500
Acceleration of equity awards	—	—	3,447,690
TOTAL	\$ 826,500	\$ 826,500	\$ 4,274,190

Dr. Camille L. Bedrosian

The following table describes the potential payments upon employment termination for Camille Bedrosian, our Chief Medical Officer and Executive Vice President, as if her employment terminated as of December 31, 2021, the last business day of the fiscal year.

Potential Payments Upon Termination or Change of Control	Termination by Company without Cause	Resignation due to a Constructive Termination	Termination by Company without Cause or resignation due to a Constructive Termination following a Covered Transaction
Base Salary	\$ 574,000	\$ 574,000	\$ 574,000
Bonus	258,300	258,300	258,300
Acceleration of equity awards	1,345,111	1,345,111	2,814,595
TOTAL	\$ 2,177,411	\$ 2,177,411	\$ 3,646,895

Erik Harris

The following table describes the potential payments upon employment termination for Erik Harris, our Chief Commercial Officer and Executive Vice President as if his employment terminated as of December 31, 2021, the last business day of the fiscal year.

Potential Payments Upon Termination or Change of Control	Termination by Company without Cause	Resignation due to a Constructive Termination	Termination by Company without Cause or resignation due to a Constructive Termination following a Covered Transaction
Base Salary	\$ 550,000	\$ 550,000	\$ 550,000
Acceleration of equity awards	—	—	2,523,260
TOTAL	\$ 550,000	\$ 550,000	\$ 3,073,260

John R. Pinion II

The following table describes the potential payments upon employment termination for John R. Pinion II, our Chief Quality Officer and Executive Vice President, Translational Sciences, as if his employment terminated as of December 31, 2021, the last business day of the fiscal year.

Potential Payments Upon Termination or Change of Control	Termination by Company without Cause	Resignation due to a Constructive Termination	Termination by Company without Cause or resignation due to a Constructive Termination following a Covered Transaction
Base Salary	\$ 518,000	\$ 518,000	\$ 518,000
Acceleration of equity awards	—	—	3,149,768
TOTAL	\$ 518,000	\$ 518,000	\$ 3,667,768

Equity Compensation Plan Information

The table below discloses information as of December 31, 2021 with respect to our equity compensation plans that have been approved by stockholders and equity compensation plans that have not been approved by stockholders.

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights(a)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (Excluding Securities Reflected in Column(a))
Equity compensation plans approved by security holders:			
2011 Equity Incentive Plan, as amended	185,122	\$6.92	—
2014 Incentive Plan	7,704,004	\$78.23	4,040,610
2014 Employee Stock Purchase Plan			3,925,798
Equity compensation plans not approved by security holders			
Dimension Therapeutics, Inc. 2015 Stock Option and Incentive Plan ⁽¹⁾	28,730	\$43.12	—
Dimension Therapeutics, Inc. 2013 Stock Plan ⁽¹⁾	4,329	\$25.63	—
Employment Inducement Plan	42,537	\$91.80	457,463
TOTAL	7,964,722	\$75.96	8,423,871

(1) In connection with our acquisition of Dimension Therapeutics, Inc. on November 7, 2017, we assumed these plans and outstanding option awards thereunder (whether or not then vested or exercisable). The assumed awards continue to have, and are subject to, the same terms and conditions as were applicable prior to the acquisition as set forth in the applicable plan (including any applicable award agreement, other agreement or other document evidencing such awards), except that the awards are exercisable for shares of our common stock with exercise prices adjusted to reflect the terms of the acquisition, all as set forth in the merger agreement. No new awards can be made under these plans.

Director Compensation

Our Board has adopted a non-employee director compensation policy that is designed to provide a total compensation package that enables us to attract and retain, on a long-term basis, high caliber non-employee directors. A Board compensation review prepared by Aon in February 2021 provided a competitive assessment of our compensation practices for non-employee directors in connection with the Compensation Committee's evaluation of the level of compensation for our non-employee directors for 2021. In 2021, to align the cash compensation levels for non-employee directors to the 50th percentile as compared to our 2021 peer group, following the recommendation of the Compensation Committee, the Board increased the annual retainer for the Chairman of the Board by \$5,000 to a total of \$85,000 annually.

A summary of the non-employee director cash compensation arrangements for fiscal 2021 is set forth below:

	Annual Retainer
Board of Directors:	
Chairman	\$ 85,000
Non-Chairman members	\$ 50,000
Audit Committee:	
Chairman	\$ 20,000
Non-Chairman members	\$ 10,000
Compensation Committee:	
Chairman	\$ 20,000
Non-Chairman members	\$ 10,000
Nominating and Corporate Governance Committee:	
Chairman	\$ 10,000
Non-Chairman members	\$ 5,000
Research and Development Committee:	
Chairman	\$ 14,000
Non-Chairman members	\$ 7,000

In 2022, to align the cash compensation levels for non-employee directors to the 50th percentile as compared to our 2021 peer group, following the recommendation of the Compensation Committee, the Board increased the annual retainer for the Chairman of the Audit Committee by \$5,000 to a total of \$25,000 annually and the annual retainer for other members of the Audit Committee by \$2,500 to a total of \$12,500 annually.

Under the non-employee director compensation policy for fiscal 2021, upon recommendation of the Compensation Committee, the Board approved transitioning the non-employee director equity award program from targeting a fixed number of shares to a target dollar value, with such value between the 50th and 75th percentile as compared to the peer group in 2021. For fiscal 2021, each non-employee director who was initially appointed or elected to the Board received an equity award with a target value of \$800,000, comprised 50% of options to purchase shares of our common stock and 50% of RSUs under our 2014 Incentive Plan on the date he or she first becomes a non-employee director. The options vest monthly over a three-year period and the RSUs vest annually in equal amounts over a three year period, in each case subject to the holder's continued service to us through each such vesting date. In addition, for fiscal year 2021, on the date of the annual meeting of stockholders, each continuing non-employee director was eligible to receive an annual equity award at a target value of \$400,000, comprised of 50% options to purchase shares of our common stock and 50% RSUs, each of which would vest in full upon the earlier of (1) our subsequent annual meeting of stockholders and (2) the first anniversary of the date of grant, subject to the holder's continued service to us through such vesting date. The exercise price of all of the foregoing options was equal to the fair market value of a share of our common stock on the date of grant.

In 2022, upon recommendation of the Compensation Committee, the Board maintained the target values of equity awards for newly appointed directors and the annual awards for non-employee directors.

Dr. Kakkis, our President and Chief Executive Officer, receives no compensation for his service as a director.

The following table shows the compensation earned in fiscal 2021 by our non-employee directors.

Name	Fees Earned in Fiscal 2021	Stock Awards ⁽¹⁾	Option Awards ⁽²⁾	Total
Daniel G. Welch	\$ 98,750	199,914	200,227	498,891
William Aliski	70,000	199,914	200,227	470,141
Deborah Dunsire, M.D.	57,000	199,914	200,227	457,141
Lars Ekman, M.D., Ph.D.	64,000	199,914	200,227	464,141
Matthew K. Fust	75,000	199,914	200,227	475,141
Michael Narachi	80,000	199,914	200,227	480,141
Amrit Ray, M.D. ⁽³⁾	—	—	—	—
Corsee D. Sanders, Ph.D. ⁽⁴⁾	28,500	375,050	373,229	776,779
Clay B. Siegall, Ph.D. ⁽⁵⁾	30,000	—	—	30,000
Shehnaaz Suliman, M.D.	67,000	199,914	200,227	467,141

(1) The amounts reported in this column for a fiscal year represent the grant date fair value of the RSUs granted to our non-employee directors during the fiscal year, as computed in accordance with ASC Topic 718, not including any estimates of forfeitures. The assumptions used in calculating the grant date fair value of the RSUs reported in this column are set forth in the notes to our financial statements included in our Annual Report. The amounts reported in this column reflect the accounting cost for these RSUs, and do not correspond to the actual economic value that may be received by the non-employee directors from the RSUs. As of December 31, 2021, our then non-employee directors had the following outstanding RSUs: Mr. Welch – 2,145; Mr. Aliski – 2,145; Dr. Dunsire – 2,145; Dr. Ekman – 2,145; Mr. Fust – 2,145; Mr. Narachi – 2,145; Dr. Sanders – 3,895; and Dr. Suliman – 2,145.

(2) The amounts reported in this column represent the grant date fair value of the stock options granted to our non-employee directors during fiscal 2021, as computed in accordance with ASC Topic 718, not including any estimates of forfeitures. The assumptions used in calculating the grant date fair value of the stock options reported in this column are set forth in the notes to our financial statements included in our Annual Report. The amounts reported in this column reflect the accounting cost for these stock options, and do not correspond to the actual economic value that may be received by the non-employee directors from the options. As of December 31, 2021, our then non-employee directors had the following outstanding options: Mr. Welch – 50,875; Mr. Aliski – 20,875; Dr. Dunsire – 37,125; Dr. Ekman – 40,875; Mr. Fust – 40,875; Mr. Narachi – 50,875; Dr. Sanders – 7,255; and Dr. Suliman – 33,375.

(3) Dr. Ray was appointed to the board on April 19, 2022 and as such, did not earn or receive any compensation for fiscal year 2021.

(4) Dr. Sanders was appointed to the board on June 29, 2021.

(5) Dr. Siegall did not stand for re-election at our 2021 annual meeting of stockholders and his term expired on June 24, 2021.

CEO Pay Ratio

We are required by SEC rules adopted under the Dodd-Frank Act to disclose the ratio of our median employee's annual total compensation to the annual total compensation of our principal executive officer. This disclosure provides a measure of the equitability of pay within our company. We believe our compensation philosophy and process yield an equitable result for all of our employees. For 2021, the annual total compensation for Dr. Emil Kakkis, our Chief Executive Officer and President, was \$9,522,738 and for our median employee was \$294,092, resulting in a pay ratio of 32:1.

In accordance with Item 402(u) of Regulation S-K, we identified the median employee by (i) aggregating for each applicable employee (A) base salary for 2021 on the calculation date, (B) the target bonus for 2021, and (C) the accounting value of any equity awards granted during 2021, and (ii) ranking this annual compensation measure for our employees from lowest to highest. This calculation encompasses individuals, excluding our CEO, employed by us on October 1, 2021, whether employed on a full-time, part-time, or seasonal basis. For any permanent employees who were only employed for part of the 2021 fiscal year, we annualized their compensation to present a more accurate representation of their comparative annual compensation. On October 1, 2021, we had 1,106 employees. The total compensation of our identified median employee using the same methodology we use for our named executive officers as set forth in the Summary Compensation Table.

The SEC's rules for identifying the median employee and calculating the pay ratio based on that employee's annual total compensation allow companies to adopt a variety of methodologies, to apply certain exclusions, and to make reasonable estimates and assumptions that reflect their employee populations and compensation practices. As a result, the pay ratio reported by other companies may not be comparable to the pay ratio reported above, as other companies have different employee populations and compensation practices and may utilize different methodologies, exclusions, estimates and assumptions in calculating their own pay ratios.

Additional information

Questions and Answers About these Proxy Materials and Voting

Why did I receive a one-page notice in the mail regarding the Internet availability of proxy materials instead of a full set of proxy materials?

Pursuant to rules adopted by the SEC, we have elected to provide access to our proxy materials over the Internet. Accordingly, we are sending an Important Notice Regarding the Availability of Proxy Materials (the Notice of Internet Availability) to our stockholders of record. All stockholders will have the ability to access the proxy materials on the website referred to in the Notice of Internet Availability free of charge or request to receive a printed set of the proxy materials for the Annual Meeting. Instructions on how to access the proxy materials over the Internet or to request a printed copy may be found in the Notice of Internet Availability.

We intend to mail the Notice of Internet Availability on or about April 28, 2022 to all stockholders of record entitled to vote at the Annual Meeting. We expect that this Proxy Statement and the other proxy materials will be available to stockholders on or about April 28, 2022.

What if I received more than one Notice of Internet Availability?

If you receive more than one Notice of Internet Availability, your shares may be registered in more than one name or are registered in different accounts. Please follow the voting instructions on each Notice of Internet Availability to ensure that all of your shares are voted.

When and where will the Annual Meeting be held?

The Annual Meeting will be held on June 24, 2022, at 8:00 a.m. Pacific Time virtually via the Internet at www.virtualshareholdermeeting.com/RARE2022. We conduct the Annual Meeting virtually via the Internet to facilitate stockholder attendance and participation and have done so every year since our initial public offering. The virtual format for the Annual Meeting enhances stockholder access by allowing our stockholders to participate fully, and equally, from any location around the world at no cost. Taking advantage of this virtual approach reduces our expenses and eliminates the time we would otherwise spend managing the various aspects of holding a physical meeting. We believe the virtual format is the right choice for us, not only because it brings cost savings to us and our stockholders, but because it increases our ability to engage with all stockholders, regardless of size, resources, or physical location. In addition, a virtual annual meeting, rather than an in-person meeting, is especially appropriate this year, in light of the ongoing COVID-19 pandemic and the need to protect the health and safety of our stockholders, directors, officers, employees, and other stakeholders.

We are aware of concerns that virtual meetings may diminish stockholder voice or reduce accountability and have taken steps to address these concerns. For example, we believe that our virtual meeting format enhances, rather than constrains, stockholder access, participation, and communication because the online format allows stockholders to communicate with us during the Annual Meeting. Stockholders can ask questions of our Board, management, and a representative from our independent registered public accounting firm during the meeting. During the live Q&A session, we will answer questions as they come in, as time permits, and in accordance with the meeting rules of conduct that will be available at the virtual meeting website. We are committed to publishing and answering questions received following the Annual Meeting. Although the live webcast is available only to stockholders as of the Record Date at the time of the Annual Meeting, the webcast of the Annual Meeting will be archived for the public for one year after the date of the Annual Meeting at www.virtualshareholdermeeting.com/RARE2022.

Our annual meetings are only one aspect of our stockholder outreach program, which is a year-long effort by our management to engage with our stockholders in a continuous and meaningful way. Our stockholders can raise questions or concerns regarding the Company at any time by calling our Investor Relations department at (844) 280-7681 or contacting our Board by following the process described under "Corporate Governance—Stockholder Communications."

To participate in the Annual Meeting, you must access the meeting website above, enter your 16-digit control number found on your Notice of Internet Availability, proxy card or voting instruction form, and follow the instructions on the website. If your shares are held in street name and your Notice or voting instruction form indicates that you may vote those shares through www.proxyvote.com, then you may access, participate in and vote at the Annual Meeting with the 16-digit access code indicated on that Notice or voting instruction form. Otherwise, stockholders who hold their shares in street name should contact their bank, broker or other nominee (preferably at least five days before the Annual Meeting) and obtain a "legal proxy" in order to be able to attend, participate in or vote at the Annual Meeting.

What am I voting on?

At the Annual Meeting, you will be asked to consider and vote upon:

1. The election of the three directors named in the Proxy Statement as Class III directors;
2. The ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2022;
3. An advisory (non-binding) resolution to approve the compensation of our named executive officers; and
4. An advisory (non-binding) resolution on the frequency of future advisory votes to approve executive compensation.

What if another matter is properly brought before the Annual Meeting?

The Board of Directors is not aware of any other matter that will be presented for consideration at the Annual Meeting. If any other matters are properly brought before the Annual Meeting, the persons named in the accompanying proxy will vote on those matters in accordance with their best judgment.

What is the Board of Director's voting recommendation?

The Board of Directors recommends that you vote your shares:

- **"FOR"** the election of each of the Class III director nominees;
- **"FOR"** the ratification selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2022;
- **"FOR"** the approval, on an advisory basis, the compensation of our named executive officers; and
- **"ONE YEAR"** for the frequency of future advisory votes to approve executive compensation.

How many votes do I have?

Each share of common stock is entitled to one vote on all matters to be voted upon at the Annual Meeting. Holders of common stock do not have the right to cumulate votes in the election of directors.

When is the record date for the Annual Meeting?

The Board of Directors has fixed the record date for the Annual Meeting as of the close of business on April 26, 2022 (Record Date).

How many shares must be represented in order to hold the Annual Meeting?

A quorum of stockholders is necessary to hold a valid stockholder meeting. A quorum will be present if stockholders holding at least a majority of the outstanding shares entitled to vote are present or represented by proxy at the Annual Meeting. On the Record Date, there were 69,871,583 shares outstanding and entitled to vote. Thus, the holders of at least 34,935,792 shares must be present or represented by proxy at the Annual Meeting to reach quorum.

Your shares will be counted towards the quorum if you submit a valid proxy by mail, over the phone or via the Internet (or one is submitted on your behalf by your broker, bank or other nominee) or if you attend the Annual Meeting. In addition, abstentions and broker non-votes will be counted towards the quorum requirement. If there is no quorum, then the Chairman of the Board or the stockholders entitled to vote at the Annual Meeting, in person or represented by proxy, by a majority of the votes cast, may adjourn the meeting to another date.

How do I vote?

With regard to Proposal No. 1, the election of directors, you may vote "For" all the nominees to the Board or you may "Withhold" your vote for all the nominees or any individual nominee you specify. With regard to Proposal No. 2 and 3, you may vote "For" or "Against" or abstain from voting. With regard to Proposal No. 4, you may vote "One Year," "Two Years," or "Three Years" or abstain from voting.

The procedures for voting depend on whether your shares are registered in your name or are held by a bank, broker or other nominee:

Registered Holders: Shares Registered in Your Name

If you are a stockholder of record, you may vote at the Annual Meeting, which will be held virtually via the Internet, vote by proxy over the telephone, vote by proxy via the Internet, or vote by proxy using a proxy card that you may request or that we may elect to deliver at a later time. Whether or not you plan to attend the Annual Meeting, we urge you to vote by proxy to ensure your vote is counted. You may still attend the Annual Meeting and vote online even if you have already voted by proxy.

- To vote via the Internet, vote at www.proxyvote.com prior to 11:59 p.m. Eastern Time the day before the Annual Meeting.
- If you have received a paper copy of the proxy materials, vote over the telephone by calling 1-800-690-6903 prior to 11:59 p.m. Eastern Time the day before the Annual Meeting or by returning an executed proxy card (that we must receive before the Annual Meeting).
- Registered holders who attend the Annual Meeting may also vote during the Annual Meeting by going to www.virtualshareholdermeeting.com/RARE2022 and following the instructions regarding voting.

Beneficial Holders: Shares Registered in Name of Broker, Bank or Other Nominee

Persons who hold shares of Ultragenyx common stock indirectly on the Record Date through a brokerage firm, bank or other financial institution (beneficial holders) may vote before the Annual Meeting as follows:

- In accordance with the voting instructions provided by the institution that holds their shares, which may provide for voting over the telephone or via the Internet, or
- By returning a voting instruction form provided to them by the institution that holds their shares, in order to have their shares voted on their behalf.
- Beneficial holders who attend the Annual Meeting may also vote during the Annual Meeting by going to www.virtualshareholdermeeting.com/RARE2022 and following the instructions regarding voting.

What if I return a proxy card or otherwise vote but do not make specific choices?

If you are a stockholder of record and return a signed and dated proxy card or otherwise vote without marking voting selections, your shares will be voted, as applicable, "FOR" the election of each nominee for director, "FOR" the ratification of Ernst & Young LLP as the Company's independent registered public accounting firm, "FOR" the advisory approval of the compensation of our named executive officers and "ONE YEAR" for the frequency of future advisory votes to approve executive compensation. If any other matter is properly presented at the Annual Meeting, your proxy holder (one of the individuals named on your proxy card) will vote your shares using his or her best judgment.

Are my shares voted if I do not provide a proxy?

If you are a stockholder of record and do not provide a proxy, you must attend the annual meeting in order to vote. If you hold shares through an account with a bank or broker, your shares may be voted by the bank or broker if you do not provide voting instructions. Banks and brokers have the authority under applicable rules to vote shares on "routine matters" for which their customers do not provide voting instructions. The ratification of Ernst & Young LLP as our independent registered public accounting firm (Proposal No. 2) is the only item on the agenda for the Annual Meeting that is expected to be considered a routine matter. Each of the other proposals are not expected to be considered routine, and banks and brokers cannot vote shares without instruction on those matters. Uninstructed shares that banks and brokers do not vote are counted as "broker non-votes." Even with respect to routine matters, some brokers are choosing not to exercise discretionary voting authority. As a result, we urge you to direct your broker, fiduciary or custodian how to vote your shares to ensure that your vote is counted.

What vote is required to approve each proposal and how are votes counted?

Proposal No. 1 — Election of directors

Directors are elected by a plurality of the votes cast, with the three nominees obtaining the greatest number of affirmative votes being elected as directors. Broker non-votes and shares as to which a stockholder withholds voting authority are not considered votes cast and therefore will have no effect on the vote outcome. As described above under "Proposal No. 1 – Election of Class III Directors" any nominee for director who receives a greater number of "withhold" votes for his or her election than votes "for" his or her election must promptly tender his or her resignation to the Board following certification of the election results.

Proposal No. 2 — Ratification of selection of independent registered public accounting firm

This proposal must be approved by a majority of the votes cast on the proposal (meaning the number of shares voted "for" this proposal must exceed the number of shares voted "against" such proposal). As a result, abstentions and broker non-votes, if any, will have no effect on the vote outcome.

Proposal No. 3 — Advisory (non-binding) vote to approve the compensation of our named executive officers

This advisory proposal must be approved by a majority of the votes cast on the proposal (meaning the number of shares voted “for” this proposal must exceed the number of shares voted “against” such proposal). As a result, abstentions and broker non-votes will have no effect on the vote outcome.

Proposal No. 4 — Advisory (non-binding) vote on the frequency of future votes to approve executive compensation

The frequency period that receives the most votes (every one, two or three years) will be deemed to be the recommendation of the stockholders. Abstentions and broker non-votes will have no effect on the outcome of the vote, except to the extent that the failure to vote for a particular frequency period may result in another frequency period receiving a larger proportion of the votes cast.

Can I change my vote after submitting my proxy?

Yes. If you are the registered holder of your shares, you may change or revoke a delivered proxy by:

- Executing and returning a new, later-dated proxy card by mail, or submitting a new vote via telephone or through the Internet, as instructed above in advance of the applicable deadline;
- Delivering a written revocation to the corporate Secretary before the Annual Meeting; or
- Voting at the Annual Meeting. Simply attending the Annual Meeting will not, by itself, revoke or change your proxy.

If you hold your shares beneficially through a brokerage firm, bank or other financial institution, you should contact your brokerage firm, bank or other financial institution for information on how to change or revoke your proxy.

Who is paying for this proxy solicitation?

We are making these proxy materials available to you in connection with the solicitation of proxies by the Board of Directors of the Company. We will pay all of the costs of soliciting proxies. We will provide copies of our proxy materials to brokerage firms, fiduciaries, and custodians for forwarding to beneficial owners who request printed copies of these materials and will reimburse these persons for their costs of forwarding these materials. Our directors, officers, and employees may also solicit proxies by telephone, facsimile, or personal solicitation; however, we will not pay these individuals additional compensation for any of these services.

When are stockholder proposals and director nominations for inclusion in our proxy statement for next year’s annual meeting due?

Stockholders wishing to present proposals for inclusion in our proxy statement for the 2023 Annual Meeting pursuant to Rule 14a-8 of the Exchange Act must submit their proposals so that they are received by us at our principal executive offices no later than the close of business (5:00 p.m. Pacific Time) on December 29, 2022. However, if our 2023 Annual Meeting is not held between May 25, 2023 and July 24, 2023, then the deadline will be a reasonable time prior to the time that we begin to print and mail our proxy materials.

Proposals for inclusion in our proxy statement for the 2023 Annual Meeting should be sent to the Company’s Corporate Secretary at 60 Leveroni Court, Novato, California 94949 and must satisfy the requirements of Rule 14a-8 of the Exchange Act. We reserve the right to exclude from our proxy statement any proposals not meeting such requirement.

When are other proposals and director nominations for next year’s annual meeting due?

With respect to proposals and nominations other than those to be included in our proxy statement pursuant to Rule 14a-8, our bylaws provide that stockholders who intend to present a stockholder proposal or director nomination at the 2023 annual meeting must deliver written notice of the proposal or nomination to our Corporate Secretary between 90 and 120 days prior to the one-year anniversary date of the 2022 annual meeting (that is, between February 24, 2023 and the close of business (5:00 p.m. Pacific Time) on March 26, 2023). If the 2023 annual meeting date is advanced by more than 30 days before or delayed by more than 60 days after the anniversary date of the 2022 annual meeting, then such notice must be received on or before 10 days after the day on which the date of the 2023 annual meeting is first disclosed in a public announcement. Notice of any such stockholder proposals and director nominations must satisfy the requirements set forth in our bylaws. If a stockholder fails to meet these deadlines and fails to satisfy the requirements of Rule 14a-4 under the Exchange Act, we may exercise discretionary voting authority under proxies we solicit to vote on any such proposal as we determine appropriate. In addition, a stockholder who intends to solicit proxies pursuant to Rule 14a-19 under the Exchange Act in support of nominees submitted under these advance notice provisions for the 2023 annual meeting must notify our Corporate Secretary in writing not later than the close of business (5:00 p.m. Pacific Time) on April 25, 2023. Proposals not meeting the requirements set forth in our bylaws will not be entertained at the Annual Meeting. All notices of proposals or nominations, as applicable, must be addressed to our Corporate Secretary at 60 Leveroni Court, Novato, California 94949.

How can I find out the result of the voting at the Annual Meeting?

Preliminary voting results will be announced at the Annual Meeting. In addition, final voting results will be published in a current report on Form 8-K that we expect to file with the SEC within four business days after the Annual Meeting. If final voting results are not available to us in time to file a Form 8-K with the SEC within four business days after the Annual Meeting, we intend to file a Form 8-K to publish the preliminary results within four business days after the Annual Meeting and file an amended Form 8-K to publish the final results within four business days after the final results are known to us.

Other Business

We know of no other matters to be submitted to a vote of stockholders at the Annual Meeting. If any other matter is properly brought before the Annual Meeting or any adjournment thereof, it is the intention of the persons named in the enclosed proxy to vote the shares they represent in accordance with their judgment. In order for any stockholder to nominate a candidate or to submit a proposal for other business to be acted upon at a given annual meeting, he or she must provide timely written notice to our Corporate Secretary in the form prescribed by our bylaws, as described above.

Forward-Looking Statements

Certain of the statements made in this Proxy Statement are forward looking statements, including among others, statements related to our expectations and projections regarding our future operating results and financial performance, anticipated cost or expense reductions, the timing, progress and plans for our clinical programs and clinical studies, future regulatory interactions, goals and other statements regarding our ESG activities, and the components and timing of regulatory submissions. Such forward-looking statements involve substantial risks and uncertainties that could cause our clinical development programs, collaboration with third parties, future results, performance or achievements to differ significantly from those expressed or implied by the forward-looking statements. Such risks and uncertainties include, among others, the effects from the COVID-19 pandemic on the company's clinical activities, business and operating results, risks related to reliance on third party partners to conduct certain activities on the Company's behalf, uncertainty and potential delays related to clinical drug development, smaller than anticipated market opportunities for the Company's products and product candidates, manufacturing risks, competition from other therapies or products, and other matters that could affect sufficiency of existing cash, cash equivalents and short-term investments to fund operations, the Company's future operating results and financial performance, the timing of clinical trial activities and reporting results from same, and the availability or commercial potential of Ultragenyx's products and drug candidates. The Company expressly disclaims any obligation to update or revise any forward-looking statements. For a further description of the risks and uncertainties that could cause actual results to differ from those expressed in these forward-looking statements, as well as risks relating to the business of Ultragenyx in general, see our Annual Report on Form 10-K for the fiscal year ended December 31, 2021 filed with the U.S. Securities and Exchange Commission (SEC) on February 15, 2022, and our subsequent annual and periodic reports filed with the SEC.

Delivery Of Proxy Materials

Our annual report to stockholders for the fiscal year ended December 31, 2021, including audited financial statements, accompanies this Proxy Statement. Copies of our Annual Report and the exhibits thereto are available from us without charge upon written request of a stockholder to our investor relations department at 60 Leveroni Court, Novato, California 94949. Copies of these materials are also available online through the SEC at www.sec.gov. We may satisfy SEC rules regarding delivery of proxy materials, including the proxy statement and annual report or Notice of Internet Availability, as applicable, by delivering a single proxy statement and annual report or a single Notice of Internet Availability, as applicable, to an address shared by two or more of our stockholders. This delivery method can result in meaningful cost savings for us. In order to take advantage of this opportunity, we may deliver only one proxy statement and annual report or one Notice of Internet Availability, as applicable, to multiple stockholders who share an address, unless contrary instructions are received from one or more stockholders at that address prior to the mailing date. We undertake to deliver promptly upon written or oral request a separate copy of the proxy statement and annual report or Notice of Internet Availability, as applicable, to a stockholder at a shared address to which a single copy of these materials was delivered. If you hold stock as a registered holder and prefer to receive separate

copies of these materials either now or in the future, please contact our investor relations department at 60 Leveroni Court, Novato, California 94949 or by telephone at (415) 475-6876. Similarly, if you share an address with another stockholder and have received multiple copies of our proxy statement and annual report or Notice of Internet Availability, you may write or call us at the address and phone number above to request delivery of a single copy of these materials in the future. If your stock is held through a brokerage firm, bank or other financial institution and you prefer to receive separate copies of our proxy statement and annual report or Notice of Internet Availability, as applicable, either now or in the future, please contact your brokerage firm, bank or other financial institution.

EACH STOCKHOLDER IS URGED TO VOTE VIA THE INTERNET AS INSTRUCTED IN THE NOTICE OF INTERNET AVAILABILITY OR, IF YOU REQUESTED AND RECEIVED A PRINTED COPY OF THE PROXY STATEMENT, BY COMPLETING, DATING, SIGNING AND RETURNING THE ENCLOSED PROXY CARD USING THE ENCLOSED RETURN ENVELOPE, AS PROMPTLY AS POSSIBLE SO THAT YOUR SHARES MAY BE REPRESENTED AT THE ANNUAL MEETING.



60 Leveroni Court
Novato, California 94949
<https://www.ultragenyx.com/>





VOTE BY INTERNET
Before The Meeting - Go to www.proxyvote.com or scan the QR Barcode above

Use the Internet to transmit your voting instructions and for electronic delivery of information up until 11:59 P.M. Eastern Time the day before the meeting date. Have your proxy card in hand when you access the web site and follow the instructions to obtain your records and to create an electronic voting instruction form.

During The Meeting - Go to www.virtualshareholdermeeting.com/RARE2022

You may attend the meeting via the Internet and vote during the meeting. Have the information that is printed in the box marked by the arrow available and follow the instructions.

VOTE BY PHONE - 1-800-690-6903

Use any touch-tone telephone to transmit your voting instructions up until 11:59 P.M. Eastern Time the day before the meeting date. Have your proxy card in hand when you call and then follow the instructions.

VOTE BY MAIL

Mark, sign and date your proxy card and return it in the postage-paid envelope we have provided or return it to Vote Processing, c/o Broadridge, 51 Mercedes Way, Edgewood, NY 11717.

TO VOTE, MARK BLOCKS BELOW IN BLUE OR BLACK INK AS FOLLOWS:

D84354-P70863

KEEP THIS PORTION FOR YOUR RECORDS
DETACH AND RETURN THIS PORTION ONLY

THIS PROXY CARD IS VALID ONLY WHEN SIGNED AND DATED.

ULTRAGENYX PHARMACEUTICAL INC.						
Company Proposals						
The Board of Directors recommends that you vote FOR the election of the three nominees for director named below:						
Nominees:	For	Withhold				
1a. Lars Ekman, M.D., Ph.D.	<input type="checkbox"/>	<input type="checkbox"/>				
1b. Matthew K. Fust	<input type="checkbox"/>	<input type="checkbox"/>				
1c. Amrit Ray, M.D.	<input type="checkbox"/>	<input type="checkbox"/>				
The Board of Directors recommends you vote FOR proposals 2 and 3:			For	Against	Abstain	
2.	Ratification of the selection of Ernst & Young LLP as our independent registered public accounting firm for the fiscal year ending December 31, 2022.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
3.	Advisory (non-binding) vote to approve the compensation of our named executive officers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
The Board of Directors recommends you vote for "ONE YEAR" for proposal 4:			One Year	Two Years	Three Years	Abstain
4.	Advisory (non-binding) vote on the frequency of future advisory votes to approve executive compensation.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Please sign exactly as your name(s) appear(s) hereon. When signing as attorney, executor, administrator, or other fiduciary, please give full title as such. Joint owners should each sign personally. All holders must sign. If a corporation or partnership, please sign in full corporate or partnership name by authorized officer.						
<input type="text"/>		<input type="text"/>		<input type="text"/>		
Signature [PLEASE SIGN WITHIN BOX]		Date		Signature (Joint Owners)		Date

Important Notice Regarding the Availability of Proxy Materials for the Annual Meeting:
The Notice and Proxy Statement and Annual Report on Form 10-K for the year ended December 31, 2021
are available at www.proxyvote.com.

D84355-P70863

ULTRAGENYX PHARMACEUTICAL INC.

Annual Meeting of Stockholders

June 24, 2022 8:00 a.m., Pacific Time

This proxy is solicited by the Board of Directors of Ultragenyx Pharmaceutical Inc.

The stockholder(s) hereby appoint(s) Emil D. Kakkis, M.D., Ph.D. and Karah Parschauer, or either of them, as proxies, each with the power to appoint his or her substitute, and hereby authorize(s) them to represent and to vote, as designated on the reverse side of this ballot, all of the shares of Common Stock of Ultragenyx Pharmaceutical Inc. that the stockholder(s) is/are entitled to vote at the 2022 Annual Meeting of Stockholders to be held at 8:00 a.m., Pacific Time, on June 24, 2022, and at any adjournment or postponement thereof.

This proxy, when properly executed, will be voted in the manner directed herein. If the proxy is properly executed and delivered, but no such direction is made, this proxy will be voted in accordance with the Board of Directors' recommendations and in the discretion of the proxy holders on all other matters that may come before the meeting or any adjournment or postponement thereof (including, if applicable, for the election of a person to the Board of Directors if any nominee named in Proposal No. 1 becomes unavailable for election at the Annual Meeting).

Continued and to be signed on reverse side