Alnylam & Regeneron Alliance

RNAi Therapeutics Focused on CNS & Ocular Diseases

April 8, 2019

Alnylam® PHARMACEUTICALS

Agenda

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- Christine Lindenboom
  Vice President, Investor Relations & Corporate Communications

Alliance Overview

- John Maraganore, Ph.D.
  Chief Executive Officer, Alnylam

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- Akshay Vaishnaw, M.D., Ph.D.
  President, R&D

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- Yvonne Greenstreet, MBChB, MBA
  Chief Operating Officer

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Alnylam Forward Looking Statements

This presentation contains forward-looking statements, within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934. There are a number of important factors that could cause actual results to differ materially from the results anticipated by these forward-looking statements. These important factors include our ability to discover and develop novel drug candidates and delivery approaches and successfully demonstrate the efficacy and safety of our product candidates; pre-clinical and clinical results for our product candidates; actions or advice of regulatory agencies; delays, interruptions or failures in the manufacture and supply of our product candidates; Regeneron's ability to successfully advance and develop programs targeting eye diseases, resulting in the potential payment of milestones and royalties to Alnylam; the parties ability to successfully develop and commercialize CNS programs; our ability to obtain, maintain and protect intellectual property, enforce our intellectual property rights and defend our patent portfolio; our ability to obtain and maintain regulatory approval, pricing and reimbursement for products; our progress in establishing a commercial and ex-United States infrastructure; our ability to successfully launch, market and sell our approved products globally; our ability to successfully expand the indication for ONPATTRO® (patisiran) in the future; competition from others using similar technology and developing products for similar uses; our ability to manage our growth and operating expenses, obtain additional funding to support our business activities and establish and maintain business alliances; the outcome of litigation; and the risk of government investigations; as well as those risks more fully discussed in our most recent annual report on Form 10-K under the caption "Risk Factors." If one or more of these factors materialize, or if any underlying assumptions prove incorrect, our actual results, performance or achievements may vary materially from any future results, performance or achievements expressed or implied by these forward-looking statements. All forward-looking statements speak only as of the date of this presentation and, except as required by law, we undertake no obligation to update such statements.

John Maraganore, Ph.D.
Chief Executive Officer, Alnylam

Alliance Overview

Alnylam-Regeneron Alliance

Landmark Alliance Focused on CNS & Ocular RNAi Therapeutics

- Partnership of two leading biopharmaceutical companies committed to innovation
  - Alnylam R&D expertise and scientific excellence in RNAi therapeutics with emerging global commercial presence
  - Regeneron scientific excellence, world-leading capabilities in human genetics, and industry-leading commercial presence in ophthalmology and other large markets
- Broad, multi-product alliance across CNS, ocular, and select liver targets
  - Both companies fully participate in value creation with 50-50 structure in CNS and select liver programs
  - Milestone/royalty structure for ocular disease programs
- Accelerates Alnylam CNS and ocular programs, driving significant pipeline expansion
  - Robust, highly durable, and widely distributed RNAi knockdown of key targets in CNS/ocular pre-clinical models
  - Adds 1-2 new planned INDs/year toward CNS or ocular targets to previously planned 1-2 new INDs/year in liver beginning in 2020
- Significantly bolsters Alnylam balance sheet to >$2B *pro forma* for increased pipeline investment and future growth

Alnylam Clinical Development Pipeline

Focused in 4 Strategic Therapeutic Areas (STArs):

- Genetic Medicines
- Cardio-Metabolic Diseases
- Hepatic Infectious Diseases
- CNS/Ocular Diseases

		HUMAN POC[1]	BREAKTHROUGH DESIGNATION	EARLY STAGE *(IND or CTA Filed-Phase 2)*	LATE STAGE *(Phase 2-Phase 4)*	REGISTRATION/ COMMERCIAL[3]	COMMERCIAL RIGHTS
onpattro (patisiran)	*hATTR Amyloidosis*[2]	✓	✓			●	Global
Givosiran	*Acute Hepatic Porphyria*	✓	✓			●	Global
Patisiran	*ATTR Amyloidosis Label Expansion*	✓			●		Global
Fitusiran	*Hemophilia and Rare Bleeding Disorders*	✓			●		15-30% royalties
Inclisiran	*Hypercholesterolemia*	✓			●		Milestones & up to 20% royalties
Lumasiran	*Primary Hyperoxaluria Type 1*	✓	✓		●		Global
Vutrisiran	*ATTR Amyloidosis*	✓			●		Global
Cemdisiran	*Complement-Mediated Diseases*	✓		●			50-50
Cemdisiran/Pozelimab Combo[4]	*Complement-Mediated Diseases*			●			Milestone/Royalty
ALN-AAT02	*Alpha-1 Liver Disease*			●			Global
ALN-HBV02 (VIR-2218)	*Hepatitis B Virus Infection*			●			50-50 option rights post-Phase 2
ALN-AGT	*Hypertension*			●			Global

[1] POC, proof of concept – defined as having demonstrated target gene knockdown and/or additional evidence of activity in clinical studies
[2] Approved in the U.S. for the polyneuropathy of hATTR amyloidosis in adults, and in the EU for the treatment of hATTR amyloidosis in adults with stage 1 or stage 2 polyneuropathy
[3] Includes marketing application submissions
[4] Cemdisiran is currently in Phase 2 development and pozelimab is currently in Phase 1 development; Alnylam and Regeneron are evaluating potential combinations of these two investigational therapeutics
As of April 2019

Akshay Vaishnaw, M.D., Ph.D.
President, R&D

R&D Perspective

R&D Perspective

Expansion of Pipeline and Acceleration of CNS and Ocular Opportunities

- Long-standing Regeneron commitment to scientific excellence and innovation
  - Recognize importance of external innovation to complement internal activities
  - New alliance couples Alnylam leadership in RNAi technology with Regeneron world-leading genetics research and target discovery engine
- Collaboration focused on disease targets in eye and CNS
  - In ocular diseases, leverages Regeneron scientific, development, and commercialization expertise in opthalmology
  - In CNS, leverages historical Regeneron strengths and genetics capabilities
  - In pre-clinical studies, RNAi demonstrates potent, widely distributed, and highly durable target gene silencing
- Collaboration also includes select liver target programs
  - Expansion of ongoing Alnylam NASH partnership on HSD17B13
  - Includes additional novel liver targets
  - Includes evaluation of siRNA-Mab combination opportunity with anti-C5 therapies: including combination of pozelimab in Phase 1 and cemdisiran in Phase 2

Yvonne Greenstreet, MBChB, MBA
Chief Operating Officer

Terms of Agreement

Summary of Product Rights

Partnership to Expand Pipeline, with Significant Retention of Product Rights

Initial 5 year research term with 1-2 new INDs/year expected

- Each company has right to lead half of programs
- Non-lead company has 50-50 opt-in right at DC selection
- Lead company retains global responsibility and revenue recognition

- Regeneron to lead development and commercialization efforts
- Alnylam to receive milestones and royalties

- RNAi-Mab combinations for complement mediated diseases
  - Regeneron to lead combination opportunities, including with cemdisiran and pozelimab
  - Alnylam retains lead control of cemdisiran monotherapy
- Companies expand previously announced 50-50 NASH collaboration
- Additional potential novel liver targets from RGC
- Alnylam retains broad global rights to all of its other unpartnered liver-directed clinical and preclinical pipeline programs

Key Economic Terms

Significant Up-Front Cash & Potential for Value Creation

> $1B alliance value, including upfront cash, equity, and potential near-term milestone payments*

$400M

Regeneron purchase of Alnylam equity (priced at $90.00/share)

$400M

Up-front cash license fee to Alnylam

$200M

Potential near-term milestone payments to Alnylam

Expect $30M/year

Annual research funding expected from Regeneron at steady state, tied to target and lead candidate selection

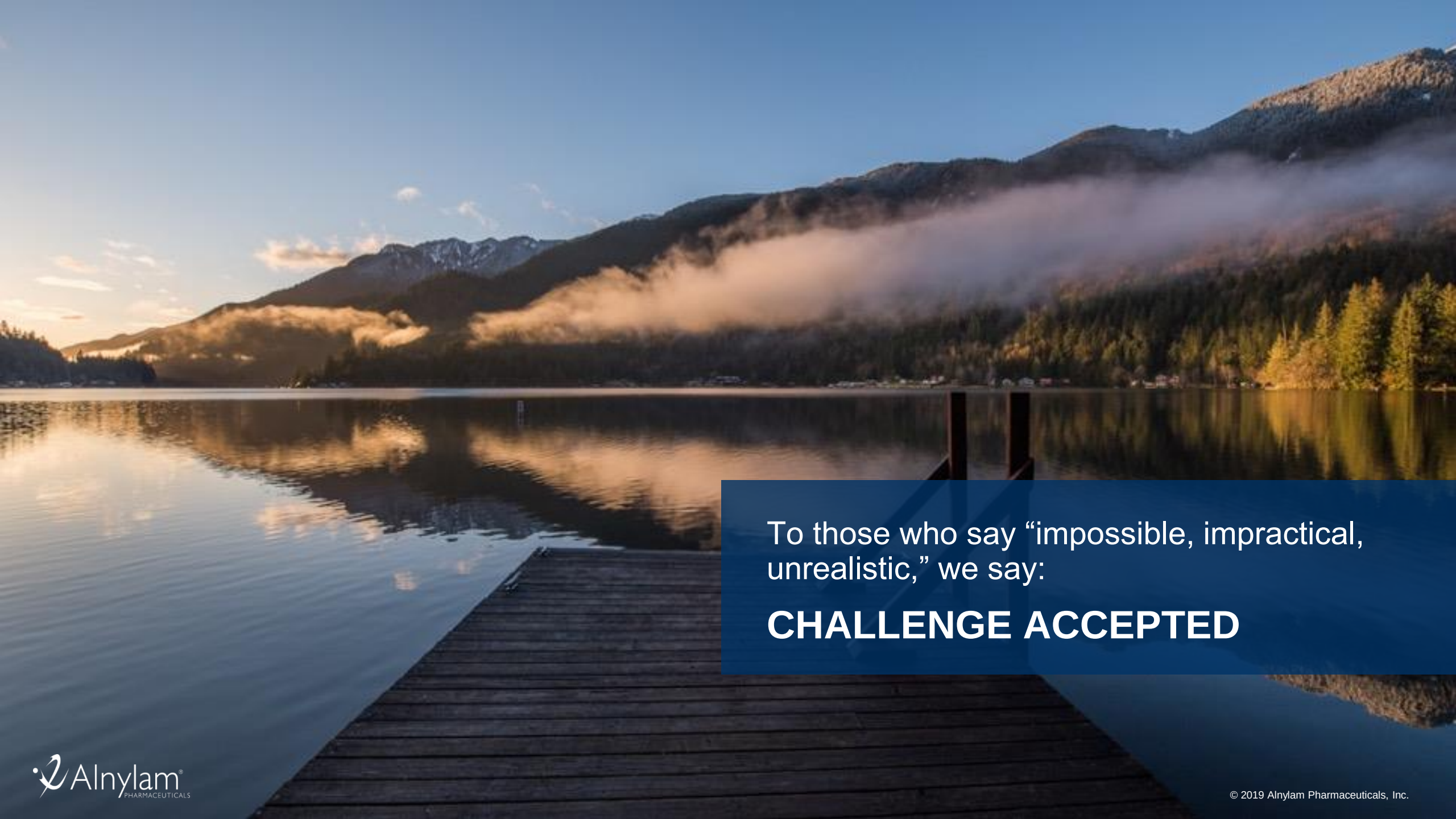
Program-Specific Terms

- **CNS**
  - $100M milestone to Alnylam upon achievement of clinical proof-of-principle
  - 50-50 participation for opt-in programs
- **Ocular**
  - $100M milestone to Alnylam upon achievement of clinical proof-of-principle
  - Alnylam entitled to milestones and royalties
- **Liver**
  - 50-50 participation for HSD17B13 and additional NASH targets
  - 50-50 participation for novel targets from RGC
  - 50-50 participation for cemdisiran monotherapy
  - Alnylam entitled to commercial milestones and royalties for cemdisiran-Mab combination products

* Transaction subject to customary closing conditions including clearance under the Hart-Scott Rodino Antitrust Improvements Act

Alnylam & Regeneron Alliance

Q&A Session



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