

Capstan Therapeutics Launches with \$165 Million to Deliver on the Clinical Promise of Precise *In Vivo* Cell Engineering

- *Capstan's foundation is built on research developed by world-renowned mRNA and cell therapy scientists and clinicians at the University of Pennsylvania*
- *Therapy development focused on cell type-specific engineering across oncology, autoimmune disease, blood disorders, and fibrosis*
- *\$165 million seed and Series A financings include significant investment from leading biopharmaceutical companies including Pfizer Ventures, Leaps by Bayer, Novartis Venture Fund, Eli Lilly and Company and Bristol Myers Squibb, as well as top life sciences investors including OrbiMed, RA Capital, Vida Ventures, Polaris Partners, and Alexandria Venture Investments*
- *Laura Shawver, Ph.D., former CEO of Silverback Therapeutics and Synthorx, appointed as President and Chief Executive Officer*

SAN DIEGO and PHILADELPHIA, September 14, 2022 – Capstan Therapeutics, Inc., a biotechnology company dedicated to developing and delivering precise *in vivo* cell engineering to patients, launched today with \$165 million in financing to build on the foundational insights of world-renowned leaders in mRNA and cell therapy, combining the power of cell therapy with the precision of genetic medicines to help bring safer, first-in-class medicines to more patients in multiple indications.

Capstan's foundational precision *in vivo* engineering technology builds on research conducted in the laboratories of world-renowned mRNA and cell therapy scientists at the University of Pennsylvania.

Capstan's funding includes a recently closed \$102 million Series A financing led by Pfizer Ventures and joined by Leaps by Bayer, Eli Lilly and Company, Bristol Myers Squibb, Polaris Partners, Alexandria Venture Investments, and all existing investors, which follows a \$63 million seed financing led by Novartis Venture Fund and OrbiMed and joined by RA Capital, and Vida Ventures in November 2021.

Advancing Breakthrough Therapies through Precision *in vivo* Engineering

The company plans to use the funds to further its mission of advancing the clinical promise of cell-based therapies by enabling precise *in vivo* engineering of cells with payloads necessary to benefit patients across multiple disease categories. Capstan's modular platform leverages the biological and technological expertise of its founding scientists and includes proprietary targeted lipid nanoparticles (tLNP) technology, a suite of targeting moieties to mediate cell type-specific uptake, and disease-specific mRNA payloads aimed at directly engineering, or ablating pathogenic cells through *in vivo* generated CAR T cells.

Capstan is prioritizing programs based on the potential to transform clinical standards of care. The company's initial efforts will focus on developing first-in-class *in vivo* CAR therapies, with the goal to deliver treatments in an outpatient setting, for patients who have diseases for which there are no effective treatments. Capstan also plans to leverage its precision delivery and engineering technology to advance new therapies for certain monogenic blood disorders.

Visionary Team of Accomplished Executives Poised to Deliver a Transformational Approach

Capstan is also pleased to announce that Laura Shawver, Ph.D., has joined the company as President and Chief Executive Officer. Dr. Shawver brings more than 20 years of experience in executive leadership positions in oncology and other serious diseases to this role, most recently serving as CEO of Silverback Therapeutics and President and CEO of Synthorx.

"Our ambition at Capstan is to invent new clinical paradigms through targeted *in vivo* reprogramming of cells," said Dr. Shawver. "Our founding scientific and operational team is purpose-built to advance programs to the clinic that unite decades of combined experience in groundbreaking CAR therapies with the latest advances in mRNA delivery technology. We are also fortunate to have a distinguished investor syndicate that understands the cell therapy landscape and recognizes the potential of this innovative approach. I am thrilled to lead this team as we work toward making this vision a reality for patients."

"Laura is an exceptional leader with a well-established track record in drug development and passion for addressing unmet needs in oncology and other serious diseases," said Michael Baran, Ph.D., Partner, Pfizer Ventures. "We are delighted to have someone of Laura's caliber captain this exciting next chapter for Capstan to help unlock the potential of this transformative approach for patients."

Dr. Shawver joins an accomplished leadership team of industry veterans who have been at the forefront of cell and gene therapy, including Adrian Bot, M.D., Ph.D., Chief Scientific Officer, formerly Global Head and Vice President of Translational Medicine at Kite, a Gilead Company and previously Chief Scientific Officer at Kite Pharma; and Priya Karmali, Ph.D., Chief Technology Officer, who has over two decades of experience in the field of lipid nanoparticle mediated nucleic acid delivery technologies.

Building on Pioneering Work of World-Renowned Scientific Founders

"Capstan builds on a deep history of collaborative research in mRNA-enabled and CAR-based medicines by our incredible group of scientific founders," said Christian Homsy, M.D., MBA, Capstan's founding CEO. "The company was established to deliver on the promise of cell-based medicines, and with Laura at the helm, is well-positioned to make rapid progress towards clinical evaluation."

The company's scientific founders include several of the experts from the University of Pennsylvania who authored two landmark studies establishing preclinical proof-of-concept for non-viral, *in vivo* CAR-T therapy that Capstan plans to develop and advance toward the clinic. A 2019 [Nature](#) publication demonstrated the preclinical use of *ex vivo* CAR-T cell therapy against FAP, a fibrosis-related target. A follow-on study published in [Science](#) earlier this year built on these earlier results and demonstrated the production of functional CAR-T cells *in vivo* in a mouse model following a single IV administration of an mRNA encoding an anti-FAP CAR packaged in CD5-targeted-LNPs. The scientific founders span diverse areas of research expertise:

- Preclinical translation – Jonathan Epstein, M.D. and Haig Aghajanian, Ph.D. (Dr. Aghajanian is now a Capstan employee.)
- Cell engineering – Carl June, M.D. and Bruce Levine, Ph.D.
- mRNA and targeted LNP technologies – Drew Weissman, M.D., Ph.D. and Hamideh Parhiz, Pharm.D., Ph.D.
- Immunology and Fibrosis – Ellen Puré, Ph.D. and Steven Albelda, M.D.

“Capstan is uniting several recent life science technological advances in a manner that can hopefully unlock the potential of these technologies to develop new medicines for patients across a wider range of diseases,” said Drew Weissman, M.D., Ph.D., Co-Founder of Capstan, who serves as the Roberts Family Professor in Vaccine Research and Director of the Penn Institute for RNA Innovation in the Perelman School of Medicine at the University of Pennsylvania, and co-recipient of the 2021 Lasker-DeBakey Clinical Medical Research Award.

“Research conducted at Penn demonstrates the tremendous promise of harnessing mRNA and targeted LNP delivery to train a patient's body to make CAR-T cells *in vivo*, potentially creating new treatment options,” said Jonathan Epstein, M.D., Chief Scientific Officer at Penn's Perelman School of Medicine. “We believe this approach has the potential to make an important impact not only in oncology, but also in fibrosis and many other diseases. My fellow scientific co-founders and I all look forward to actively partnering with Capstan in our collaborative effort to develop medicines that may benefit patients around the world.”

About Capstan (www.capstantx.com)

Capstan Therapeutics is advancing precision *in vivo* cell engineering to develop therapeutics for a broad range of disease categories with unmet or underserved clinical need. The core technology comprises targeted Lipid Nanoparticles (tLNPs) to enable engineering or ablation of pathogenic cells in the body. The company is combining the power of cell therapy with the precision of genetic medicines to develop new treatment options for patients for oncology, fibrosis, inflammation-related diseases, and monogenic blood disorders. The Company is co-founded by pioneers in the field of CAR-based immunotherapy, nucleic acid drug delivery, tLNPs, and regenerative

medicine, including experienced industry leaders, as well as academic faculty members from the University of Pennsylvania. Capstan has a bicoastal presence with operations in San Diego, CA and Philadelphia, PA. For more information, please visit www.capstantx.com and follow us on [LinkedIn](#).

University of Pennsylvania Financial Disclosure: The laboratories of Drs. Epstein, Weissman, Puré, Albelda and June have received, or may receive in the future, sponsored research funding from Capstan. Penn, and Drs. Weissman, June, Levine, Epstein, Puré, Albelda, Parhiz and Aghajanian each own equity interests in Capstan. Penn and Drs. Weissman, June, Levine, Epstein, Puré, Albelda, Parhiz and Aghajanian have either received, or may receive in the future, license-related financial consideration related to the licensing of certain Penn intellectual property to Capstan. In their capacity as Penn faculty, Drs. Weissman, Albelda, June and Levine also have existing sponsored research and founding relationships with other commercial entities focused on the research and development of mRNA, LNP, cell therapy or immunotherapy technologies.

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