



Penn Health-Tech
Center for Health, Devices and Technology

INNOVATION IN ACTION

2024-2025



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A MESSAGE TO THE PENN HEALTH-TECH COMMUNITY

It is with a feeling of deep gratitude and humility that we introduce our Annual Report—a testament to the extraordinary dedication and collaborative spirit of this entire community. Inside, you will find a full account of the action we drove this year, demonstrating both our success in bridging the gap between cutting-edge research and transformative technologies and our commitment to educating the next-generation of health technology innovators.

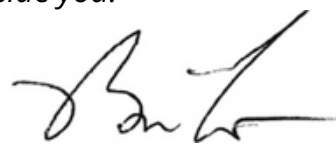
*Since our establishment in 2017, Penn Health-Tech has empowered those solving the world's most complex health challenges across the University of Pennsylvania and Children's Hospital of Philadelphia ecosystem. Our historical impact is substantial: **over 706 applications reviewed, 108 projects supported, \$3.8 million distributed**, leading to **35 start-ups**, over **\$160 million in follow-on funding** and **over 232 new IP filings**. We also firmly believe that developing the next generation of leadership and expertise is just as critical as developing new technology itself. We've trained more than **190 faculty, clinicians, researchers, and students** through our commercialization Boot Camp and Fellows programs, equipping the next generation of health-tech leaders.*

This report details our commitment to both accelerating impact and innovation training over the last year. We celebrated the graduation of [11 pioneering teams](#) from our flagship Accelerator and welcomed [8 new teams](#), each tackling critical unmet needs in healthcare. Our educational programs also grew significantly. This year, we educated over 60 high-potential clinicians, researchers, and students through our commercialization Boot Camp, Health-Tech Huddle seminars, and Fellows programs, equipping them with the foundational knowledge to turn concepts into viable solutions. We celebrated the inaugural cohort of 6 exceptional Clinical Fellows, translating their clinical expertise into product innovation. We also successfully launched a novel entrepreneurial Fellowship program, Emerging Leaders in Health Innovation Technology and Entrepreneurship ([Penn ELITE Fellowship](#)), with [Venture Lab](#), a partnership between the Wharton School, Penn Engineering, and the Stuart Weitzman School of Design. The ELITE Fellowship program is designed to train the best and brightest PhD, MD, and MBA graduates from Penn to be the next generation of innovation leaders, while also advancing high-potential projects already under development at our remarkable institution.

As we reflect on this transformative year, we recognize that our journey is just beginning. Our focus remains resolutely on the future: bringing critical healthcare solutions to market and continuing to invest in the talent that will drive this next era of innovation. Thank you for being an essential part of this movement. We are honored to work alongside you.



Katie Reuther, PhD, MBA
Executive Director, Penn Health-Tech
Practice Associate Professor in Bioengineering



Brian Litt, MD
Faculty Director, Penn Health-Tech
Perelman Professor of Neurology, Neurosurgery, and
Bioengineering



About Penn Health-Tech



OUR MISSION

We empower Penn and CHOP innovators to create and develop transformative medical devices and health technologies.

We focus our efforts in three main areas: **innovation**, **connection**, and **education**.

OUR VISION

As Penn's hub for health technology innovation, we facilitate the development and commercialization of novel medical devices and health technologies. By connecting innovators with unparalleled resources, mentorship, and expertise, we empower them to turn bold ideas into market-ready solutions. We aim to develop both breakthrough innovations and visionary innovators who will advance healthcare and improve lives everywhere.

Penn Health-Tech is sponsored by Penn Medicine, Penn Engineering, the Office of the Vice Provost for Research, and the Children's Hospital of Philadelphia (CHOP).



Accelerating Impact



HEALTH TECH ACCELERATOR PROGRAM OVERVIEW

AREA OF FOCUS: INNOVATION

We facilitate discovery, development, and commercialization of health technology innovations to address important unmet clinical needs.

The Health Tech Accelerator (HTA) is a year-long, cohort-based program that provides support through advising, funding, and project management aimed at accelerating the development of innovative health technologies. Each team is partnered with a Penn Health-Tech Project Manager and an external Business Advisor who serves as a knowledge resource to provide expert advice and insights in medical device commercialization.



TIMING

July to June



DELIVERABLES

Technical De-risking

(e.g., prototype development, proof of concept)

Commercial De-risking

(e.g., setting development milestones; clinical, regulatory, reimbursement strategy)



GOALS

Reach a go/no-go decision.

Attract further financial support.

A YEAR WITH PENN HEALTH-TECH

Before selection to our Health Tech Accelerator program, applicant teams may choose to participate in our Pre-Accelerator Boot Camp. Once selected by Penn Health-Tech, the Accelerator year officially starts with kickoff meetings in July, where teams finalize their milestones and project budget. The year is divided into quarters, capped by quarterly update meetings where teams provide key project updates to a panel of experts. In addition to Milestones, teams will have areas of focus each quarter to ensure that critical aspects of health technology commercialization are systematically addressed.

Quarter Focuses:

Q1: Milestone Development & Unmet Need

Q2: Market Identification & Value Proposition

Q3: Regulatory, Reimbursement, & Commercialization Strategy Development

Q4: Path to Market, Follow on Funding, Executive Summary and Pitching

DEMO DAY RECAP



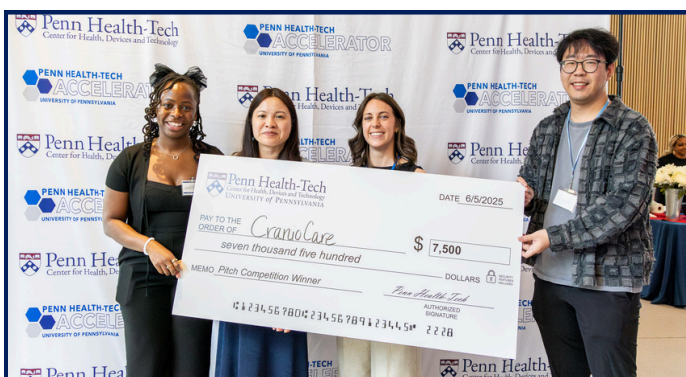
CONNECTING INNOVATORS CELEBRATING IMPACT

SUMMARY

Penn Health-Tech's Demo Day brought together a vibrant community of innovators, industry leaders, and investors to witness the culmination of 12 months of hard work. Six teams presented their med-tech innovations, sharing their journey in the Accelerator, and competed in a pitch competition. The event showcased the incredible progress of the cohort and celebrated the entrepreneurial spirit driving healthcare innovation.

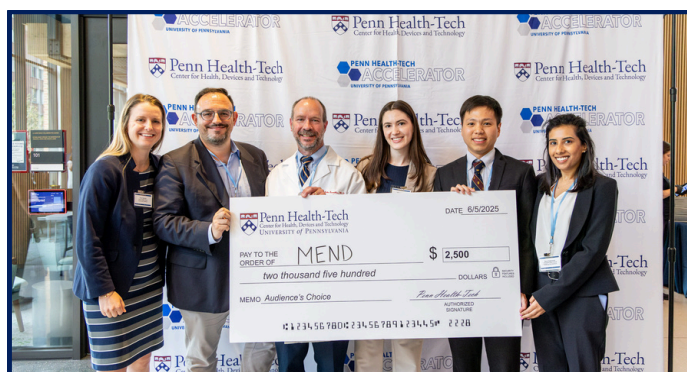
AREA OF FOCUS: CONNECTION

We identify, engage, and connect innovators and health technology ecosystem partners to enable a culture of collaboration and innovation.



HIGHLIGHTS

Congratulations to our 2025 Pitch Competition Winner: the **CranioCare** team (Alexander Tucker, Shu Yang, Jordan Swanson, and Yinding Chi) and our Audience Choice winner: the **MEND** team (Riccardo Gottardi, Narintadeach Charoensombut, Dana Ragbirsingh, John Germiller).



2024-2025 HTA COHORT

Over twelve months, the Health Tech Accelerator has propelled eleven participating teams through significant milestones in their journey to commercialize innovative healthcare solutions. Teams made notable strides in validating their market opportunity, building prototypes, testing their solutions (benchtop and/or preclinical), and establishing valuable connections with investors and industry experts, strengthening their networks and opening pathways for future funding and collaboration. Demo Day highlighted these achievements, showcasing each team's progress and celebrating their dedication to translating cutting-edge research into viable healthcare solutions.

Alpha-c: Personalized responsive deep brain stimulation (DBS) for treatment-refractory pathological compulsivity
Casey Halpern, MD (UPenn), Liming Qiu, MD (UPenn), Younghoon Nho, PhD (UPenn)

AMP-Vent: High-tech, low-cost ventilation for austere environments and underserved communities
Katie Weeks, BEng (CHOP), Todd Kilbaugh, MD (CHOP), Rodrigo Menezes Forti, PhD (CHOP)

Cerespectus™: Microcatheter & Navigation Platform Technology for Targeted CNS Therapy Delivery
Bryan Pukenas, MD (UPenn), Kamna Giare-Patel, MS (Cerespectus)

CogSpeech: Digital speech assessment for monitoring behavioral symptoms in dementia
Naomi Nevler, MD (UPenn), Sunghye Cho, PhD (UPenn), Yoonduk Kim (UPenn)

Cranio Care: A single-stage bioresorbable craniofacial distractor
Alexander Tucker, MD (CHOP), Shu Yang, PhD (UPenn), Jordan Swanson, MD (CHOP)

FractSure/Osetomics: Blood Test for early prognosis of long-bone fracture healing
Samir Mehta, MD (UPenn), Annamarie Horan, MPA, PhD (UPenn)

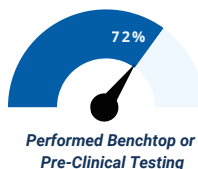
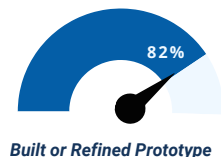
Graftable: Oxygen microparticles for regenerative wound healing
Daeyeon Lee, PhD (UPenn), Sarah Ebmeier, MS (Graftable), Oren Friedman, MD (UPenn),
Sergei Vinogradov, PhD (UPenn), CK Yeh, PhD Candidate (UPenn)

Mending the Eardrum: Decellularized cartilage for tympanoplasty
Riccardo Gottardi, PhD (CHOP), John Gemiller, MD, PhD (CHOP), Narintadeach Charoensombut, PhD (UPenn),
Dana Ragbirsingh, MS (UPenn), Ryan Friedman (UPenn)

NOM: Non-invasive neurometabolic optical monitor to improve pediatric brain health
Rodrigo Menezes Forti, PhD (CHOP), Katie Weeks (CHOP), Wesley Baker, PhD (CHOP),
Tiffany Ko, PhD (CHOP), Todd Kilbaugh, MD (CHOP)

RADHawk™: An AI-Based Radiology Expert Advisor
Janet Reid, MD, FRCPC, MEd (CHOP), Julian Lopez Rippe, MD (CHOP)

ZeoDrop: Point of Care device to accurately and quickly determine birth blood loss
Stefanie Modri, MSN, RNC-MNN, C-OB (UPenn), Rebecca Hoffman, PhD (UPenn), Joshua Buser, PhD





Accelerator Cohort 2025



In June, Penn Health-Tech revealed eight teams stepping up to the plate this year as part of the Health Tech Accelerator 2025-2026 cohort.

NerveDx

An Automated Platform to Evaluate Nerve Health

Team: Josh Baxter, PhD (UPenn), Flavia Vitale, PhD (UPenn), Quinn Tate, MD, MS (UPenn), Maggie Wagner, BS (UPenn)

Portable LVO Stroke Detector

Portable Large Vessel Occlusion Stroke Detector

Team: Christopher Favilla, MD (UPenn), Wesley Baker, PhD (UPenn, CHOP), Rogan Magee, MD, PhD (UPenn), Ed Dickinson, MD (UPenn)

Riverrun

Minimally Invasive Cardiovascular Neuromodulation

Team: Timothy Markman, MD (UPenn), Saman Nazarian, MD, PhD (UPenn), Cory Tschabrunn, PhD (UPenn)

Incuta Therapeutics

A novel injectable hydrogel therapy for hidradenitis suppurativa.

Team: Leo Wang, MD, PhD (UPenn), George Cotsarelis, MD (UPenn)

SteriFlush

A closed, sterile system that allows for continuous and intermittent bladder irrigation.

Team: Michael Tomasetti, MSN, RN (UPenn), Jessica Burke, MSN, RN (UPenn)

ELONG

A minimally invasive approach to induce esophageal lengthening and facilitate repair of long-gap esophageal atresia.

Team: Duy T. Dao, MD, MPH (CHOP), Thomas E. Hamilton, MD (CHOP), Dennis Hiller (CHOP), Rosa Hwang (CHOP), Joshua Dienstman (CHOP)

Visi Health

Bringing ophthalmic evaluation and imaging directly to patients through a portable, telemedicine-enabled solution

Team: Lama Al-Aswad, MD, MPH (UPenn), Almiqdad Saeed, MD (UPenn), Rina Nagatani (UPenn)

CIRCA

Conversational AI to Improve Early Pregnancy Care

Team: Alice Abernathy, MD, MSHP (UPenn), Courtney Schreiber, MD, MPH (UPenn), Kiya Gurmessa, MD, MPH (UPenn), Anurag Verma, PhD (UPenn), Hritvik Gupta, MS (UPenn)



AREA OF FOCUS: EDUCATION

We educate and train the next generation of health technology innovators and leaders.

Boot Camp

We host a 10-week strategic education program for faculty, staff, and trainees applying to our Accelerator program, in partnership with Penn Bioengineering.

The Boot Camp provides hands-on training to navigate the technology development process and explore the commercial potential and risks for their ideas.

Last Spring, **35** faculty and staff participated alongside **23** graduate students. Since the program's inception, PHT has trained a total of **92** faculty and staff and **74** graduate students.



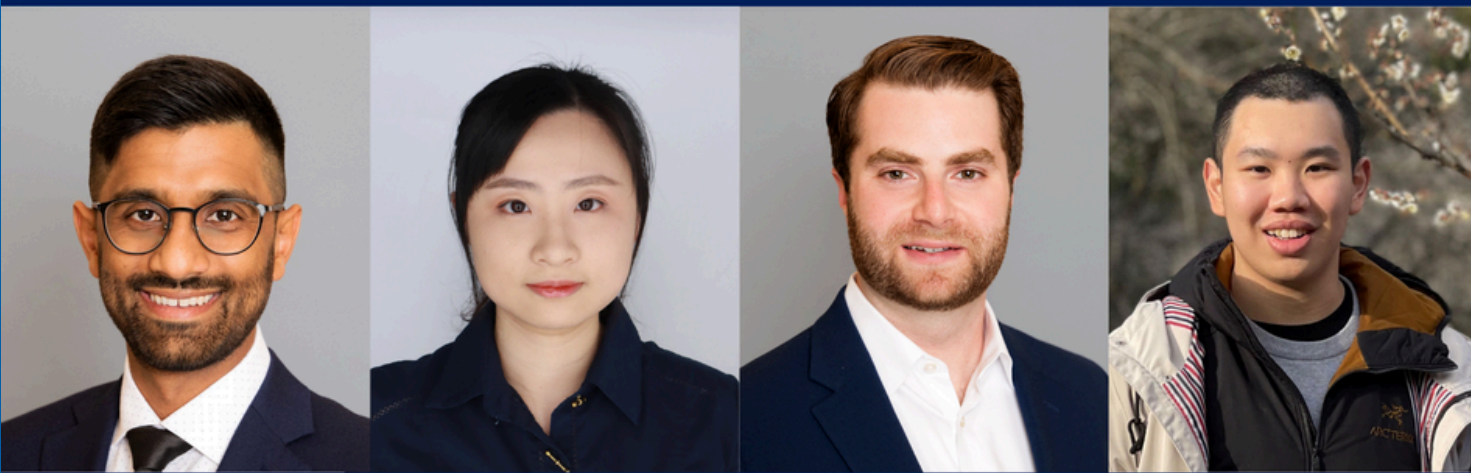
Student Fellows Program

We offer a competitive cohort-based training program for graduate students. Student Fellows support Accelerator teams and gain exposure to health technology development and commercialization in an academic setting. This fall we welcomed our new cohort of Student Fellows. Applications for the next cohort open Winter 2026.



2025-2026 Student Fellows

Nicholas Hanchak, SEAS '26
Dana Bahng, SAS '26, SEAS '27
Yuwei (Carmen) Chang, SEAS '26
Zack Goldblum, SEAS '28
Jieru Shu, Wharton '26
Ding Tang, SEAS '27



2024-2025 Student Fellows

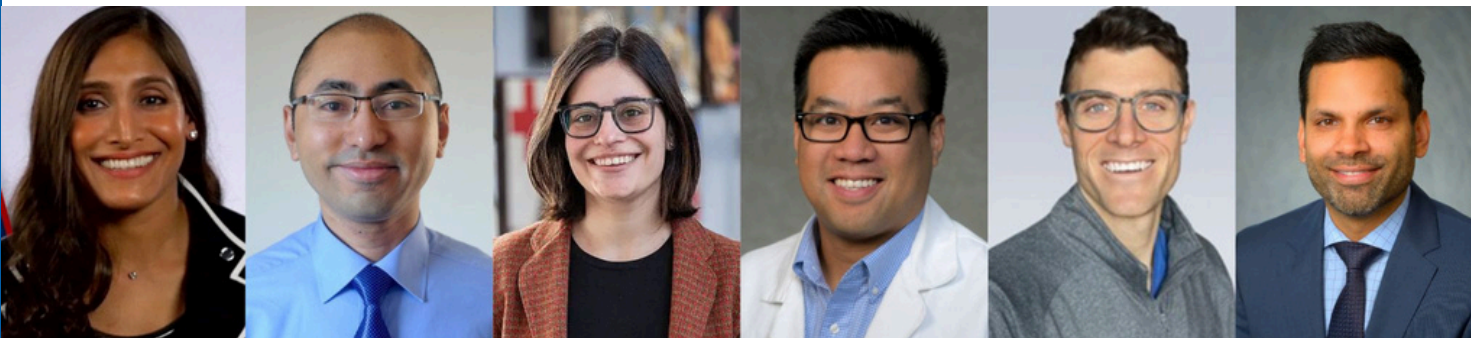
Sachin Doshi, Wharton '25
Chuming (Helen) Zhang, SEAS '25
Eric Erle, Wharton '25
Mingde (Bryan) Zeng, SEAS '25

Clinical Fellows Program

We provide a proven pathway for clinical faculty and staff to pursue their interest in healthcare innovation. Clinical Fellows provide guidance to our programs and teams and serve as a connection point to Penn Medicine, CHOP, and beyond.

“ This experience gave me the tools, confidence, and vision to lead change and reimagine what’s possible in healthcare technology. ”

- 2023-2025 Clinical Fellow



2025-2027 Clinical Fellows

Rupal O'Quinn, MD, MHCI, FACC, Cardio-Oncology, Penn
Srijan Tandukar, MD, Nephrology, Penn
Kathryn Connell, PhD, RN, Biobehavioral Health Sciences, Penn
Jorge Jo Kamimoto, MD, Endocrinology, Diabetes, Penn
David DiBardino, MD, Pulmonology, Penn
Neel Chokshi, MD, MBA, Digital Health, Sports Cardiologist, Penn



2023-2025 Clinical Fellows

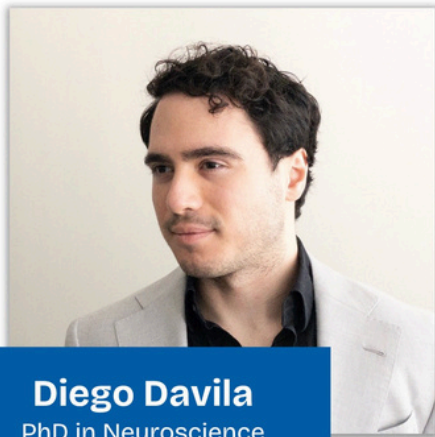
Heather Giannini, MD, Pulmonary, Allergy, Critical Care, Penn (now Virtua Health)
Lawrence Fried, MD, MBA, Neurology, CHOP (now Bayer)
Lorraine Boakye, MD, Orthopaedic Surgery, Penn
Ashley Boenisch, MSN, RN, CMSRN, Heart and Vascular Center, Penn
Sonul Mehta, MD, Oculoplastic and Reconstructive Surgery, Penn
Nadav Schwartz, MD, Maternal Fetal Medicine, Penn

ELITE Fellowship

In August 2025, Penn Health-Tech and Venture Lab jointly launched the Penn ELITE Fellowship Program—**Emerging Leaders in Healthcare Innovation, Technology, and Entrepreneurship**—a new cross-campus initiative designed to accelerate the commercialization of academic health-tech innovations. Venture Lab, a partnership between the Wharton School, Penn Engineering, and the Stuart Weitzman School of Design, supports student and alumni entrepreneurs at Penn.

This full-time, one-year post-graduate program equips exceptional MD, PhD, and MBA graduates with the skills, mentorship, and resources to become the next generation of CEOs, CTOs, and CMOs in the health-tech industry. ELITE Fellows work at the intersection of science, business, and clinical care to translate promising technologies into real-world ventures that improve health outcomes.

2025 Inaugural ELITE Fellows



Diego Davila

PhD in Neuroscience



Daniel Shackleton

Masters of Business
Administration



Adeola Fagunloye

PhD in Biochemistry &
Molecular Biophysics

Health Tech Huddles

The Health Tech Huddle Series is designed to provide the Penn Health-Tech community with foundational knowledge of the health tech commercialization process to supplement their engagement with Penn Health-Tech. Aligned with our goal to train the next generation of healthcare innovators, the series offers real-world insights through sessions led by industry professionals and med-tech entrepreneurs. Since launching in Fall of 2024, we've hosted 8 Health Tech Huddles open to our portfolio teams, Student Fellows and Clinical Fellows.

2024-2025 Health Tech Huddles

Storytelling Around the Unmet Need

Guest Speaker: Mikael Avery

Value Proposition Development

Guest Speaker: Katie Reuther, PhD, MBA

Intellectual Property Basics

Guest Speaker: Craig Kenesky, PhD

Industry Innovator Spotlight

Guest Speaker: John Barrett

Value Proposition, Targeted Marketing and Value-Based Pricing

Guest Speaker: Alex Herzlinger, MBA

Selling Process and Go-to-Market Strategy

Guest Speaker: Alex Herzlinger, MBA

Pitching 101

Guest Speaker: Katie Reuther, PhD, MBA

Industry Innovator Spotlight

Guest Speaker: Bruce Shook, MBA



Portfolio Highlights

AltruMed

HTA 2019-2020

Accomplishments: NIH/NIDA Phase I SBIR award for our DOVE project titled: Device-Agnostic Hypoxia Detection Software for Overdose Prediction and Positive Reversal Monitoring; PAMED Innovation Grant

Airalux

Boot Camp 2024

Accomplishments: Phase I SBIR from the NHLBI for ~\$306k as a Small Business Transition Grant for New Entrepreneurs

VASOWATCH

HTA 2021-2022, Seed 2023

Accomplishments: Won second place at the Philadelphia Regional Startup World Cup Pitch Competition.

BEYOND ACCELERATION

Penn Health-Tech provides ongoing support to its alumni teams, including those who have participated in our Health Tech Accelerator, Seed Grant program, or sponsored prizes with Penn Engineering (NEMO Prize) or Penn Dental Medicine (IDEA Prize). We actively track the progress of our Accelerator and Seed Grant teams for up to five years, offering continued guidance and support, which may include follow-on funding to help them advance their innovations.

NEMO and IDEA Prize winners are also encouraged to continue the development and commercialization of their projects by participating in our Accelerator program. One of our key five-year goals is to scale these offerings, ensuring that alumni teams receive the resources they need to successfully bring their healthcare technologies to market.



Made Possible Together

DRIVING INNOVATION THROUGH PARTNERSHIP

Penn Health-Tech's success is deeply rooted in fostering dynamic collaborations that bridge the gap between engineering, medicine, and commercialization. This past year, we've continued developing our strategic partnerships, enabling us to support breakthrough research, enhance academic entrepreneurship, and contribute to the global discourse on health-tech translation.

Academic Entrepreneurship Bootcamp (CHOP IE)

Penn Health-Tech proudly served as a sponsor and supporter of the Children's Hospital of Philadelphia (CHOP) Academic Entrepreneurship Bootcamp. This initiative is a critical partnership between CHOP and the University of Pennsylvania, designed to cultivate the next generation of medical device innovators. The course structure includes an intensive five-day in-person bootcamp combined with extended, personalized mentoring. This rigorous approach equips participants with the essential tools and strategies required to translate their medical device ideas into impactful, commercially viable innovations, strengthening the pipeline of high-potential health technologies.

Nature Portfolio Biotech Article Publication

We were honored to publish a new article in the prestigious Nature Portfolio journal, Nature Biotech. Penn Health-Tech Executive Director, Katie Reuther, co-authored the piece alongside Darren Cooke and Mark Kessel. The article was specifically written to guide academics and researchers in the nascent stages of transitioning their scientific discoveries into commercial products. It emphasizes the critical importance of developing a compelling and robust pitch deck as a vital first step for establishing credibility with third parties and securing the necessary financial resources for commercialization. This publication extends PHT's influence by sharing best practices for translation with the global scientific community.

Nemirovsky Engineering and Medicine Opportunity (NEMO) Prize

Made possible by a generous gift from Ofer Nemirovsky, EE'79, W'79, PAR'21, the NEMO Prize is one of Penn Health-Tech's mechanisms for catalyzing innovation. The prize is strategically focused on supporting early-stage, ideas at the intersection of engineering and medicine. The 2024 NEMO Prize awarded \$80,000 to support groundbreaking research led by Inventors David Issadore and Jacob Brenner. Their project, focused on Self-Administrable DNA Therapy, exemplifies the spirit of the NEMO Prize by pushing the boundaries of interdisciplinary biomedical engineering and offering a breakthrough potential that would not be possible without this early-stage funding.

Innovation in Dental Medicine and Engineering to Advance Oral Health (IDEA) Prize

The IDEA Prize is a collaborative competition launched in partnership with The Center for Innovation & Precision Dentistry (CiPD). This joint venture leverages engineering and dental expertise to accelerate the development of feasible solutions for critical unmet needs in oral and craniofacial health. The winning team was awarded \$80,000 to advance their novel solution, which focuses on an Anti-Degenerative Therapeutic for Restoring Immediate and Lasting Recovery Following Nerve Fusion. The winning team was led by D. Kacy Cullen, PhD (PI; Professor, Departments of Neurosurgery & Bioengineering), Anh Le, DDS, PhD (Co-I; Chair, Professor, Department of Oral and Maxillofacial Surgery), and Justin Burrell, PhD (Co-I; Postdoctoral Fellow).



Made Possible Together

OUR TEAM



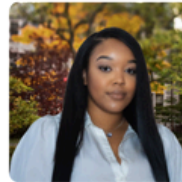
Katie Reuther, PhD, MBA
Executive Director



Glory Durham, MPH, MBA
Senior Director of Healthcare Strategy



Courtney M. Houtsma, MS, PMP
Director of Development



India Watson, MSED
Associate Director of Education and Operations



Gabriella Grym, MS
Project Manager



Gloria Easley
Program and Admin Coordinator



Brian Litt, MD
Faculty Director



Cameron Baston, MD, MSCE
Faculty Associate Director



Todd Kilbaugh, MD
Faculty Associate Director



Mark Yim, PhD
Faculty Associate Director



Scott Manaker, MD, PhD
Clinical Advisor



Eric Eaton, PhD
Technical Advisor



Dustyn Roberts, PhD
Engineer in Residence

Strategic Advisory Board Members

Det Ansinn	Justin McMurray
Jayaram Brindala, MD, MBA, MPH	Dean Miller, MBA
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Sean Haag, MBA	Tiffany Wilson, MBA
Lou Lieto, JD, PhD	Seth Goldenberg, PhD
Howard Riina, MD	Anthony Williams

HTA Mentors & Advisors

Det Ansinn	James Keller
Melisa Anton-Lopez	Alex Lyness
Mikael Avery	George Maliha
John Barrett	Scott Manaker, MD, PhD
Jayaram Brindala, MD, MBA, MPH	Bhavana Mohanraj, PhD
Joe Camaratta	Clare Padgett
Mark Chandler	Jiah Pearson-Leary
Eric Eaton, PhD	Mike Reed
Andrew Haas, MD	Dustyn Roberts, PhD
Scott Hollander	Collin Stabler
Alex Herzlinger	John Welsh, PhD
Bryan Humbarger	Arun Kejariwal
Pitou Devgon, MD, MBA	Flaura Winston, MD, PhD

Boot Camp Speakers & Office Hour Leaders

Pitou Devgon, MD, MBA	Bruce Shook
Monica Ferrante	Eric Sugalski, MBA
Craig Kenesky, PhD	Kultaran Chohan
Scott Manaker, MD, PhD	Stacey Youcis

Pennsylvania Pediatric Medical Device Consortium

Robert Levy, MD	Stan Stachelek, PhD
Joshua Dienstman	

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