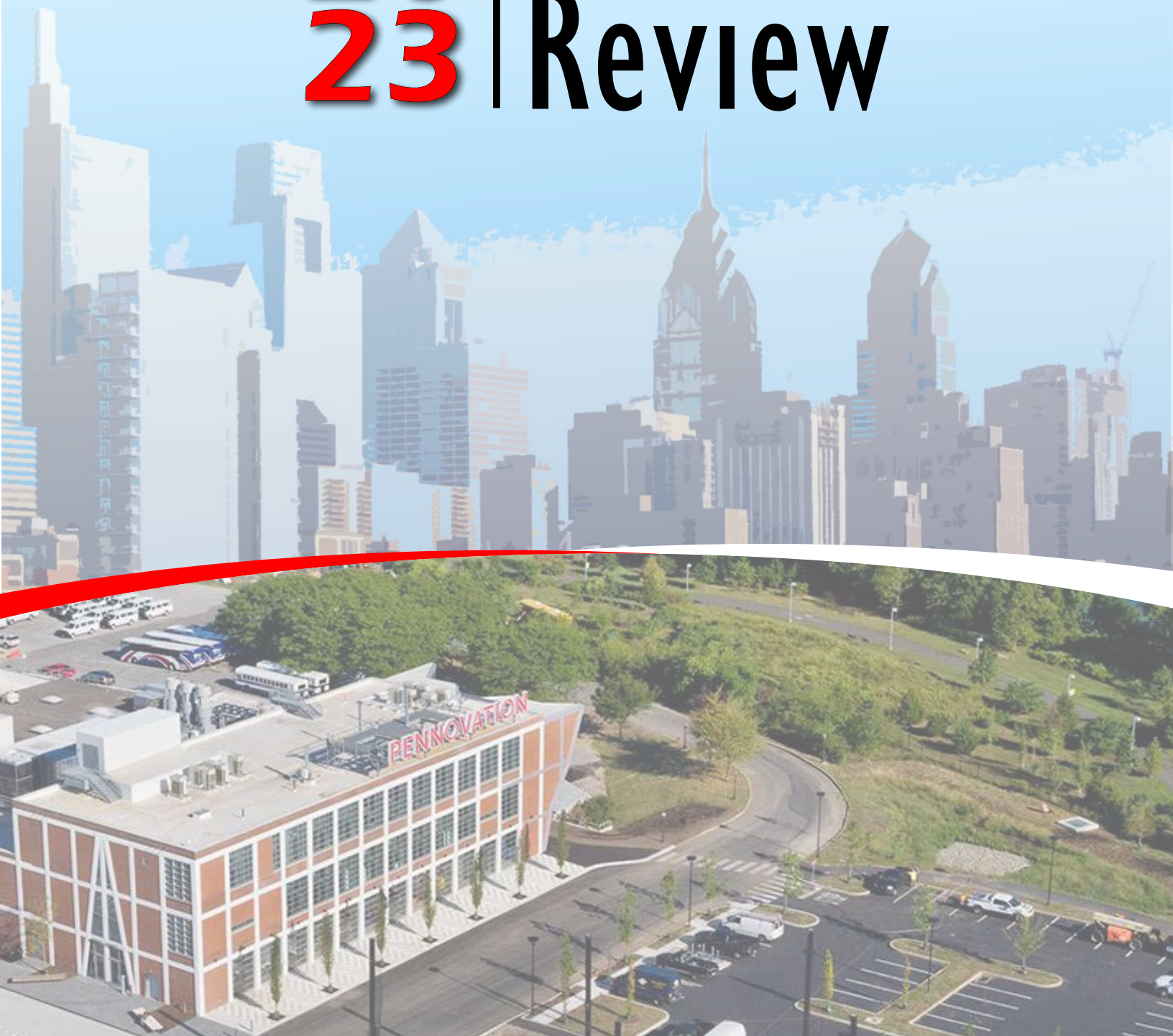


# PENNOVATION WORKS

Where Ideas Go To Work

20  
23 | Year in  
Review





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# Introduction

In 2023, Pennovation Works continued to evolve and cultivate an innovative and collaborative environment for its more than 100 companies and research entities. The 23-acre innovation hub is powered by its robust community of researchers, entrepreneurs, and industry partners working to solve real world problems and translate inventiveness into viable ventures.

Pennovation's distinctive blend of offices, labs, and production space paired with its dedicated team and industry mentors, creates the right environment for entrepreneurs to nurture and develop their startups within the community. As a result of this success, Pennovation Works remains a leader in Philadelphia's life science and technology ecosystem and is viewed as a model of excellence for other innovation hubs.

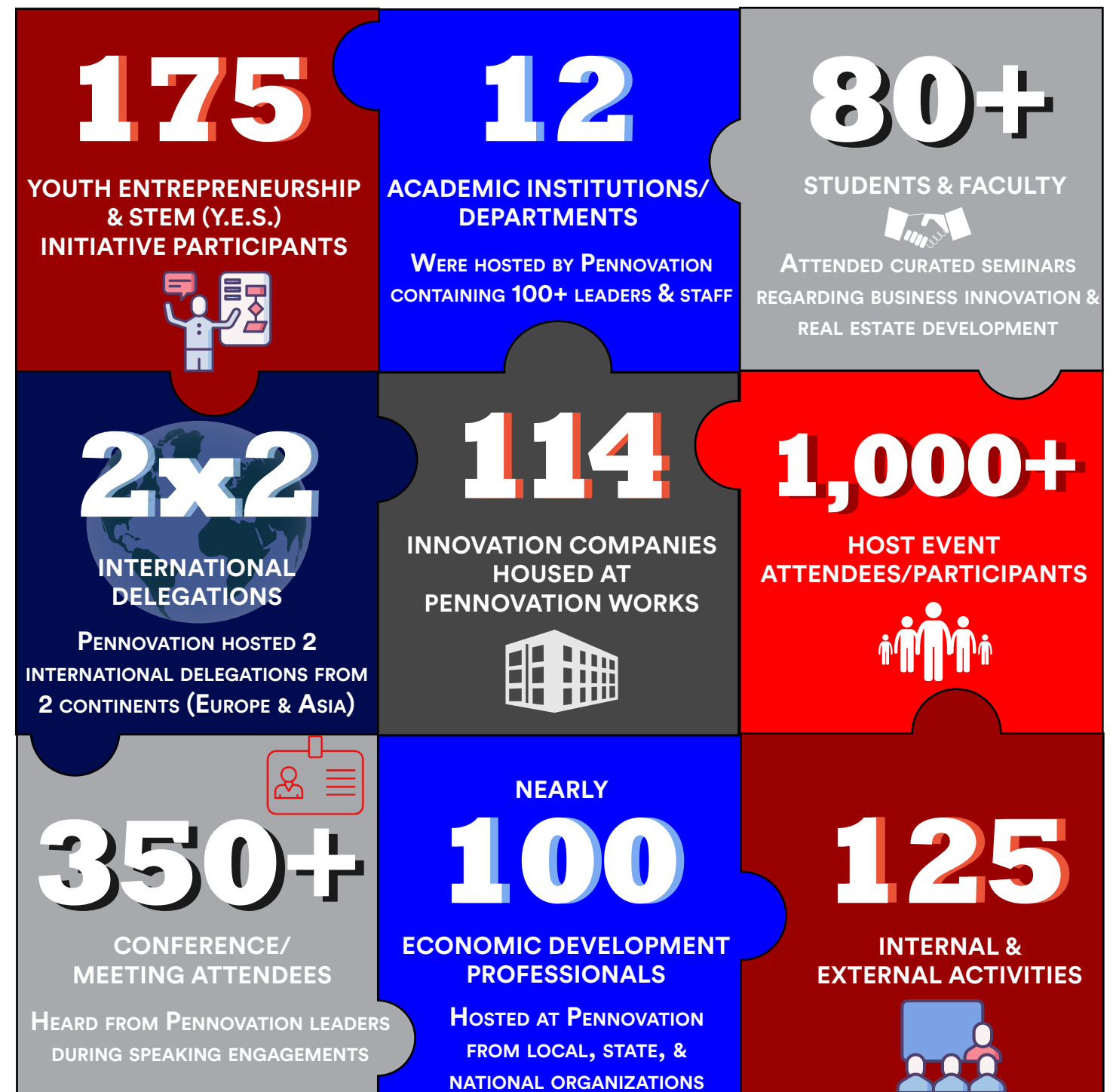
The following pages highlight the stats, stories, and impactful projects that occurred in 2023. Discover why Pennovation Works continues to be *Where Ideas Go To Work*, and learn about the innovative discoveries and research that shaped another successful year.



## KNOWLEDGE EXCHANGE NETWORK

As a forerunner in innovation ecosystem building, Pennovation Works welcomes engagements with a robust *Knowledge Exchange Network* to share best practices and information with institutional, government, and economic development leaders across the globe. The Pennovation Works team also supports industry-wide learning and development by serving as expert panelists and speakers for conferences and industry meetings, and designing and delivering customized seminars for undergraduate and graduate courses.

# 1 | Innovation Ecosystem By the Numbers

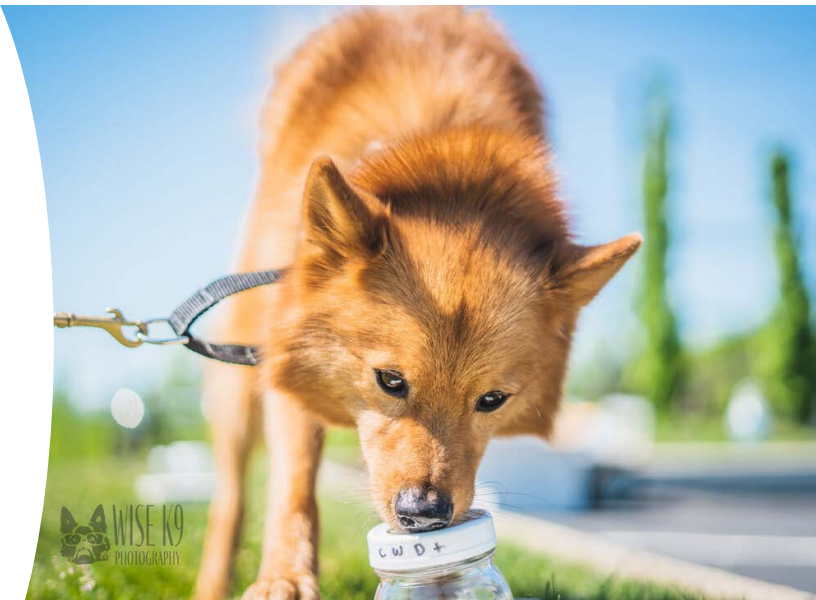


# 2 | Research Roundup



*Pennovation Works provides a variety of spaces and resources to assist members in advancing their research in new and innovative ways.*

*Click on the images below to learn more about how these researchers, entrepreneurs, and students transform their ideas into viable commercial ventures.*



## Trained Dogs Can Sniff Out A Deadly Deer Disease

The School of Veterinary Medicine and the Penn Vet Working Dog Center (PVWDC) are working with dogs to see if they can help distinguish deer that are sick with chronic wasting disease (CWD) through scent detection to help prevent the spread.



## Penn's SAFELab Sits At The Intersection Of Technology And Social Work

Desmond Upton Patton, Founder of SAFELab, is developing the Penn Center for Inclusive Innovation and Technology through the School of Social Policy and Practice at the Pennovation Center. This hub offers resources and works with Pennovation startups to think more about diversity, equity and inclusion as they develop their products and companies.



## Penn Dental Research Greenhouse Develops Plant-based, Oral Delivery Of Insulin

Henry Daniell and his team of researchers at the University of Pennsylvania School of Dental Medicine, recently developed a new method of insulin delivery lowering the risk of hypoglycemia when compared to current diabetes treatments.



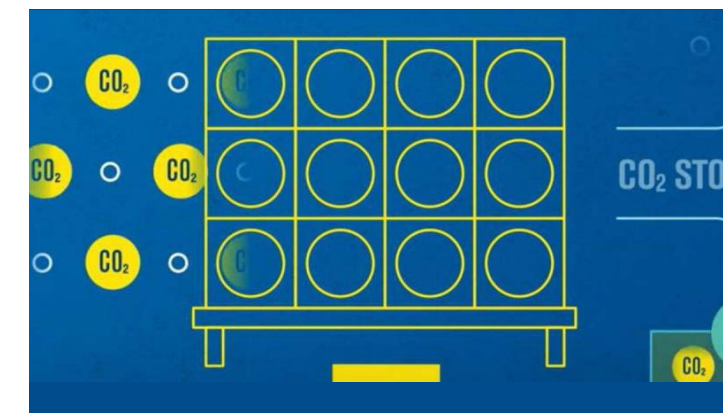
## Direct Air Capture Research At The Clean Energy Conversions Lab

In the push to decarbonize, it is crucial that we consider the local implications of new energy technologies. This is true for direct air capture, or DAC, a technology that the Clean Energy Conversions Lab, located within the Pennovation Works ecosystem, are studying closely. Direct Air Capture occurs when carbon dioxide is removed from the air and sent to storage.



## Penn Vet Working Dog Center Names Dr. Meghan Ramos As New Medical Director

Dr. Meghan Ramos took on the role of Medical Director of the PVWDC as well as the position of Lecturer in Sports Medicine and Working Dog Sciences at Penn Vet's Matthew J. Ryan Veterinary Hospital. Stepping into her role as Medical Director, Dr. Ramos brings an unwavering commitment to the continued advancement of canine well-being.



# 3 | Company News & Milestones



At Pennovation Works, company development often takes the shape of recognition through industry awards, publications, securing financing, or participation in industry programs.

Click on the images below to learn how companies have experienced significant growth through product development, partnerships, funding, expansion, and more.



**Sonura**, a startup developing a beanie that filters out harmful noises for infants in neonatal intensive care units, [joined the Pennovation Works community](#) in the fall. In 2023, the company not only participated in the Pennovation Accelerator, but also were winners of the President's Innovation Prize and named among the [Philadelphia Business Journal's Inno Under 25 honorees](#).

**Treeswift** was selected as winners of the UpLink - World Economic Forum Trillion Trees: United States Challenge and were named a Top Innovator. [Read more.](#)



The company was also awarded a National Science Foundation (NSF) Phase II grant in 2023 as part of the Small Business Innovation Research (SBIR) program in partnership with University of Pennsylvania GRASP Lab and Virginia Tech Forest Modelling Research Cooperative. [Read more.](#)



**Interius BioTherapeutics** raised **\$21.5 million** to advance their cancer-fighting technology platform in 2023. The company has now raised nearly \$100 million since their inception, including the \$76 million raised last year in a Series A round. [Read more.](#)



**AgroFresh Solutions, Inc.**, the leader in post-harvest freshness solutions announced a partnership with **Strella**, a leading startup and developer of proprietary sensor technology. This partnership brought forward cutting-edge technological solutions that reduce food loss and promote sustainable agriculture. [Read more.](#)



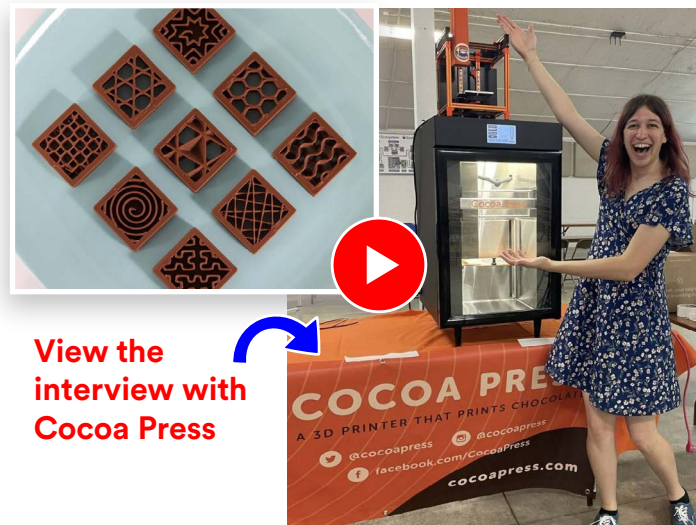
FDA granted **FloBio, LLC** with a Breakthrough Device Designation for their rapid bleeding risk diagnostic test currently in development. [Read more.](#)



The founders of **Baleena** were named among the 2023 Forbes 30 Under 30 in the Energy category. [Read more.](#)  
In 2023, Baleena was also accepted into Gener8tor's Global Sustainability Accelerator. [Read more.](#)



**Cocoa Press** launched the latest iteration of their 3D chocolate printers in 2023. Founder, Ellie Weinstein's newest model comes in two options – a professional model and a do-it-yourself kit. [Read more.](#)



[View the interview with Cocoa Press](#)



**Tozuda** joined the prestigious International Safety Equipment Association. Through joining the Head Protection Standards Committee within the organization, Tozuda deepened their commitment to the 111 million workers in the US who rely on PPE every day. [Read more.](#)

# 4 | Signature Events & Programs



Pennovation Works holds a variety of signature events open to local innovators, member companies, students, press, and the public. As a leader in innovative technology and research, Pennovation offers curated programs and training for startups.

Through this targeted programming, companies receive feedback and guidance on key aspects of developing and maintaining a business, while also receiving valuable exposure to the press and investors.





**9 Local Startups**  
The Pennovation Accelerator cohort was comprised of various industries including health tech, artificial intelligence, boba, and more.



**Industry Education**  
Cohort companies participate in weekly educational sessions presented by subject matter experts.



**Experienced Mentors**  
Each company is paired with a mentor who meets weekly, advises them on their journey, and provides valuable industry insight.



**Networking**  
Curated networking opportunities help companies make connections into the larger Philadelphia entrepreneurial community.



[View the 2023 Accelerator Pitch Day Recording](#)

## Medicratic & Pocket Scribe Win at 6<sup>th</sup> Annual Pennovation Accelerator Pitch Day

In July, the Pennovation Accelerator concluded their program with Pitch Day at the Pennovation Center. Each of the [nine cohort companies](#) presented a five-minute pitch to an enthusiastic audience, followed by questions and feedback from a panel of judges:

- Denita Henderson, Managing Director of Pennovation Works
- Glory Durham, Director of Operations at Penn Health-Tech
- Sasha Schrode, President & CEO, Serpex Medical, Partner, Robin Hood Ventures

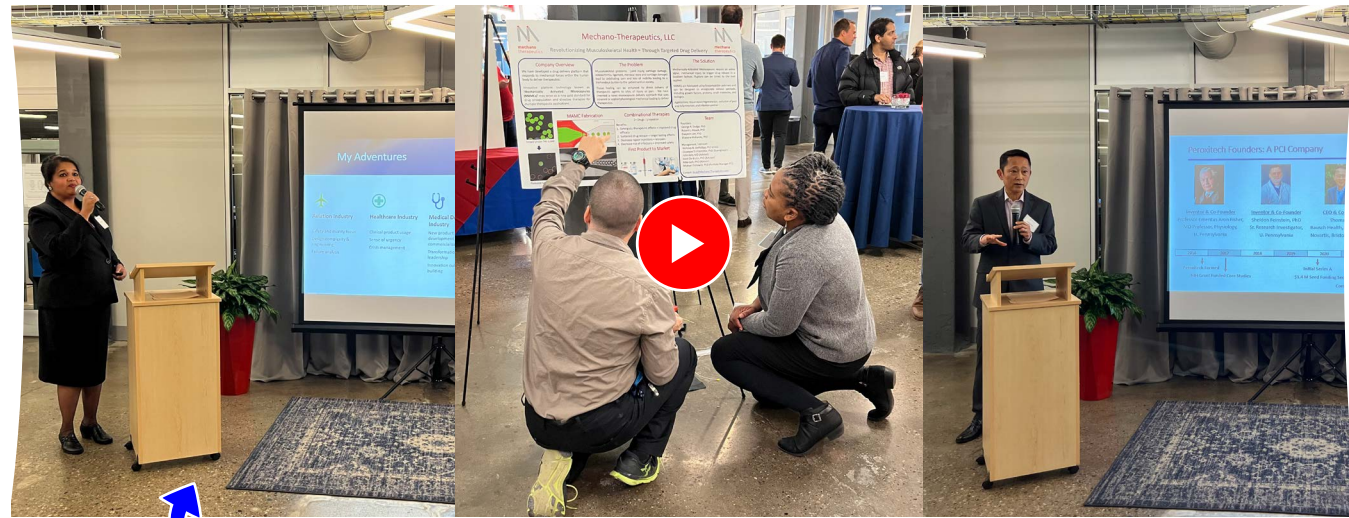
While the judges deliberated, attendees heard from Alumni speaker Sarah Beth Gleeson, Chief Operating Officer of Baleena, the 2022 overall Accelerator winner.

At the conclusion of the event, **Medicratic**, a company leveraging data and machine learning to bring speed, equity, and holistic review to medical education and admissions, **was named the overall 2023 Pennovation Accelerator Winner.**

**Pocket Scribe**, a company working on an AI-powered dictation tool for physicians to help improve workflow and fight burnout, **took home Best Pitch.** [Read more.](#)



# 4 | Signature Events & Programs



[View the PCI Ventures at Pennovation Works Showcase Recording](#)



## PCI Ventures at Pennovation Works Showcase

The PCI Ventures at Pennovation Works Showcase took place on November 2<sup>nd</sup> at the Pennovation Center, where attendees enjoyed an evening of education and networking. In celebration of its 13 years of service to the Penn community, PCI Ventures hosted a diverse group of entrepreneurs, faculty members, investors, and industry leaders. Startup companies from the PCI Ventures portfolio as well as Pennovation Works member companies participated in a poster and demo session.

During the program portion of the evening, guests heard from Kamna Giare-Patel, CEO of Cerespectus and Thomas Han, CEO of Peroxitech as they shared their startup journeys. [Read more.](#)



The PCI Ventures 2023 **CEO of the Year Award** was presented to **Eric Corkhill from Neuralert Technologies**, for the significant progress he has made with his company and for exemplifying the PCI Ventures mission.

Neuralert works to automate stroke detection using non-invasive wristbands that continuously monitor patient arm asymmetry.



## What's in the Works

“What’s in the Works” is a Pennovation Works program that helps introduce member companies to one another while fostering the opportunity to exchange ideas, resources, and the ups and downs of being part of a startup. In 2023, sessions included speakers from SAFELab, Eztia Health, Cocoa Press, and Vertiq.

## Warm Intros

Warm Intros is a series that offers friendly introductions to investors, advisors and experts from the Pennovation Works network. This program also provides established businesses assistance with funding and business plans.

A recap of select speaker sessions from the 2023 Warm Intros series are featured in the links below:

- [Roze McDevitt, Venture Capital Analyst](#) at Ben Franklin Technology Partners of Southeastern PA
- [Sally Allain, the Interim Head](#) at JLABS North East through Johnson & Johnson Innovation
- [Krish Ramadurai, Partner](#) at Harmonix Fund

## Marketing Essentials for Innovators: Speaker Series

Pennovation Works in partnership with Publicize, tech public relations firm, held a two-day speaker series on Marketing Essentials for Innovators. The event covered essential marketing aspects including digital marketing and growth, leadership and company culture, media and PR, commercialization of tech, fundraising, and innovation. Renowned industry leaders brought their wealth of experience to the event, sharing insights and best practices with attendees who joined virtually and in-person at the Pennovation Center. Throughout the event, attendees were immersed in engaging presentations, interactive panel discussions, and thought-provoking Q&A sessions. [Read more.](#)



# 5 | Conferences & Industry Events

» Pennovation Works fosters partnerships, funding opportunities, networking events, and exposure for innovators and their growing startups at industry events and conferences.

In 2023, Pennovation Works attended, and in some cases hosted, major national and local conferences such as South by SouthWest, Philly Tech Week, and the IvyTech Conference. «

## South by SouthWest (SXSW)

Philadelphia startup communities were well represented in Austin, Texas during the South by Southwest (SXSW) Interactive conference. Members of the Pennovation Works leadership team, PCI Ventures and Penn Center for Innovation attended to help promote their startup portfolios. The Penn-Wharton Austin Alumni Club also hosted a networking and pitch event, which included two recent graduates from UPenn's I-Corps accelerator. [Read more.](#)



## The Purina Pet Care Innovation Prize

The Pennovation Center hosted the Purina Pet Care Innovation Prize Pet Care Meetup event in September. Attendees enjoyed a panel discussion featuring successful pet startup entrepreneurs, investors, and industry executives. The evening also included a showcase of the most innovative pet startups in the Delaware Valley region. [Read more.](#)

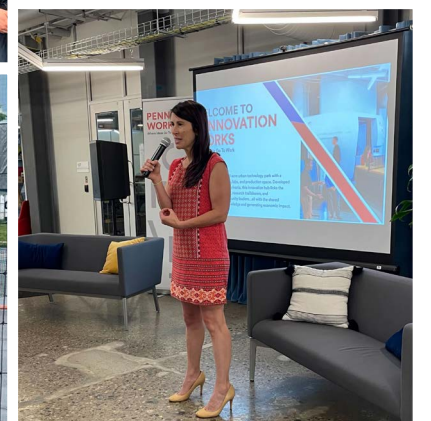
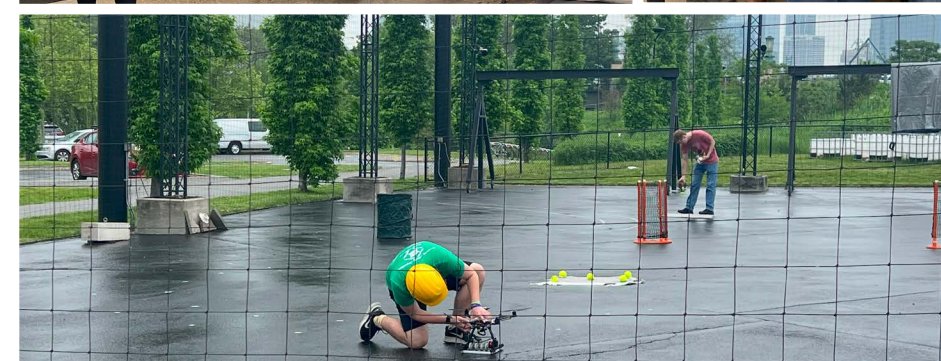
## IvyTech Conference

The IvyTech Conference brings together technology transfer professionals from all eight Ivy League schools and other distinguished universities to discuss the future of research, commercialization, and intellectual property at the university level. Day two of the conference was hosted by the Pennovation Center. IvyTech inspired many insightful conversations about innovation, technology, and collaboration across universities. [Read more.](#)



## Scenes from Philly Tech Week

The 13<sup>th</sup> Annual Philly Tech Week brought together various tech professionals to connect, network, and present their latest ideas. Pennovation Works was thrilled to participate once again this year as well as host various gatherings at the Center. The week's events included a presentation and panel discussion on the Future of Wearable Technology, the 3<sup>rd</sup> Philly Hardware Meetup, Technical.ly's Builder's Conference, and the Greater Philadelphia Inaugural Aerospace Robotics Competition. [Read more.](#)





# 6 | Real Estate Development & Recognition



» Pennovation Works continues to be a leader in innovative technology and research. As such, the ecosystem, members, and leadership received awards and recognition in 2023.

« This year, Pennovation progressed plans for expansion and activity within the ecosystem. Companies also experienced growth and expanded into larger spaces on site.

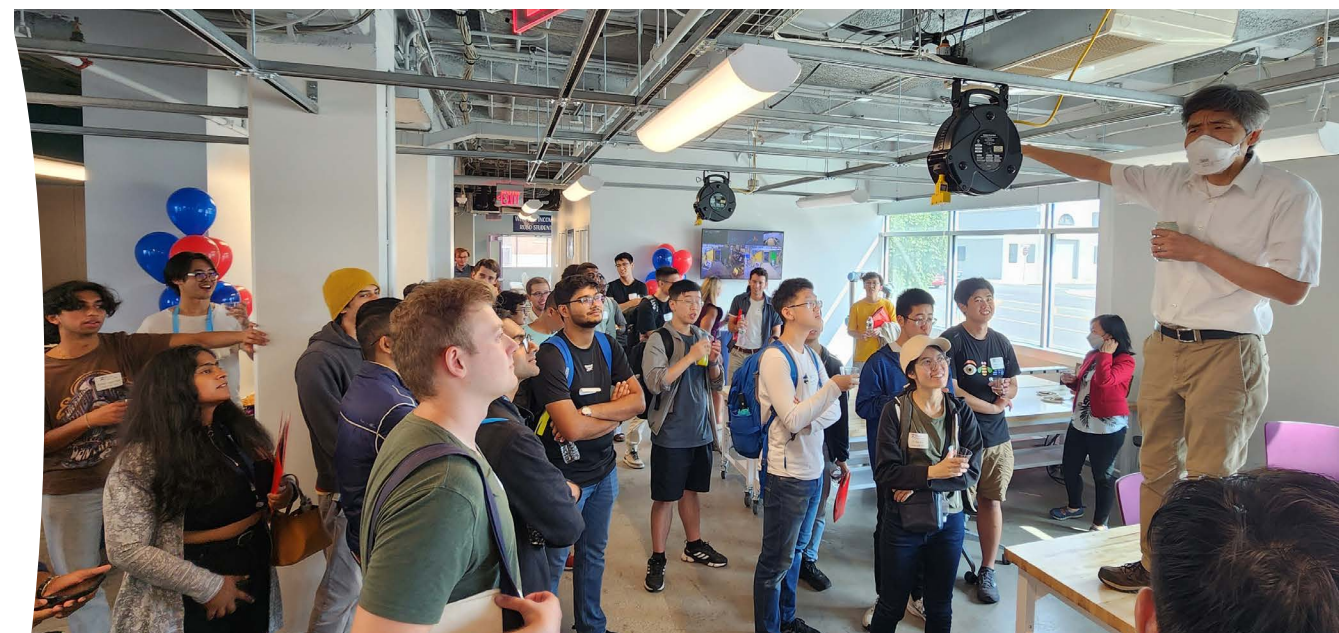
## COMPANY MOVES AND GROWTH INTO LARGER SPACES



**AlphaThera**, graduated from the Pennovation Center into a private lab space in the Pennovation Lab Building.



**Goeppert**, received funding allowing for them to acquire new equipment and move to a larger space within the Pennovation Center.



**GRASP Lab Opens New "Treehouse" Suite in Pennovation Lab Building**  
The GRASP Treehouse officially opened in August with the New Student Orientation event for incoming ROBO students, followed by the grand opening celebration. Located in Suite 250 of the Pennovation Lab Building, the Treehouse marks GRASP's third official location within the Pennovation Works ecosystem. The suite contains lab space and benches, work desks, faculty office space, a student/collaborator conference room, and a multi-purpose room. [Read more.](#)

## AWARDS & RECOGNITION

Click on each image to learn more.



*Innovators driving University City forward  
State of University City 2023*



**The RealLIST**

*2023 RealList Connectors  
Technical.ly Philly*



*Igniters Award  
PHL Inno 2023 Fire Awards*

### Expansion and Improvements

In 2023, work began on an infrastructure replacement project, upgrading and modernizing Pennovation Works to support the near and long-term development goals of the site. Utility services will be placed within the main corridor, creating a utility "loop," and a new electrical substation will be essential as the facilities continue to grow.



Progress continued on the Life Sciences research, development and manufacturing facility, with the project advancing through design development. The phased 484,000 sq. ft. state-of-the-art life science building is designed for multiple uses, and will feature a single story biomanufacturing facility, and two five-story towers featuring lab and office space.

# 7 | Community Collaborations



*In 2023, the spirit of collaboration and community at Pennovation Works continued to thrive, which solidified partnerships with the city, University, and local neighborhood. These relationships provided an opportunity to host local community events at the Center.*



*Pennovation's Youth Entrepreneurship & STEM (Y.E.S.) initiative builds and fosters relationships with local schools and youth organizations to help promote entrepreneurship and STEM careers. Some of the Y.E.S. initiatives held at the Center are featured below.*



## Grays Ferry Tree Tenders

Pennovation Works partnered with the Pennsylvania Horticultural Society's Tree Tenders program once again this year. Pennovation members, staff, and local volunteers planted over a dozen trees throughout the surrounding Grays Ferry neighborhood, and measured previously planted trees to monitor their growth and health.



## Women in Bio Event

Pennovation Works member company, Interius Biotherapeutics, co-hosted the Women in Bio event at the Pennovation Center. Pennovation was thrilled to host this evening of networking and showcase how this organization promotes careers, leadership, and entrepreneurship for all women in the life sciences field.



## FemmeHacks

The 9<sup>th</sup> annual two-day collegiate hackathon was held at the Pennovation Center again this year. FemmeHacks is powered by the University of Pennsylvania's Women in Computer Science chapter and made to empower, educate, and inspire women and non-binary folks.

## The Workshop School Pitch Day



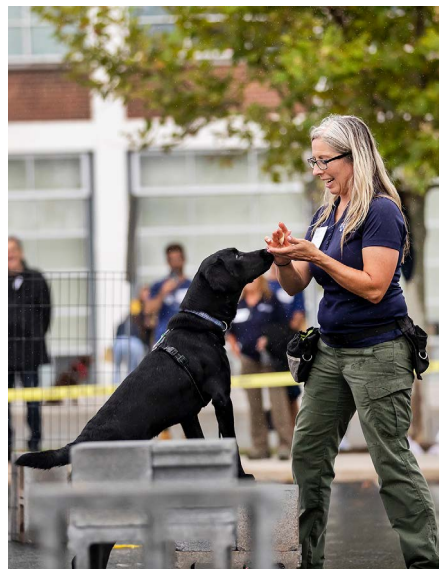
The Workshop School, an organization working to unleash the creative and intellectual potential of young people, showcased their entrepreneurial spirit and business skills at the Pennovation Center. Over the course of ten weeks, these talented 11<sup>th</sup> grade students identified unique opportunities, developed innovative products and services, targeted specific markets, and calculated startup costs and potential profits. The finalists presented their business pitches with the chance to secure \$500 in startup funding during the Workshop Tank Competition.



Participants of the Pitch Competition met with Denita Henderson, Managing Director of Pennovation Works, to review company financials and a break-even analysis. [Read more.](#)

## Netter Center for Community Partnerships: Educational Pipeline Program

The Pennovation Center hosted 18 students participating in the Educational Pipeline Program. During the day's programming, students learned about PCI Ventures and the Pennovation Works ecosystem, had the opportunity to meet Edward Bell, Lab Manager at Pennovation, viewed a demo by Ghost Robotics, and saw Penn School of Design's 3D concrete printing robot firsthand. [Read more.](#)



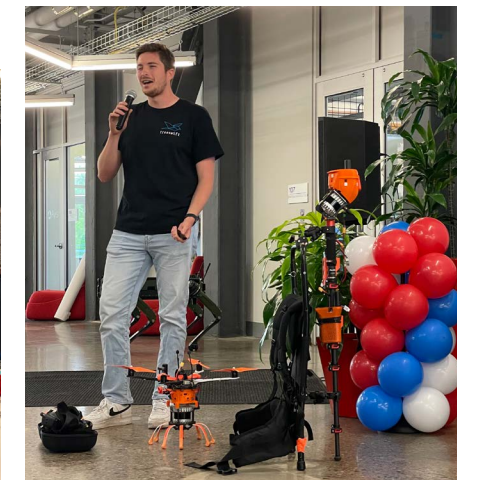
## Penn Vet Working Dog Center

**Scent Detection School Graduation and Canine Handler Academy**  
PVWDC celebrated the graduation of the Scent Detector School Class #9 in April. These teams learned the basics of scent detection and progressed through the course with harder and more difficult real world problems.

The Canine Handler Academy was once again held at Pennovation Works over the summer. This program allows middle school students to learn about canines working in search and rescue, law enforcement, and medical detection.

## Take Your Child to Work Day

Take Your Child to Work Day was an opportunity for the University of Pennsylvania employees to immerse their children in a day of learning, fun, and arts and crafts with Pennovation Works members while showing off the amazing, groundbreaking inventions blooming out of this community. Participants had the chance to view demonstrations from Ghost Robotics and Treeswift, and later went on a tour of the Center and participated in an interactive art sculpture project about innovation. [Read more.](#)



# 8 | Pennovation Perks & Pennovation in Pictures

» The expanding ecosystem of innovators, curated programming, and dynamic spaces at Pennovation Works continues to foster an environment that sparks advanced ideas.

« Pennovation community members enjoy a number of benefits including mentorship opportunities, social events, office hours, access to a network of investors and more.



## Pennovation Perks



### PCI Ventures Office Hours

The PCI Ventures (PCIV) team answers business questions on topics ranging from company formation and legal agreements to benefits and insurance during office hours. The 2023 office hours mentors (pictured above left to right) were Bhavana Mohanraj, PhD, Melisa Lopez-Anton, Ph.D., Yi-Yen Chen, PhD., and Michael Poisel, MS, MBA.

### Access to Investor Network

Pennovation Works benefits from a wide network of investors with connections ranging from members like Red and Blue Ventures to partners like Philadelphia Alliance for Capital and Technologies (PACT) and Ben Franklin Technology Partners.



Ruby Chandy, Tom Crowley, Jim Trichon, Ann Cunningham

### Mentor in Residence Program

The [Mentor-in-Residence](#) Program pairs startup companies with entrepreneurs and industry leaders who serve as informal advisors. Mentors provide advice on business strategy, market penetration and fundraising. [Read more.](#)

Click below to view more 2023 highlights





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**3401 Grays Ferry Avenue  
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