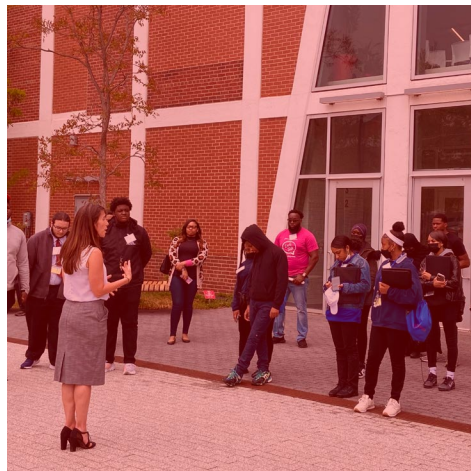
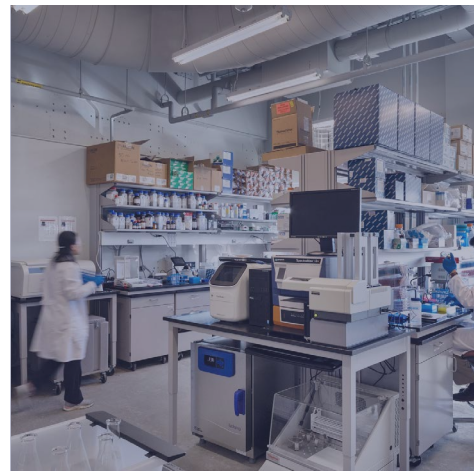


PENNOVATION WORKS

Where Ideas Go To Work



YEAR IN REVIEW
2022



“ Penovation Works is a hub for activity within the broader innovation community. The ecosystem will shape the future of life sciences and technology in Philadelphia by providing the resources needed for growing start-ups to develop and commercialize products, ventures, and services for real world application. **”**

- Denita Henderson, Managing Director

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INTRODUCTION

In 2022, Pennovation Works, like many other ecosystems and institutions, saw an increase in activity and reactivation of the space as we continued the return to normalcy from the pandemic years. In addition to the reinvigoration of the space, Pennovation Works announced new leadership and staff, programming, and most notably, advancements in the overall development of the 23-acre site.

Pennovation Works is a leading entrepreneurial hub where collaboration amongst innovators, mentors, and visitors of the ecosystem is encouraged. The technological advancements coming out of Pennovation this past year alone are impactful, and they advanced the University of Pennsylvania's efforts to grow Philadelphia's innovation ecosystem.

Pennovation Works continues to foster academic research toward commercial solutions in a variety of industries. A growing number of startups comprised of researchers, entrepreneurs, and business experts diligently work to find answers to some of the most pressing questions of our time, in the fields of healthcare, biotechnology, robotics, and artificial intelligence, among other industries.

The following pages highlight the stats, stories, and notable projects that took place in 2022. Discover why Pennovation Works continues to be *Where Ideas Go To Work*, and learn about the innovation that shaped another successful year.

A NEW CHAPTER UNFOLDS

A year of new leadership, partnership, development, and innovation



In November, President Magill toured the campus where ideas are developed and integrated into products, services, and ventures for real-world application to benefit society. During her visit, Magill met with innovators, including Strella Biotechnology, a President's Innovation Prize recipient, and Baleena, a President's Sustainability Prize recipient, as well as students and faculty from Penn Engineering's GRASP Lab.

UNIVERSITY LEADERSHIP

In October, M. Elizabeth 'Liz' Magill was inducted as University of Pennsylvania's ninth president. President Magill has since initiated a variety of programs advancing Penn's commitment to research, the entrepreneurial spirit, and ability to work across wide-ranging fields of knowledge. Magill celebrates and recognizes the importance of Penn's forward-looking and inventive spirit, and wanted to experience it firsthand with a visit to Pennovation Works.

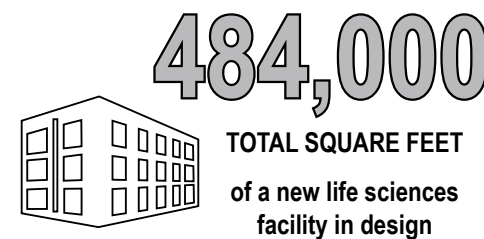
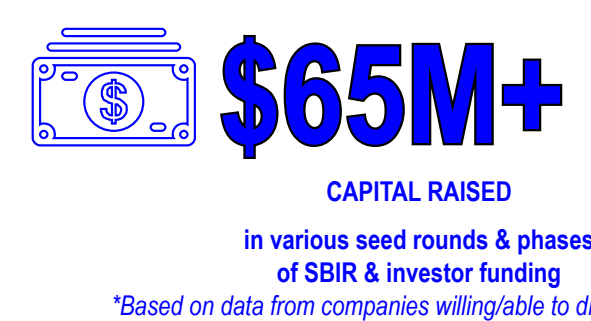
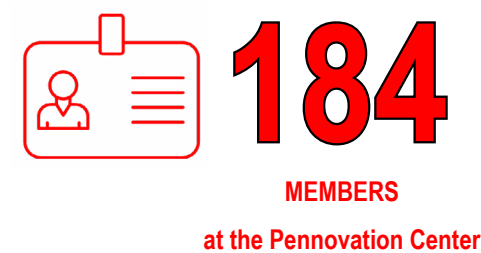
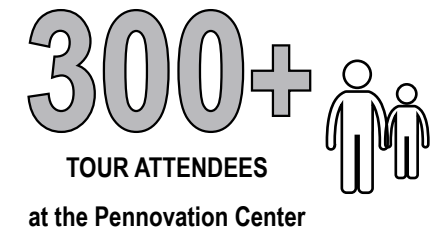
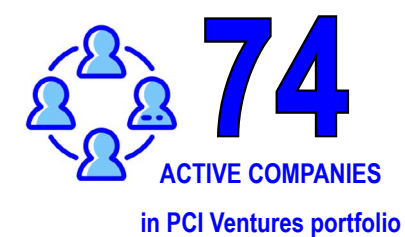
PENNOVATION WORKS LEADERSHIP

As the University welcomed new leadership, Pennovation Works also appointed its new Managing Director, Denita Henderson. Denita hit the ground running in July upon joining the team. As Managing Director, Denita implements the long-range strategic master plan, and leads business development of the site, including marketing, communications, and leasing. She also manages the strategic direction of the Pennovation Center and Lab

Building while working collaboratively with the Penn Center for Innovation (PCI), PCI Ventures, and the Office of the Vice Provost for Research on company curation and programming of the ecosystem. In addition, she monitors the development, design, construction and operations of the property.

As a strategic and innovative visionary with over twenty years of experience, Denita built her career on developing programs and partnerships that strengthen and connect diverse communities, create value, and drive meaningful change. Now, as Managing Director, Denita will focus on advancing the growing community of researchers and entrepreneurs at Pennovation Works.

BY THE NUMBERS



VISITORS AND TOURS

Pennovation Works was eager to welcome back many visitors along with potential new members in 2022. Throughout the year, tours were comprised of a variety of individuals from international delegations and ambassadors, local officials and chambers of commerce, the University community, and more.

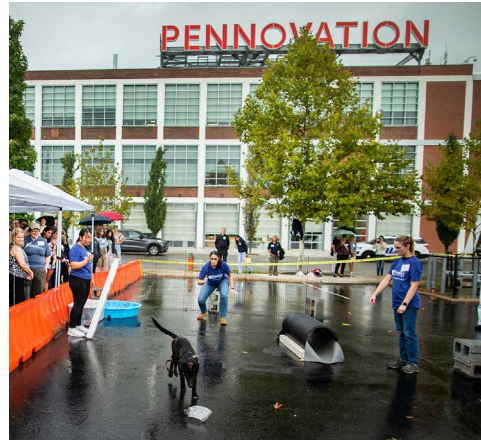
A sampling of some of the varying groups that toured the Center are listed below:

- Estonian Ambassadors Tours
- Central Asia, Mongolia, the Caucasus and Afghanistan (CAMCA) Fellowship Group
- Pennsylvania Senator Casey & Team
- Office of International Business Development at Pennsylvania Department of Community & Economic Development
- Digital Health Mission

RESEARCH ROUNDUP

Pennovation Works is home to many researchers, entrepreneurs, and students interested in transforming their creative ideas into viable commercial ventures. As a hub for innovation, Pennovation Works provides a variety of spaces and resources to assist members in advancing their research in new and exciting ways.

Click on the images below to learn more about the innovative research taking place at Pennovation Works.



10TH ANNIVERSARY OF PENN VET WORKING DOG CENTER

Nearly 300 people gathered to mark the 10th anniversary that included meet-and-greets with canine graduates, overviews of research projects, and demos of dogs at work.



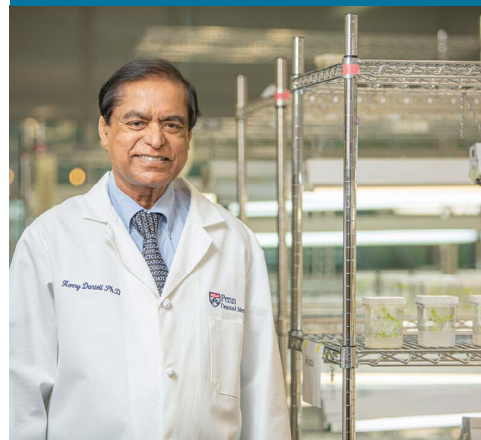
CLEAN ENERGY CONVERSIONS LAB CARBON CAPTURE STUDY

Penn Engineers are prioritizing environmental justice throughout the life cycle of carbon management by studying the fundamentals of storing captured carbon in rock waste.



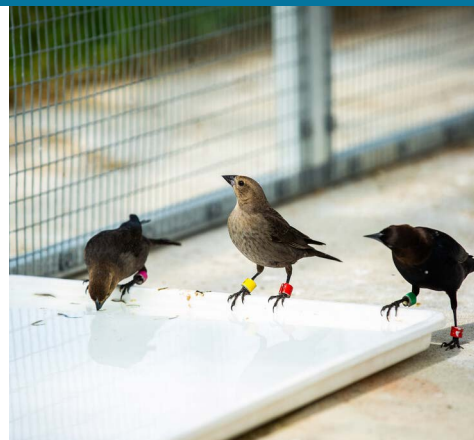
FRUIT FLY EVOLUTION RESEARCH

New findings from the Penn School of Arts & Sciences biologists show that evolution can occur in a matter of weeks in fruit flies in response to natural environmental change.



PENN DENTAL RESEARCH GREENHOUSE COVID-19 TRAPPING CHEWING GUM

Dr. Henry Daniell and researchers at Penn's School of Dental Medicine have been developing and testing a chewing gum that works to trap COVID-19 and reduce its spread.



SMART AVIARY SONGBIRD RESEARCH

Select students had the opportunity to work in neuroethologist Marc Schmidt's lab studying the neural basis of courtship behaviors in songbirds over the summer.



PENNVET WORKING DOG CENTER SCENT DETECTOR SCHOOL GRADUATION

K-9 Class #8 graduated from the from the Scent Detector School where they were taught their designated odor, how to search for it, and how to handle their dog in different environments.

COMPANY NEWS AND MILESTONES

At Pennovation Works, development often takes the shape of recognition through industry awards, publications, securing financing, or participating in industry programs and competitions. The companies mentioned below have grown exponentially this past year, and some have even experienced enough success to outgrow ecosystem altogether and branch out on their own.



The Philadelphia Business Journal reported that **Treeswift**, a startup that utilizes drones to collect forest data, recently raised a \$4.8 million seed round. Pathbreaker Ventures led the funding along with 13 other investors, bringing Treeswift's total funding to \$6.4 million. Over the past year, the company has grown tremendously adding new staff to support their growing demand. [Read more.](#)

"Penn has a very strong agriculture and robotics group. It's been great to foster the connections between the labs and Treeswift [at the Center]. This really shows that Pennovation is a hub of cutting-edge technology on both the academic and innovation ecosystem side."

- Steven Chen, Treeswift



Strella Biotechnology has seen tremendous growth in 2022, and have been featured in various publications and interviews for the advancements they are making in preventing food waste. **Earlier this year, they raised \$8 million in a Series A funding round led by Millennium New Horizons.** In December, Strella Biotechnology was featured on the CBS News Saturday Morning Show along with Rice Fruit Co. Strella discussed how they are fighting food waste and high grocery costs with their proprietary that sensors collect data to provide better produce on the shelf.



[WATCH STRELLA'S CBS MORNING SHOW INTERVIEW HERE](#)



VERTIQ

In August, IQ Motion Control rebranded their company to Vertiq. The name acknowledges the early roots of their company and its mission. The "Vertiq" name comes from their drone module product line, which was created three years ago when their flagship product, the Vertiq 2306, was launched. [Read more.](#)

COMPANY NEWS AND MILESTONES



Baleena, a company founded by three recent University of Pennsylvania graduates, has experienced continued growth and success in 2022. In the Spring of 2022, Sarah Beth Gleeson, Shoshana Weintraub, and Julia Yan, founders of Baleena, won the President's Sustainability Prize, as reported in [Penn Today](#) for their closed-loop microfiber trapping device intended for use in consumers' homes to reduce microplastic emissions at the point source - laundry. From there, Baleena participated in the Pennovation Accelerator, and was named the overall

winner based on engagement and growth during the summer program. As [Accelerator winners](#), they were awarded a \$7,000 cash prize, Pennovation Center Resident Desk membership for six months, an Accounting Startup Package sponsored by Stephano Slack, and Promotion at the PCIV at Pennovation Center Showcase. Baleena concluded the year by being named as an honoree in the [Philadelphia Business Journal's 2022 Inno Under 25](#), an initiative recognizing people 25 years and younger who are making waves in the startup ecosystem.



Goepfert was awarded a NASA SBIR contract for space-based research. As part of their contract, Goepfert studied how microgravity can benefit manufacturing and biomedicine in space. The research investigated how microgravity affects molybdenum disulfide material growth. [Read more.](#)



Spotlight on Pennovation Works Alumni



VERGE AERO



After nearly three years cultivating their business within the Pennovation Works ecosystem, Chris Franzwa, Anthony Merlino, Tony Samaritano, and Nils Thorjussen, founders of Verge Aero, packed up their drones and headed south. Verge Aero is a drone automation company specializing in the automation of drones for new markets such as drone delivery, choreography, and developing enabling technologies. They develop and manufacture everything necessary to easily create and fly sophisticated drone shows. Over the past several years, Verge Aero has worked tirelessly to

develop the technology and systems to power spectacular drone shows all over the world. They have been featured on major events ranging from President-Elect Biden's victory celebration to the Electric Daisy Carnival and most recently [America's Got Talent: Extreme](#). With their growing client base, national recognition, and need for more space to store and test their equipment, the company has naturally outgrown their space in the Pennovation Center. As a true hybrid company, Verge Aero has engineers working remotely all over the United States, allowing them to more easily move their headquarters. The company decided to move to Austin, TX as it has a warmer climate and milder winters making the flight testing of drones easier. Texas is also centrally located within the U.S. making it logistically more accessible to clients nationwide. Since their founding in late 2016, Verge Aero has seen tremendous growth as a company, and has evolved to become the leading technology provider for professional drone shows. [Read more.](#)

"...The Pennovation Center creates the perfect environment for smaller companies that are just getting started."

- Nils Thorjussen, Verge Aero



Avisi Technology, a medical device startup, founded in 2017 by Rui Jing Jiang, Brandon Kao, and Adarsh Battu, raised \$4.06 million in a private stock sale this past fall. Avisi is focused on advancing the development of VisiPlate, a nanoscale defense against blindness from glaucoma. The seed round was led by Accanto Partners, reported the Philadelphia Business Journal, and new investors participating in the round were Good Growth Capital, Mountain State Capital, LSGPA, and Gaingels. The investment funds will be used to further advance the company's clinical development of VisiPlate and support additional research and development. Avisi Technology recently became Pennovation Works Alumni when they moved their headquarters from the Pennovation Center to California. They still maintain a small presence at the Center and the University through their lab bench at Pennovation and their work at the Singh Center for Nanotechnology. [Read more about Avisi's recent funding.](#)

SIGNATURE PROGRAMS AND EVENTS

As a leader in innovative technology and research, Pennovation Works holds a variety of signature events open to local innovators, Member companies, students, press, and the public. Curated programming such as the Pennovation Accelerator and PCIV Showcase offers young startups the opportunity to receive feedback and guidance on key aspects of developing and maintaining a business while also providing exposure to the press and investors.

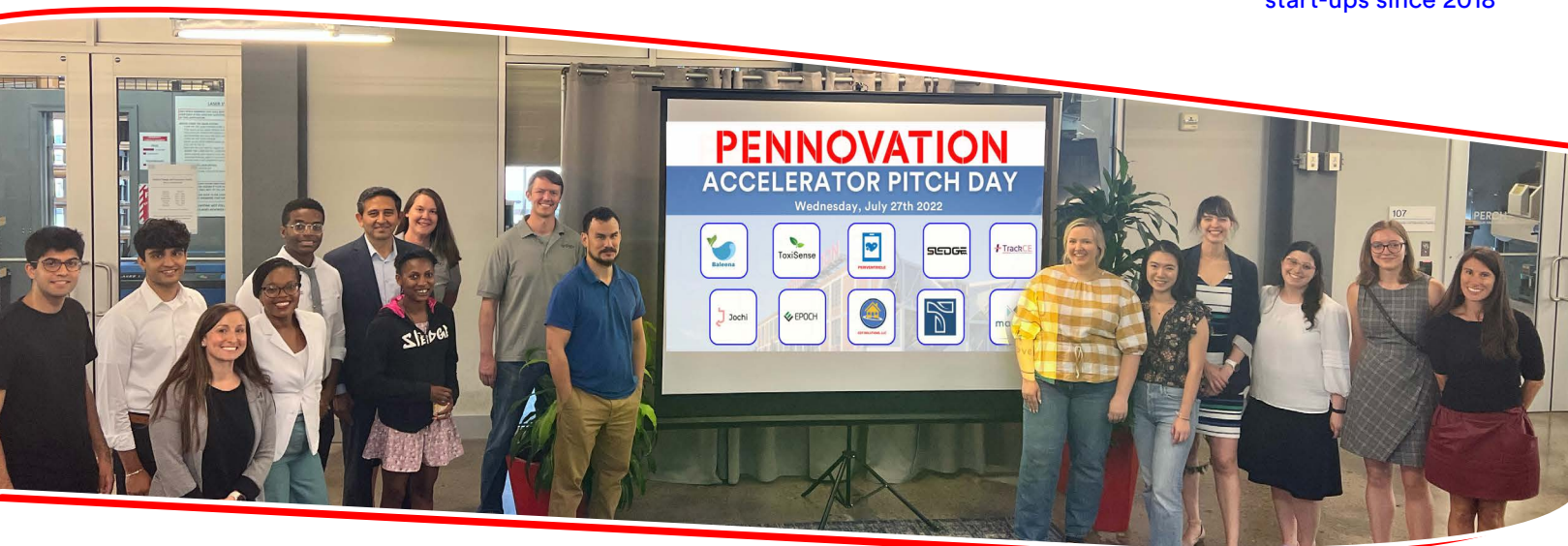
Spotlight on Pennovation Accelerator

In July, the Pennovation Accelerator held their 5th annual Pitch Day at the Pennovation Center. The culminating event for the six-week program focused on business development. Each of the ten cohort companies presented a five minute pitch to an enthusiastic audience, followed by questions from a panel of judges:

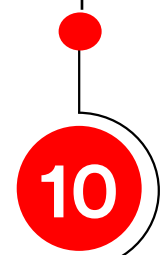
- Rick Genzer, Investment Director at Ben Franklin Technology Partners
- Katie Ruether, Executive Director of Penn Health-Tech
- Jenna Shanis, Partner at Robin Hood Ventures

At the conclusion of the ten pitches, the judges and Pennovation Accelerator review committee deliberated on the winners. In the meantime, the audience heard from Pennovation Accelerator Alumni Speaker, Josh Mastromatto, founder and CEO of REGO. REGO was named the Overall Winner at the 2021 Accelerator Virtual Pitch Day.

After the deliberation, the two winners were announced. **Baleena, a company that works to provide a low-cost microfiber trapping device used to reduce microplastic, was named the overall 2022 Pennovation Accelerator Winner.** Baleena received the award based on engagement throughout the program, growth over the six weeks, and the final pitch. **Sledge Scarves, a company that produces non-slip satin head scarves designed to protect and maintain healthy hair growth, took home Best Pitch** based on scores provided by the panel of judges. [Read more.](#)



PENNOVATION ACCELERATOR BY THE NUMBERS



What's in the Works

“What's in the Works” is a Pennovation Works monthly program that helps introduce member companies to one another while fostering the opportunity to exchange ideas, resources, and the ups and downs of being a part of a startup. Sessions include speakers from Pennovation Center community companies' such as Red & Blue Ventures, Opertech Bio, Goeppert, Avisi, and AlphaThera.

Warm Intros

In September, Pennovation Works hosted the first of a new series entitled Warm Intros. This monthly series 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. [NextFab](#), a network of membership-based maker spaces providing access to tools, technology, education, and events, kicked off the series offering resources on how to transform an idea into reality. [BioAdvance](#), who works closely with entrepreneurs to build strong companies in the mid-Atlantic region that are focused on improving human health, also presented in the series sharing information about their company and core areas of interest. [Red & Blue Ventures](#), a privately owned and operated seed and early-stage venture capital fund that invests in companies from the University of Pennsylvania ecosystem, also participated in the series. They shared insights on how to best engage with local VCs.

PCI Ventures at Pennovation Works Showcase

The PCI Ventures at Pennovation Works Showcase was hosted in October to celebrate Pennovation Works' 6th Anniversary and PCI Ventures' twelve years of service to the Penn community. The Showcase brought together a diverse group of entrepreneurs, faculty members, investors, and industry leaders for an evening of education and networking. Startup companies from the PCI Ventures portfolio and Pennovation Works member companies participated in a poster and demo session followed by networking. During the program portion of the evening, guests also heard from Gavin Kenneally, Founder and CEO of Ghost Robotics and Jerri Ann Thatcher, CEO of FloBio as they shared their startup journeys. [Read more.](#)



CONFERENCE & INDUSTRY EVENTS

Over the years, Pennovation has established a presence at a number of local and industry events and conferences. These events create partnership and funding opportunities, allow for the exchanging of ideas and networking amongst industry peers, and provide exposure for innovators and their growing startups. In 2022, Pennovation Works attended, and in some cases hosted, major national and local conferences such as South by SouthWest, Philly Tech Week, and the International Conference on Robotics and Automation (ICRA).



South by SouthWest (SXSW)

For the first time since the pandemic, members of the Pennovation Works community visited Austin, Texas for South by SouthWest (SXSW) in March. Jaime Sweet, Associate Director of Programming for Pennovation Works attended along with Michael Poisel, Executive Director of PCI Ventures and PCIV Admin Coordinator Raquel Giron. Exyn Technologies, a PCI Ventures portfolio company and Pennovation Center graduates, were selected as finalists for the Innovation Awards under the Robotics and Hardware category for ExynAI: Autonomy Level 4. [Read more](#) about the week's exciting events.

Spotlight on Philly Tech Week

In May, the 12th annual Philly Tech Week (PTW) took place, highlighting technology and innovation happening throughout the Greater Philadelphia region. The week was filled with in-person and virtual events held throughout the city organized by various companies and led by

Technical.ly, a news organization that serves a community of tech professionals. The week's events included the Penn Robotics Discussion and Showcase held at the Pennovation Center, the Philly Startup Leaders Entrepreneur Expo, and the Introduced Conference and Signature Event. Various

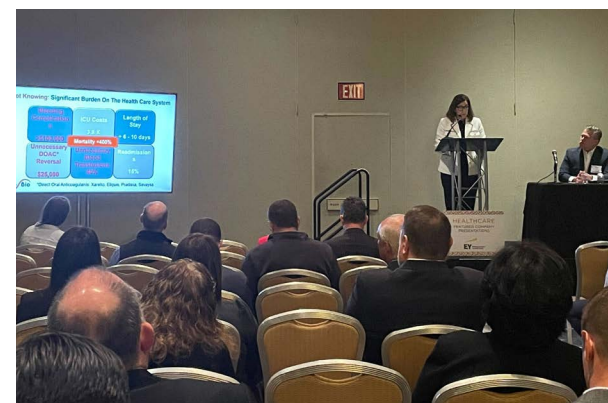
Pennovation Works companies and Penn faculty and staff participated in events throughout the week while networking and sharing ideas with the region's most fascinating entrepreneurs, technologists, and change agents. [Read more.](#)



PERCH Hosts the ICRA Conference at the Pennovation Center

In late May, PERCH hosted tours of the General Robotics, Automation, Sensing and Perception (GRASP) Laboratory for the 2022 Institute of Electrical and Electronics Engineers (IEEE) International Conference on Robotics & Automation (ICRA).

This open house was an opportunity for the GRASP Lab, to show how it fosters collaboration between students, research staff and faculty focusing on fundamental research in vision, perception, control systems, automation, and machine learning. [Read more](#) about the PERCH, GRASP Lab tours during the ICRA conference.



Philadelphia Alliance for Capital and Technologies (PACT) 2022 Mid-Atlantic Conference

PACT held the mid-Atlantic's largest capital conference in November showcasing emerging companies and facilitating meetings between entrepreneurs and investors. PACT's selection committee reviewed over 150 submissions, and Pennovation Center member companies, Flobio and Epoch Boats, were among the 47 companies chosen to be featured. Jerri Ann Thatcher, CEO of Flobio presented her pitch to a room full of healthcare investors, advisors, and key decision makers. In the technology-track room, Tom Ward, Co-Founder and CEO of Epoch Boats pitched to an audience of investors and key opinion leaders. Epoch Boats is building the first skiff boat designed with foils and electric propulsion using cutting-edge engineering and technology.

COMMUNITY COLLABORATIONS

The spirit of collaboration and community at Pennovation Works continues to thrive. In 2022, Pennovation Works welcomed collaborative relationships that not only equipped members with new technology, but also helped forge partnerships with the city, University, and local neighborhood.



Thermo Fisher Scientific Comes to Pennovation Works

In September, Thermo Fisher, a company dedicated to making the world a healthier, cleaner, and safer place through innovative technologies, hosted a happy hour on the Pennovation Plaza. In addition to networking with members, Thermo Fisher offered updated equipment to help support and advance the innovative work currently underway within the ecosystem.



NovaBiomedical Hosts Happy Hour

In October, NovaBiomedical, a global company that develops, manufactures, and sells advanced technology blood testing analyzers, held a happy hour on the Pennovation Center Plaza. Start-ups from across the campus stopped by to connect and to learn more about the featured equipment such as the BioProfile FLEX2 Machine and On-Line Sampler.

GRASP at Perch Robotics Art Residency: "Nature's Artwork"

The GRASP Lab at The School of Engineering and Applied Sciences and the Weitzman School of Design collaborated on an art residency program that brought together faculty and students to explore the use of robotic technologies in addressing contemporary social, cultural, and environmental challenges. The three artists selected were Kathleen McDermott, Nikkita Staggs, and Sam Hensley who each spent four weeks at the GRASP Lab at PERCH in the Pennovation Center. While at the Center, each developed a creative project with resources offered by PERCH and the Department of Fine Arts and Design. The residents also interacted with students across the campus through lectures and workshops some of which were held at the Center.



[WATCH NIKKITA'S PRESENTATION HERE](#)



Pennovation Center Viewing Party of Leading Life Sciences: Driving Economic Growth in Greater Philadelphia

In May, the Chamber of Commerce for Greater Philadelphia held a dynamic, in-person and virtual event, which included an update on the real estate developments impacting our region's life sciences market. The event also featured a panel discussion with representatives from various local organizations driving growth in the life sciences industry. The Pennovation Center was selected as one of the four in-person "viewing party" locations. Attendees gathered to hear Michael Borda, Ph.D., Associate Vice

Provost for Research and Executive Director of Strategic Initiatives, speak in the panel discussion as a representative for Pennovation Works. He described the resources, advising, and network that the Penn ecosystem provides to start-ups and mentioned the Penn Center for Innovation (PCI) recent success stories. Attendees at the Pennovation Center also enjoyed refreshments, an afternoon of networking with industry peers, and a guided tour of the Center. [Read more.](#)

Spotlight on PHS Tree Tenders

Pennsylvania Horticultural Society (PHS) Tree Tenders

In November, Pennovation Works members and staff joined Pennsylvania Horticultural Society (PHS) Grays Ferry Tree Tenders in planting twenty-five trees in the Grays Ferry community. Trees were planted near neighborhood homes, Stinger Square Park, Lanier Park, and Philadelphia Pentecost International Worship Center. The new trees help to increase the canopy throughout the city. The event was such a success, that Pennovation Works committed to partnering again in the spring.



COMMUNITY COLLABORATIONS



Philadelphia Youth Network's WorkReady Program

A group of eleven high school student interns toured the Pennovation Center in August featuring demos from our members, Tozuda and TreeSwift. These rising seniors were part of a program in collaboration with Philadelphia Youth Network's WorkReady and the Philadelphia Academies Inc. to expose students to innovative resources and networks helping them reach their full potential and goals. The group has also been hosted by The Business Office for the Department of Cancer Biology and the Abramson Family Cancer Research Institute.



Wharton Real Estate Disruptors Course

In October, Pennovation Works hosted students from Wharton's Real Estate Disruptors course. The afternoon was spent discussing Penn's Real Estate services, the history of and vision for Pennovation Works, and its role in Philadelphia's start-up ecosystem. First-hand experiences and entrepreneurial journeys were shared with the class by Center members from Red & Blue Ventures and Baleena, as well as Pennovation's collaborative partner, PCI Ventures.



Design to Thrive

During the four-week Design to Thrive program, a youth development initiative centered on design education and career exploration, students visited museums and participated in team-building exercises, and art workshops to learn how to act as agents of change through design. The program, which was hosted at the Pennovation Center, gathered students ages 13 to 18 four days a week for an intensive design and making studio. PennPraxis Design Fellows taught design skills and approaches, including welding with blowtorches, creating ceramic molds for porcelain bells, and building a precise topographic model. The twenty-five students who participated in the summer program that culminated in July, were also able to help with developing an advocacy plan for Stinger Square Park along with Philly Thrive and park neighbors. [Read more.](#)



Canine Handler Academy

Middle school students had the unique opportunity to be immersed in the working dog industry and learn about canines working in search and rescue, law enforcement, and medical detection. During the program, they gained additional skills in canine fitness, behavior, and positive reinforcement training. [Read more.](#)



Spotlight on JPOD



In THE COMMUNITY... Bridge to Employment

In May, the Pennovation Center and JPOD @ Philadelphia welcomed thirty-five students and their mentors from the West Philadelphia school system for an introduction to a career in life sciences. The students, all 10th graders participating in Johnson & Johnson's 3-year Bridge to Employment program, enjoyed lunch from Pitruco Pizza, and an introduction to what it's like working in a lab from Frank Leu, PhD. The students later toured the site, met young founders and scientists, and rounded out their afternoon with a Pennovation-wide Ben & Jerry's ice cream social.

AT THE PENNOVATION CENTER... JPOD 101

In February, Olivia McPherson, Program Manager of JPOD @ Philadelphia, held JLABS 101, a presentation explaining how the JPOD and Johnson & Johnson's JLABS program helps startups with life science commercialization. During the Penn Center for Innovation's Lunch and Learn series, participants were introduced to the JPOD's no-strings virtual model, the application process, and its many ecosystem benefits including the JPALS program. The JPALS program is comprised of internal experts from Johnson & Johnson who provide resident companies with a forum to explore potential areas of partnership. [Read more.](#)

PENNOVATION PERKS

The expanding ecosystem of innovators, curated programming, and dynamic spaces at Pennovation Works continues to help foster an environment that sparks new and advanced ideas. Pennovation Member companies enjoy a number of benefits including mentorship opportunities, social events, access to a network of investors and more.



PCI Ventures Office Hours

Each week during office hours, a member of the PCI Ventures (PCIV) team is available to answer business questions on topics ranging from company formation and legal agreements to benefits and insurance. PCIV office hours can help growing companies with guidance on business plans, questions about an idea, or growing a network. The 2022 office hours mentors were Bhavana Mohanraj, PhD, Portfolio Manager and Mike Dishowitz, PhD.

Mentor in Residence Program

The Mentor-in-Residence (MIR) Program pairs startup companies with accomplished entrepreneurs and industry leaders who serve as informal advisors. Mentors participate in the development of PCI Ventures portfolio companies and Pennovation Center members, providing advice on business strategy, market penetration and fundraising. Mentors also bring with them a wide network of contacts that the companies will be able to leverage. [Learn more](#) about the MIR Program and meet the mentors.

2022 Mentors



Ruby Chandy Tom Crowley Jim Trichon Ann Cunningham

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.

Business Incentives Information Session

Anne Fabry of MVM Associates and Bowers R&D hosted a hybrid information session on some excellent incentive programs in place for businesses that are creating innovative products or processes in the state of Pennsylvania. Anne discussed sellable tax credits that are offered to qualified companies that can be used to satisfy a tax liability or be converted to cash. [Watch the recorded session here.](#)



Green Space Access and Community Events at Grays Ferry Crescent

The Pennovation Works ecosystem is surrounded by ample green space that leads directly into the Grays Ferry Crescent, which connects to the Schuylkill River Trail. A variety of Center events are held outside on the plaza, and the Pennovation community joins our neighbors on the Grays Ferry Crescent for summer movie nights.

Franklin's Table Free Delivery to Pennovation Works

Franklin's Table, a food hall that is part of Shop Penn, the University's retail portfolio, offers a free lunchtime courier service to Pennovation Works members.

In addition to Franklin's Table, various food trucks are available on the Plaza twice a week offering a unique dining experience for the Pennovation community.

Networking Breakfasts and Lunches

Throughout the year, the Pennovation Center hosted monthly breakfasts and lunches helping to foster connections among members and encouraging them to exchange ideas, business plans, products, and research.

The August breakfast featured homemade pancakes and the September breakfast hosted Lokal Artisan Foods, a Philadelphia-based company known for their innovative French Toast Bites.

The "Taco to Us" lunch, held in July at the Pennovation Center, was a huge success. Members of the Pennovation Accelerator cohort enjoyed an afternoon of networking and mingling with Center members, games, and of course tacos.



Yoga, Mindfulness & Nature Walking

Center members were able to get their "Zen on" during a Yoga session led by Joelle Tolifero, Founder & CEO of Your Care Collective. The team and members were also led on a peaceful nature walk on the trails around the campus.

Pumpkin Painting

In October, Pennovation Works celebrated Halloween with a "Pumpkin Paint N Sip" in partnership with PERCH. The event was complete with Halloween-themed treats, games and of course a pumpkin painting contest, with the spookiest pumpkin being awarded the overall winner.



Holiday Celebrations

As part of the holiday celebrations at the Pennovation Center, Members gathered together to share food, laughs, and of course ideas at the annual Friendsgiving. In December, Pennovation's first Holiday Festivus took place. Pennovation members, PERCH, and family and friends enjoyed an afternoon of cookie decorating, macramé, hot cocoa, and Giant Jenga.

Spotlight on Yappy Hour

The Canine Handler Academy wrapped up its 2022 cohort in the last week of July, just in time to join "Yappy Hour" with Penn Vet Working Dog Center (PVWDC), Pennovation Works members, and some furry friends. Cohort members from the Canine Handler Academy showed off some of their skills acquired from their summer program with the PVWDC. During Yappy Hour, Pennovation Works members mingled on the plaza, met some of the working dogs, learned about volunteer and foster opportunities with PVWDC, and some even brought their own pets.



REAL ESTATE DEVELOPMENT

As the master plan for the 23-acre site advances, the Pennovation Works ecosystem continues to be an impetus for change in innovative technology and research. This past year, Pennovation has progressed plans for tremendous expansion and activity within the ecosystem. The campus announced a new life sciences development, welcomed new tenants at the lab building, and implemented forward-thinking and sustainable modes of transportation.



Penn's Clean Energy Conversions Lab

Research at the Kleinman Center affiliated Clean Energy Conversions Lab is focused on minimizing the environmental and climate impacts of our dependence on fossil fuels. From exploring materials to best remove CO2 from the air, to coal mine remediation projects, the Clean Conversions Lab is busy working on cutting-edge energy research. Jennifer Wilcox was originally appointed to lead the research, but has since been on a leave of absence as she serves as the principal deputy assistant secretary in the Office of Fossil Energy and Carbon Management at the Department of Energy under President Biden's administration. In October, the research team, currently led by Professor Peter Psarras moved into their new space within the Pennovation Lab. [Read more](#) about the new space and their research.

Penn Transit Adds Electric Vehicles and Charging Stations

In October, Penn Transit announced the inclusion of the first full-size electric vehicles to its fleet. Four new vans will primarily accommodate various transit routes including the Pennovation Works Shuttle. As fully electric passenger vans are not yet widely available for purchase, electric-powered cargo vans were retrofitted for passenger service. Fleet electrification decreases carbon emissions reducing Penn's carbon footprint. Pennovation Works has been an integral part of this sustainable advancement by installing electrical vehicle chargers on campus.



Interius BioTherapeutics Flourishes in the Pennovation Lab

Last year, Interius BioTherapeutics, signed a 17,743 sq. ft. lease advancing cell and gene therapy research at the Pennovation Works innovation ecosystem. The Pennovation Lab is a space designed for companies who are graduating from the incubator phase having secured early-stage funding and need a state-of-the-art flexible lab facility to help advance their research. Interius, co-founded by Saar Gill, M.D., Ph.D., Associate Professor of Medicine at the University of Pennsylvania, is continuing to develop new ways to engineer cells inside the human body using next-generation delivery technologies. Interius has experienced continued growth over the past year since joining the lab, and have occupied the 3rd floor of the building and are now anticipating to expand to the 4th floor which is currently under construction.



Longfellow Life Sciences Research, Development and Manufacturing Facility

In June, Longfellow Real Estate Partners announced their strategic partnership with the University of Pennsylvania to plan and develop a ground-up, state-of-the-art life sciences facility inside the Pennovation Works ecosystem.

This partnership marks the first development in the Philadelphia market for Longfellow Real Estate Partners, the largest privately owned commercial developer of life science buildings in the country with offices in Boston/Cambridge, New York City, San Diego, San Francisco Bay Area, the Research Triangle of North Carolina.

The newest development will be a 484,000 square foot facility comprised of research and development and biomanufacturing spaces. The facility will have rooftop terraces with views of Philadelphia's skyline and Penn's campus, as well as access to amenities of the entire Pennovation Works. The new development includes flexible lab/office space allowing for tenants to customize to meet their needs. The project design includes two adjoining six-story buildings, and Phase I is scheduled for completion in late 2025. [Read more.](#)

"The pace of innovation coming out of Penn is astounding. We have brilliant scientists generating a record number of new FDA approvals in the life sciences. We also have the policies in technology transfer to align with industry to bring new life-saving therapies and treatments to market. And, with Pennovation Works, we operate a campus where these ideas can be nurtured into companies. Attracting Longfellow to Philadelphia and Pennovation is a vote of confidence in Penn's efforts to grow Philadelphia's innovation ecosystem and enable the Lower Schuylkill master plan to flourish."

*- Craig R. Carnaroli, Senior Executive Vice President
University of Pennsylvania*

PENNOVATION WORKS

Where Ideas Go To Work



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