



innovation
park
at PENN STATE

JOURNEYS

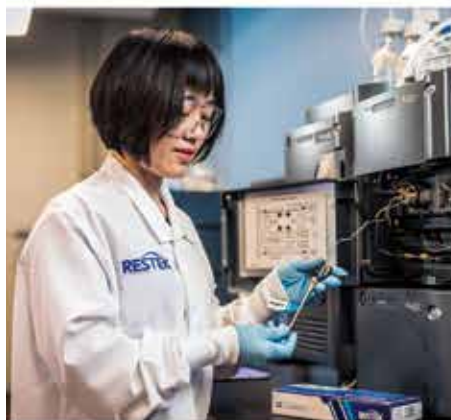
You pick the path, we support your journey



THRIVING IN PHILIPSBURG: INNOVATION MEETS AFFORDABILITY AND A STRONG WORKFORCE

COURTESY DIAMOND BACK INSTAGRAM @DIAMONDBACKCOVERS

CARBON SCIENCE CENTRE FOR EXCELLENCE GRAND OPENING SET FOR NOVEMBER!



**RESTEK COURSES COMING
TO PENN STATE**
PAGE 4



**FROM CONCEPT TO
COMMERCIALIZATION**
PAGE 7



**WOMEN-OWNED
BUSINESSES**
PAGE 9



**STATE COLLEGE TO HOST
TOWN & GOWN CONFERENCE**
PAGE 13

TECH THRIVES IN PHILIPSBURG

Spend any amount of time learning about business development in Centre County, and you'll hear the word "incubator." It's a good word, and apt in its description of creating the environment and support needed for entrepreneurs to emerge strong and successful. But, in working with businesses thriving a mere half-hour outside of State College in Philipsburg, another word came to mind: greenhouse. This small town is the perfect example of the greenhouse effect of Penn State's world-class research and Innovation Park's resources and knowledge base. Philipsburg has become a home to businesses that are making the news and, most importantly, loving it there.

Why It's a Hot Location

The first thing most business owners in the area mention is cost; it's cheaper to build dream facilities, to rent space, to launch new brands and to expand. But, fast on the heels of affordability comes something else just as important: the area is filled with people who love their work. There's a deep, revered history of industry, textiles and brain meets brawn. As Josh Helke of Organic Climbing says, "There are few places in our world where it's this clean and affordable to work, with instant access to the great outdoors." The Moshannon Valley Economic Development Partnership, at the direction of Stan LaFuria, has created a welcoming culture and infrastructure for early stage companies.

DiamondBack Truck Covers: Pivot Pays Off

For most companies, brand loyalty is the result of savvy marketing and a huge advertising budget. However, DiamondBack earned their dedicated customer base by delivering an exceptional product. Their Instagram account is filled with photos of happy truck owners showing off their indestructible covers around the globe. Their bottom line has grown 29 percent for five years running and that growth came from the unlikeliest of sources: the 2008 recession.

The company was founded long before 2008. Matt Chverchko and Ethan Wendle were Penn State engineering students when the idea for the company was born from a class project. It eventually grew out of their dorm rooms into a small business based in Philipsburg.

For several years, the business grew steadily, based on their original concept of a truck cover that would seal and lock the bed of a pickup truck, while also providing the ability to haul on top of the truck. By May 2003, DiamondBack was incorporated and they started to redesign and refine their product. They followed a business model used by almost every other manufacturer in the industry: develop a large customer base of warehouse distributors, who would then, in turn, sell and service the retail customer at locations around the United States and in Canada. In 2008, they secured a relationship with General Motors to provide the locking truck cover for the HUMMER pickup truck, along with other relationships to distribute the product nationally for use on commercial fleet vehicles. Things were looking good.

Then the 2008 recession hit. Truck sales across the United States fell by 50 percent and the industry model disintegrated. If necessity is the mother of invention, then crisis is the hothouse for disruptive innovation. Founders Matt and Ethan knew they had to change the way they distributed their product to their customers, so they pivoted away from the standard model and started selling their covers directly to consumers. The change has paid back handsomely.

Core Values, Core Customers

Today, more than 70 percent of their sales are directly to consumers. Their core values—love those around you, make a difference, be reliable and honest, work smarter, be adventurous and creative and never quit 'til the job is done—resonate with the men and women who use the truck beds in their day-to-day lives. Their Instagram account is a love letter from those people. Kids sit on top of the cover to watch fireworks. An ATV perches securely on top of the unbreakable cover for a drive under the stars. A load of hay on top of a DiamondBack on a Toyota Tundra feeds a flock of chickens. "One time a customer who was stuck in mud while off-road in Canada used



Courtesy Diamond Back Instagram @diamondbackcovers.

one of his DiamondBack panels to shove under his tire for traction," Ethan says. "After he got out, he slid the panel back on the cover and relocked it down, good as new."

By cutting out the middleman distributors and selling directly to consumers, the company has been able to pay higher-than-average wages to their employees. Best of all, it's made local manufacturing not only feasible, but profitable. "Our products are large and require a ton of variability for each truck make and model," Ethan says. "This makes importing very difficult unless the volume is massive. We've been able to afford manufacturing locally by completely switching the script and selling direct to our consumers. We believe this model will play a major role in successful manufacturing in the United States."

Starting and Staying in Centre County

As their growth rockets, some things will always stay the same: They are firmly planted in Centre County and have been supported every step of the way. In 2004, DiamondBack received a monetary investment from Ben Franklin Technology Partners of around \$140,000. The loan was instrumental in their success. Along with the monetary investment, they were given invaluable assistance by the Ben Franklin team including John Vidmar, Roger Dagen, Sherry Davidson and Teresa Dugan. They credit the assistance in planning, marketing, accounting and HR in helping them successfully navigate the rapid growth of the company.

In addition to Ben Franklin, they received support and consulting from the Innovative Manufacturers' Center, as well as the Moshannon Valley Economic Development Partnership. "We were quite blessed to start our business in Centre County, with so much support around us," Ethan says.

After operating out of the Moshannon Valley Enterprise Center for more than a decade, they moved to a 40,000-square-foot, state-of-the-art facility in the Moshannon Valley Regional Business Park. Every detail of the new facility was engineered for maximum effectiveness, from the 30-foot ceilings above production lines to the large windows that let in natural light to the break room and kitchen space, which employees can sign out for personal parties and get-togethers. "The decision to build our own facility was partially motivated by growth and partially motivated by our desire to provide our employees with a completely different work environment experience," Ethan says.

So, what's next for DiamondBack? It's on an incredible growth run right now. It's been listed on the Inc 5000 list of fastest growing U.S.

companies for the past six years running and they are recording their strongest growth ever in 2017 and 2018. They now have 70 employees and that number is set to increase to meet demand.

They are on a mission to create one of the best manufacturing companies in Pennsylvania, one that employees love to work for and customers love to buy from. And, if the trending hashtag #diamondbackready is any indication, they are already well on their way to meeting that goal.

Nittany Laser Technologies: Pushing the Limits

Nittany Laser Technologies has a leg up on its competitors. They mean it when they say they are pushing the limits of laser technology—the only other two companies in the world that are close to catching up are located in Germany. “And our tools are more robust than the ones they offer,” Drew Nissly, president and founder says. “[Our tools] work at a higher power, so they are faster and more reliable.”

Custom Innovation

With the founder’s roots in Penn State’s Applied Research Lab, Nittany Laser was founded in 2012 to provide a wide range of laser processing tools and services, from custom-designed laser cladding tools and turn-key systems to in-house laser cladding, welding and machining. For the past six years, they have developed tools for others to use in industries like aerospace, mining, marine equipment, rail transport and defense.

Their expertise shines in places like the oil and gas industry, where they manufacture custom tools for welding and cladding, creating the capability to weld inside hard-to-reach places like gears, valve components, drilling bits and engine cylinders.

In one recent project, they worked with a company that was laying pipe across the country. They were able to engineer a welding tool that could weld pipeline four inches thick. Due to the high-powered nature of their tools, they were able to do it faster than standard welding and provide a better weld at the end.

They also just developed a tool that welds in water to perform underwater repairs to nuclear facilities.

Affordability and Opportunity

Their location on Enterprise Drive in Philipsburg fits their unique needs. “I live in State College,” Drew says, “but it’s a lot more economical to have my shop out here—rent is about one-fifth of the price I would be paying in town. We also have specific electrical requirements. Nittany Laser needs a lot of electricity. This is a good facility that fits our needs here. Since we have customers from all over the world, our location could be anywhere, but it’s great to have the proximity to State College coupled with the affordability of Philipsburg.”

What can you look forward to seeing next from Nittany Laser Technologies? They are currently working on the ability to provide in-house welding services, so that parts can be sent directly to their facility to be welded or clad.

When asked about his favorite part of living and working in Happy Valley, he pointed out that it was the best of both worlds. “It’s a small town that has lots of diversity because of the university, but without the headaches of a big city.”



Nittany Laser was founded in 2012 to provide a wide range of laser processing tools and services.

Organic Climbing: From Basement to the World

In 2004, Josh Helke started Organic Climbing, a business that makes functional, durable climbing gear. When his wife received a job as a professor at Penn State, the business moved with them to Central Pennsylvania.

“We bought a house with a big basement,” Josh says. “I thought, worst case, I could do some of my work from home if I couldn’t find a facility.”

Solar Pioneer

But he found what he was looking for in Philipsburg. He used the Moshannon Valley Economic Development Regional Business Park Multi-Tenant Building as a base of operations for several years before buying land and starting work on a new building. With help from a PIDA—a Pennsylvania Industrial Development Authority loan—their new building will feature a roof covered in solar panels, making it the first fully solar-powered sewing factory in the world. (In fact, the only reason it’ll be hooked up to the grid will be to sell power back to the electric supply company.)

Organic Climbing and Philipsburg are a good match. “We love it here,” Josh says, big words from someone whose outdoor affinities stretch to Wyoming and Colorado. “It would cost twice as much to have a similar lifestyle with instant access to the outdoors anywhere else.”

He also points to the people who live in Philipsburg for making it a great place to base a business. “It’s a great location in terms of a skilled work force. There is a big textile history here. These people have it in their blood.” His company came in just as some other industries were winding down in the area, freeing up a workforce with vast experience. Because of the low cost of operations, his company can offer a good living wage and also sell high-quality products at a good, mid-range price. “It would be harder to be a good employer somewhere else,” he says.

Growing by Reputation

Organic Climbing’s workforce has grown 20 percent each year—reaching a total of 18 employees—and Josh anticipates that with their new, expanded space, they will be able to employ 25.

Currently, Organic Climbing is the highest-rated climbing company in their range, editor’s choice of *Climb Magazine* in the United Kingdom and the climbing gear of choice in Japan. That’s right, Japan. “We sell a lot by word of mouth,” Josh says. “When we sell a product, we’ll put a pin in a map, and then wait. Pretty soon there will be pins radiating out from that first pin when people see and feel the gear for themselves and can’t help but want some for themselves.” In 2004, that happened in Japan. The first order came and sales quickly spiked. Today, climbers in Japan are their largest international buyers, accounting for 62 percent of international sales.

So what’s next for Organic Climbing? Two sister projects are sprouting up due to Centre County’s greenhouse effect. Nittany Mountain Works takes the quality, durability and usefulness of Organic Climbing’s sewn goods and makes stuff for the rest of us outdoorspeople, with bags for biking, hunting, kayaking and just *living*. It’s “the quality you remember from when you were a kid, for all the stuff you want to do,” Josh says. “It’s hand-made in the United States without hipster prices or political association.”

Another project in the works is an indoor climbing wall project that will give Happy Valley climbers their bouldering fix without leaving home.

“When the recession hit in 2008, we weren’t sure what the future would hold, or where my wife would find a faculty position. Moving to Centre County was the best accident ever,” Josh says. “It’s great to be a part of this progressive economy that’s fast becoming a leader in the world.” ■

CHROMATOGRAPHY COURSES COMING TO PENN STATE WORLD CAMPUS IN CONJUNCTION WITH RESTEK

Started in the Centre County Business Incubation Program, Restek is a world leader in the development and manufacturing of chromatography columns and accessories. Now the company is bringing its chromatography expertise to the world—or rather, to the Penn State World Campus, headquartered in Innovation Park.

Beginning Spring 2019, Penn State World Campus, in conjunction with Restek, will for the first time offer three courses in liquid chromatography—the technique in analytical chemistry used to separate, identify and quantify components of a mixture.

“This course is a first-of-its-kind collaborative effort between Restek and Dan Sykes of the Penn State Department of Chemistry,”

said Frances Carroll, a business development manager at Restek and co-developer of the new chromatography courses. “Dan was my graduate school advisor and I’ve been lucky enough to return to my alma mater to guest lecture some of his analytical chemistry courses in chromatography. The fit seemed natural to expand and co-develop this course.”

The three new courses will include Chem 810, an Introduction to Liquid Chromatography, geared toward a novice user; Chem 811, which will cover Practical Liquid Chromatography, aimed at mid-level chemists and technicians with some prior knowledge and experience looking to expand upon their current knowledge; and Chem 812, Advanced Liquid Chromatography, which will provide the most complex course work and information.

“The courses are all designed to increase student understanding of both the analytical instrument used in the laboratory and the principles underlying the measurements,” explained Carroll.

“The courses are all designed to increase student understanding of both the analytical instrument used in the laboratory and the principles underlying the measurements,” explained Carroll.

A Growing Demand for Expertise

Presently, chromatography is widely used—and in increasing demand—by analysts around the



Restek scientists are world leaders in chromatography.

world in environmental, clinical, pharmaceutical and food sectors, among others. With the help of chromatography, individuals are able to monitor the quality of air, water, soil, foods, pharmaceuticals, chemical and petroleum products—which is vital to these industries.

“Both Restek and PSU realized that there is a significant need for chromatography education for students and for the companies we support,” said Carroll, who works out of Restek’s 128,000 square-foot, state-of-the-art facility located in Bellefonte, Pennsylvania.

It’s there, less than 10 miles from Penn State’s University Park Campus, that Restek leads the way in providing chromatography solutions and in educating others on the use of chromatography.

“With our shared goals of educating young professionals to progress the science, and our shared proximity, the fit just seemed right to combine our expertise!” said Carroll.

“By collaborating with PSU, we can combine our unique expertise to help young professionals in many industries use chromatography to help expand their science, thus benefiting us all.”

As everyday users of and educators on chromatography already, the team at Restek felt it was a natural fit to also make that expertise available to others through the Penn State World Campus, and there are few better co-developers for such a course than the chemists at Restek.

“We have an entire building of people who are passionate about chromatography, eager to share knowledge and to educate the next generation of chromatographers,” concluded Carroll. “By collaborating with PSU, we can combine our unique expertise to help young professionals in many industries use chromatography to help expand their science, thus benefiting us all.”

To learn more about Penn State World Campus, visit worldcampus.psu.edu. For more information on Restek and the unique expertise that the company will bring to the new courses, please visit restek.com. ■



GET OUT AND HANG: HOW PASSION TURNED TO PROFIT FOR OUTDOOR ENTHUSIAST

Expert hammock camper Thom “Dutch” Ressler visited Innovation Park from Lancaster, Pennsylvania, Aug. 23, to share his unique path to creating minimalist hiking and camping gear for hammock enthusiasts. Dutch spoke to incubator company founders about how he turned his love of backpacking and hammock camping into a \$1.6 million outdoor gear company in just seven years. He also provided a one-hour technical session that was open to the public on the exceptional comfort of a diagonal “flat lay” provided by a quality hammock and sleep system.

In 2003, 35-year old electrician Dutch thru-hiked all 2,200 miles of the Appalachian Trail from Georgia to Mount Katahdin, Maine, and he brought along a hammock. His journey taught him how to take a minimalist approach to hiking gear and life in general.

In 2003, 35-year old electrician Dutch thru-hiked all 2,200 miles of the Appalachian Trail from Georgia to Mount Katahdin, Maine, and he brought along a hammock. His journey taught him how to take a minimalist approach to hiking gear and to life in general.

After realizing most commercial vendors don’t share his passion for stripping away unnecessary gear, he started making his own. Dutch now offers hammocks, backpacks, quilts and hardware for the hammock community at www.dutchwaregear.com.



Dutch offers hammocks, backpacks, quilts and hardware.



Dutch’s creations are versatile and lightweight.

Creating hardware for hammocks has been Dutch’s true passion. He began manufacturing the Dutch Clip, which he invented to connect the webbing suspension around the tree. Next was the Dutch Biner, a 10-gram carabiner that connects the whoopie sling, a light and adjustable suspension, to a steel loop, followed by the Dutch Flyz, a no-knot, quick-connection device for hammock tarps.

Dutch’s most recent hammock creation is the full-featured DutchWare Chameleon Hammock, which is a versatile and modular lightweight hammock that adjusts to any location.

The Chameleon Hammock’s production and development was supported through Kickstarter by more than 730 backers, raising more than \$190,000, exceeding its original \$22,500 goal. The extra funding allowed DutchWare to create accessories and a hex tarp for the hammock, as well as a wide-body version of the Chameleon Hammock.

The seven-year old, Lancaster-based “cottage company” now inventories over 2,000 part numbers, employs 17 people and direct sells to over 13,000 customers.

The seven-year old, Lancaster-based “cottage company” now inventories over 2,000 part numbers, employs 17 people and direct sells to over 13,000 customers. While taking customer calls, designing new gear and returning emails, Dutch signs each customer invoice personally.

Incubator company founders enjoyed hearing Dutch’s story and took inspiration from what material science has done to create an explosion of new hammock and backpacking equipment and cordage products.

The session was part of Innovation Park’s coolBLUE Rainmaker



CARBON SCIENCE CENTRE OF EXCELLENCE 2018 GRAND OPENING

Over the last few years, Morgan Advanced Materials has been making preparations for the opening of its new Carbon Science Centre of Excellence, located in Innovation Park. Morgan is making a multi-million-dollar investment aimed at establishing a truly world-class research facility. Nine highly skilled materials research positions have been filled to date with individuals from all around the world. Approximately 16 additional positions will be filled over the next two years.

With the facilities completed, the grand opening of the Carbon Science Centre of Excellence will take place Nov. 15, 2018.

The partnership with Penn State combines resources and experience from both sides, creating a synergy that will enable significant progress in the development of carbon materials for a range of sectors and applications. The Carbon Science Centre of Excellence, which is the third of its kind for Morgan globally and the first in North America, plays a vital role in the further development of Morgan's core competencies in the areas of materials and application engineering. Over the longer term, the findings generated by the center will support Morgan in its mission to deliver world class materials science solutions that meet the engineering challenges of customers worldwide safely and efficiently.

"The welcoming of Morgan Advanced Materials as the first strategic resident in the facility highlights the continuing intellectual and physical collaboration of talented individuals from around

the globe with Penn State to invent the next generation of materials for worldwide use. Morgan's commitment has already catalyzed other materials companies to consider a location in the Park," said Dan Leri, director, Innovation Park, at last year's groundbreaking.

"Since the launch of our partnership with Penn State for our Carbon Science Centre of Excellence, we have made great progress in building collaborative links between the two organizations."

"Since the launch of our partnership with Penn State for our Carbon Science Centre of Excellence, we have made great progress in building collaborative links between the two organizations," added Mike Murray, CTO, Morgan Advanced Materials. "We have already started a number of initial projects aimed at developing our deep understanding of materials science, which has already generated some very promising results. I'm very pleased [with] how our plans for the new building have been progressing."

The Carbon Science Centre of Excellence is located at 310 Innovation Boulevard. ■



In the 26 years since its founding, the Technology Center at Innovation Park has helped hundreds of budding businesses.

THE TECHNOLOGY CENTER INCUBATOR AT INNOVATION PARK

TAKING STARTUPS FROM CONCEPT TO COMMERCIALIZATION

Growing a business and becoming a successful entrepreneur takes far more than a good idea. It takes resources, knowledge and wide-spread expertise beyond what one individual may possess. That's where an incubation program comes in.

According to the National Business Incubation Association, three out of five startups fail within their first five years if not tapped in to an incubator program. Likewise, four out of five new businesses that start in an incubator program succeed within the first five years.

It was that intrinsic value proposition that led the founding of the Technology Center Incubator at Innovation Park in 1992, in a collaboration between the Chamber of Business and Industry of Centre County and Penn State University.

Now, in the 26 years since its founding, the Technology Center at Innovation Park has helped to give hundreds of budding businesses the support, guidance and tools they need to succeed, with the physical incubation facility serving as a space where like-minded people can learn from and support one another, and the available incubation programs helping startups and emerging businesses build a solid foundation.

“We realize young companies have limited bandwidth or they have limited domain expertise, so we try to fill in the gaps regardless of the situation,” said Scott Johnson, who oversees the Technology Center Incubator and serves as the entrepreneur in residence for the Ben Franklin Incubator Program at Innovation Park. “We offer programs and assistance to address the early stage of a company’s life cycle.”

Startup Acceleration

For many companies at the Technology Center Incubator, part of the early stage is becoming a part of the Ben Franklin TechCelerator Program. The 8-to-10-week program offers one-on-one mentoring sessions and weekly business startup accelerators with topics including market research and strategic planning; customer development, segments and relationships; financials and operating costs; funding options; basic legal; and more.

“In addition to the salient points we try to impart each week, we also have a guest speaker come in every week,” said Bob Dornich, director and entrepreneur coach for the BF TechCelerator Program. “We go

Continued on next page



over legal formation; we have marketers come in; we have financial people come in and help do forecasting. There are all of these different elements that really end up creating a business. All of the building blocks of what a business organization is are the things that we go through.”

“Then, on top of the weekly classes, we have one-on-one meetings with each company every week because every company is so different,” continued Dornich. “We always ask them more specifically about what they need. Do they want to understand more about finance? Do they need to understand more about marketing? What are the challenges that they’re coming up with? Who did they meet with this week and what did they tell them? It’s really a very robust program. I’m personally so proud to be a part of it because it’s an outstanding organization. And the things that we impart—and what the companies and individuals get out of it—is just invaluable.”

“The TechCelerator is incredibly useful at helping companies or pre-companies crystalize their ideas on what their business opportunity really is, and whether or not the business is viable,” said Johnson, an entrepreneur himself for 30 years. “Maybe one of the biggest benefits that comes out of that program, I think, is the ability to communicate about their idea far more effectively, so that they can recruit employees, other people to their idea, customers to their idea and investors to their idea. You can’t do that unless you can communicate clearly and cleanly.”

Aiding Through Failures, Funding and the Future

While the TechCelerator program in itself has a lot to offer, it’s only one of many offerings available through the Technology Center Incubation Program.

Two of those additional offerings are the Learning Lab Series and the Rainmaker Series, hosted by the Ben Franklin Technology Partners, which brings in entrepreneurs or business leaders that have experienced the trials and tribulations of growing a business and that have persevered to a level of success.

“It’s an important opportunity to hear some of those first-hand stories,” said Johnson of the Rainmaker Series. “How did other people get around the problems that you might be encountering? Or how did they overcome some obstacle that also seemed insurmountable to them? It’s good to help motivate as a ‘yes I can,’ but it’s also as an assist to hear how some other very smart people kind of pulled their way around some of those problems.”

The Learning Lab Series complements the Rainmaker Series by offering information geared toward the routine types of challenges that companies encounter, such as human resources and benefit topics, including offering big company benefits as a small company and attracting top talent.

“We bring in information so that our companies within the incubator, within the Ben Franklin portfolio and often within the community at large, can learn about some of these resources to help speed up their business,” said Johnson. “For us to be able to bring those resources in and help introduce some of those relationships, I think, really is a benefit and an accelerant to the companies that make the most of that resource available to them.”

The program also aids companies in getting tapped into necessary funding.

“If you look at the spectrum of companies as they grow, they would often start with something like the TechCelerator,” explained Johnson. “They would then either come independently or through the TechCelerator and become an incubator tenant. Then, as they mature even further, and they need more help or more money, Ben Franklin is available as a funding source to help cover that gap for when you’ve maxed out your mortgage, or your credit cards or friends and family, but you’re still often premature for bringing in certainly a bank or angel. You have this chasm that you still need to feed the company with cash, but there’s a gap.

“Ben Franklin occupies a very unique space, where we fund those seed-level companies that are very immature,” continued Johnson. “We have a pool of resources from marketing expertise, human resources, finance—people that are all pulling up their sleeves to not just fund a company with cash, but to actually support them with how to spend it and deploy it more wisely and more effectively. That, frankly, is of even greater value, I believe, than the money itself.”

As companies reach the point that they need additional capital beyond what is available through Ben Franklin, the Technology Center Incubation Program is also able to help facilitate second stage capital.

“We have another colleague that is a liaison to the angel investors and the venture capital community to help those companies so that the growth is continuous and not just ‘we gave you what we can, good luck,’” said Johnson. “We help fill in the gaps as companies grow up, with the intention that they outgrow us and either become self-funding, or they become funded by someone much larger.

“We help speed up the time that they exist at a more vulnerable stage in their life and we try to make sure that they maintain the lift that they got here and that they keep that momentum,” concluded Johnson.

Beyond the BF TechCelerator, the presentations and guest speakers, the Technology Center Incubation Program’s value lies in the day-to-day resources it provides and the like-minded individuals it enables entrepreneurs to surround themselves with. A support system that understands the unique challenges and trials faced in entrepreneurship cannot be over-valued, and the Technology Center Incubation Program has it in spades. ■

For more information on the TechCelerator programs, please visit cnp.benfranklin.org.

For additional information on the Technology Center Incubator, Program contact Scott Johnson at 814-863-0884 or scott.johnson@cnp.benfranklin.org.

WOMEN-OWNED STARTUPS ARE A GOOD INVESTMENT

7 CENTRAL PA WOMEN-OWNED STARTUPS

Partial content published courtesy PA Business Central Women in Business

The number of women-owned businesses in the United States has doubled in the last 20 years, and so has the revenue they generated, according to American Express OPEN's annual State of Women-Owned Businesses report. Nearly 850 women-owned businesses start up every day. As of 2017, there were nearly 12 million women-owned businesses in the country, employing 9 million people and generating \$1.7 trillion in revenue.

Women-owned startups deliver higher revenue for investors than startups founded by men, more than twice as much per dollar invested. While data shows that women-owned companies are excellent investments, the gender investment gap is astonishingly wide.

One study by MassChallenge and BCG followed 350 startup companies and their funds. Those with male-only founders received \$2.12 million in investment funds and generated \$662,000. Startups with a female co-founder or entirely female team received \$935,000 in investment funds, and generated \$730,000 in revenue.

Women-owned businesses are worth celebrating and investing in. Here are a few local startups with women at the helm.

KinderMinder

Founder: Maria Diamanti

"KinderMinder is a mobile application that is designed to incentivize early adolescents, with games and customizable characters, to remember to take their asthma medication and to become active agents in their own health care," says KinderMinder founder Maria Diamanti.

"KinderMinder was originally created for a Penn State pitch competition that had to do with coming up with an application idea that addresses a health problem. My team and I focused on pediatric asthma which was really important to me, since I have suffered from asthma since I was 2 years old. After placing 2nd in the pitch competition, I realized how important this idea was and decided to take it to the next level.

"As a 22-year-old, my parents still call me to remind me to take my medication, and that's exactly what I want to change with KinderMinder. I want to be able to help kids become more independent when it comes to their health and provide parents with a peace of mind that their kids can take care of their health condition. In the future, I am hoping to expand the mobile application to other pediatric conditions and make KinderMinder a household name."



Project Vive

Founder: Mary Elizabeth McCulloch

"Millions of people with disabilities, such as cerebral palsy and ALS, cannot speak. Many lack access to assistive technology because of high cost, lack of training and limited control sensor options. Project Vive has created the Voz Box system, an affordable, smart, speech generating device (SGD) that addresses the unmet need for every voice to be heard," says Project Vive founder Mary Elizabeth McCulloch.



"Our goal is to further develop and implement an easily distributable, scalable SGD system that is adaptable to changes in people, technologies and social structures. Designed to be controlled by people with diverse abilities, person-

alizeable input methods include direct selection, off-the-shelf assistive technology switches and wearable sensors.

"Project Vive has designed assistive technology sensors made for resource constrained settings that can detect small, low-motor controlled movements such as with finger, elbow, knee, foot and eye movement. Project Vive's technology has gone through five iterations, and we've locked over 200 hours of user-centered design and co-creation into a low-cost SGD for people with disabilities to communicate, control and connect with their world. Our plan is to bring this technology to people in the United States and abroad."

Actuated Medical

Founder: Maureen L. Mulvihill

"At Actuated Medical, Inc. (AMI), our Innovative Motion medical devices incorporate electronically controlled actuation to improve patient outcomes and reduce healthcare costs. AMI's startup ecosystem embraces quality (certified ISO 13485; quality management system), yet allows the Team the freedom to apply agile design to cost effectively and quickly develop devices," says Actuated Medical founder Maureen Mulvihill.

"With 18 issued patents and over 40 applications pending, we leverage our intellectual property, trade secrets and regulatory files to expand our product portfolio. We seek partnerships to bring our devices to patients and clinicians. Our process focuses on de-risking each device to the point that it is attractive for a product acquisition by a strategic partner or private equity group. AMI's first product, the TubeClear System, is patented, FDA cleared, CE Marked and building sales revenue across the USA. The business model also includes strategic partnership arrangements. In February 2018, we formed an equity partnership with Ex Machina, LLC (Houston, TX) and in June 2018, an equity partnership with Rain Management, LLC (Asheville, NC)."



TEAMology

Founder: Linsey Covert

TEAMology, LLC is an award-winning startup that provides educators with an easy to use proprietary cloud-based software. Programming uses a TEAM model that uniquely integrates social and emotional learning (SEL), career readiness language and bullying prevention tools and curriculum to reach every K-8 student

Continued on next page

and meets Every Student Succeeds Act (ESSA) regulations.

The company offers a first-of-its-kind web platform that houses the curriculum and provides opportunities for school-to-school collaboration; it is a holistic school-wide program that provides character education, career education and 21st-century skills that have positive life effects far beyond the classroom.

School safety has become a focus for administrators, and research has shown the need for implementation of school wide social emotional learning programming to create a more positive school climate where students feel a sense of belonging and safety. TEAMology provides a solution that provides the necessary tools and resources to create an inclusive environment. Six multi-cultural characters promote six life foundational skills (Helping Others, Positive Change, Anti-Bullying, Problem Solving, Resiliency and Leadership) in addition to six career pathways (Human Services, Health Services, Industrial Technology & Engineering, Natural Resources, Business & Marketing and Arts & Communication). To show the connectivity of the skills, each character is aligned with a piece of a house that is built as students move through the curriculum. The slogan for self-reflection is "Are YOU in the house?" helping students to reflect on their own behaviors and goals while understanding their responsibility to their peers and ultimately their community.



Impulse Technology, LLC

Founder: Kamrun Nahar

Kamrun Nahar is the co-founder and CEO of Impulse Technology, a developer of a thermoelectric energy conversion technology designed to scale thermal and optical properties. The company's technology harvests waste heat energy and nanoscale patterned thin film specimens for micro-electrodes, heaters or custom elements, enabling clients to get materials characterization services in high-impact areas.

While Impulse Technology's long-term vision is to develop energy harvesting products with revolutionary performance enhancements, the company also provides materials characterization services, as well as expertise in research and development in other high-impact areas. To complement their own expertise in R&D toward product developments, the company collaborates with other researchers at Penn State University and other application-oriented entities.

Nascent Devices LLC

Founder: Ailan Cheng

Keeping buildings cool in the United States uses about 8.5 quads of energy per year. Put in simple terms, that's about the same amount of energy contained in 293,000 megawatts of electricity or 8 billion gallons of gasoline. Air conditioning for buildings is a major expense and generates enormous quantities of greenhouse gases.



Ailan Cheng's Nascent Devices LLC is developing new technologies aimed at replacing traditional vapor compression refrigerators and air conditioners by tapping into the amazing properties of polymeric (plastic) films that cause them to rapidly change temperature when subjected to an electric current. This unique property is known as gigantic electrocaloric effect. If Nascent can harness this gigantic opportunity, future generations may enjoy cleaner, less expensive cooling systems.

"Honestly, our technology is still in an early stage," Cheng says. "I don't think we can roll out something like a product to the market very soon. But we are actually developing prototypes right now. We hope we'll have a prototype within a year from now."

Aleo BME

Founder: Chao Liu and Jian Yang

Chao Liu is the CEO of Aleo BME, a startup that participated in the Ben Franklin TechCelerator program and is now located in the Incubator in the Technology Center at Innovation Park. Founded by Liu and her husband Jian Yang, the company is a biotechnology research and development (R&D) and device manufacturing company. The company is working to create innovative materials that will address the unmet challenges in biological, medical and environmental applications.

"Innovation Park provides a sense of business community for small technology startups like us," Liu says. "We learned from experienced business mentors in the TechCelerator program and can share the experience and resources with other smaller companies."

Aleo BME began as a three-person company, but it has come a long way since then. They've made progress in multiple fields of study—chief among them, a dye that can help make critical early diagnoses of cystic fibrosis and of a nerve regeneration device Yang says will be a "game-changer."

Innovation Park has given Yang and Liu a great staging ground in their second-floor laboratory and its investment programs for startup companies have helped Yang and Liu advance their work with \$500,000 in funding. ■



850

**Women-owned
businesses open
every day**



9 MILLION

**People employed by
women-owned
businesses**



\$1.7 TRILLION

**Revenue generated by
women-owned businesses
in last year**



Entrepreneurs demoed their ventures to members of the public at the Summer Founders Program Demo Day at the Happy Valley Launchbox.

SUMMER FOUNDERS PROGRAM HIGHLIGHTS FROM INVENT PENN STATE

On Aug. 8, 2018, entrepreneurs demoed their ventures to members of the public at the Summer Founders Program Demo Day at the Happy Valley Launchbox, powered by PNC Bank. After a few years of dormancy, the Launchbox was proud to work with Invent Penn State again and bring the program back to life.

“Tonight, what we are going to do is celebrate five teams who have completed the Summer Founders Program,” began Launchbox chief amplifier Lee Erickson. “The Summer Founders Program is an Invent Penn State program that provides, to teams of at least one student co-founder, a \$10,000 grant if they will work full-time over the summer on their venture.” These students and entrepreneurs give up jobs, internships and summer classes to further develop their companies, and for these five startups, the sacrifice was well worth it.

Tutoration

Derek Barnett co-founded Tutoration after realizing students prefer and learn better from tutors who have been in their shoes. Tutoration is “an on-demand tutoring service that connects students to qualified and vetted tutors who have taken the same class at the same university as the student,” explained Barnett.

While at Penn State, Barnett taught students in various assistant capacities. When students started asking him for one-on-one tutoring, he had his “aha” moment. Access to specialized tutors who have been in the position of the student and know the professor, the class, the material and the expectations is more appealing and helpful to students than the generic tutors found at most university or public tutoring centers. After a summer working on his company through Launchbox, Tutoration is showing promising growth.



Founder Derek Barnett

“Since February 2018, we have acquired more than 30 customers, [and] we have more than \$3,200 in revenue, and every student we’ve had has come back at least twice.” Because the company was founded by students, they have a unique insight into making Tutoration as easily accessible as possible to better fit into students’ hectic lifestyles. They made the online interface as user-friendly as possible, and now students can book an appointment for the next day or several weeks down the road, giving them much-needed schedule flexibility.

Continued on next page

Moichor

Sherveen Karbasi is the CEO and creative director of the newly renamed Moichor, formerly known as HemoGo. He saw major problems with traditional blood testing, including immunocompromised oncology patients needing to go to public labs to get their blood counts, raising their risk of infection, and the long wait times that steal precious time from chronically ill patients, and he knew something had to change.

He and his team created Moichor in response to this problem. Their phone app lets customers get a complete blood count via their cell phone, allowing them to test from anywhere. “Very simply, you prick your finger, place a drop of blood onto our strips,” explained Karbasi, “and we have an attachment for your case that you insert the strip in, and within 30 seconds, we provide the results to you and your physician through your electronic medical record system.”



The Moichor Team

Over the weeks leading up to the demo, Moichor moved to their testing phase. They have been performing tests on bovine blood samples at Innovation Park to test the chemistry of their strips, and they are in the final stages of working with an international review board at Hershey Medical Center so they can use remnant human blood samples that are left over from testing to build out their system's AI. They are also working with phone case companies so they can deliver phone cases that are functional, but that customers will also enjoy owning. On the financial side, through market research, the team has decided to use a subscription system for their product.

EPN Global

Lizzy Traband co-founded EPN Global with her mother, Annette Traband. They have developed a business interface that is easy to use and can be managed from anywhere via a smart phone with the aim to “provide competitive equestrian professionals a single dashboard where they can

manage their billing, their finances, their marketing and their management,” said Lizzy.

Equestrian professionals have packed schedules, so having everything they need to run their business at their fingertips wherever they go is paramount. EPN Global has also gone a step further, adding features to their product to cater to individual customers' needs. “Not only are we going to provide them a single dashboard,” Lizzy explained, “but we will provide them with the technology of snap, scribble and audio to fit into their lifestyle.” Ultimately, once they start using the EPN Global dashboard, equestri-



Founders Lizzy and Annette Traband

ans and their businesses will be more profitable, clients and staff will have a better understanding of business processes and horses will receive better care.

CastPak

CastPak co-founder Jack Mentch and his team are taking the phenomena of livestreaming to the next level. Thanks to busy schedules and business commitments, parents and other family members are missing out on some of their kids' biggest or most memorable achievements, be that scoring the winning goal in a soccer match or dancing a solo in their recital. “Our mission at CastPak,” explained Mentch, “is to ensure that people never miss out on life's greatest moments.”

Their product provides high-quality livestreaming from anywhere to anywhere. Currently, people



Founder Jack Mentch

can only livestream via their phones and the quality suffers as a result. In comparison, Castpak's technology allows customers to stream at five-times the quality of most smart phones.

CastPak has partnered with local company Videon and, through this partnership, the team at CastPak has access to Videon's encoder, which can livestream at higher qualities due to its ability to process data faster. CastPak also uses a modem and a router, so customers can livestream via data or WiFi, essentially letting them livestream from anywhere customers' want.

After extensive market research, Mentch and his team found their target market in booster clubs. They are continuing to study their market to determine if leasing or buying units is the most appropriate sales method.

Paw Proof

Jobe Matula, vice president of Paw Proof, saw a dangerous, potentially lethal problem in every kitchen: pets get into trash all the time, which is not only frustrating for the owners, it is actually incredibly dangerous to pets. Paw Proof kitchen trashcans are the answer. “A lot of pet owners are aware of chocolate, the danger it is to pets,” said Matula, “but a lot of people don't understand that onions break down red blood cells, grapes [and] raisins, can cause kidney damage, and these are long-term effects on the well-being of your pet.”

In their market research, the team at Paw Proof discovered that there are no 100-percent pet-friendly trashcans currently on the market. They found that although trashcan manufacturers have developed locking trashcans, this doesn't solve the problem in most cases.

The conclusion: build a better trashcan. Paw Proof developed a trashcan that is 100-percent pet-proof. The trashcans have a lock at the top, but they also make use of physics. Paw Proof trashcans are wider at the bottom and narrow at the top, the reverse of most kitchen trashcans. By designing their trashcan this way, Matula and his team have actually created a universally-better trashcan. Customers can use 90 percent of the bag's capacity and because customers can easily take apart its three pieces, it is easier to clean—in fact, both the lid and base can be cleaned in the dishwasher! The body is the only part that needs to be cleaned manually, but thanks to its curved design and the ability to clean from both ends, it's a breeze. ■



Jobe Matula

LOCAL LEADERS HOPE TOWN-GOWN CONFERENCE BOOSTS BOROUGH

In June, Centre County residents and businesses received some welcome news: Penn State and State College Borough was chosen to host the 2019 International Town & Gown Association's City and University Relations Conference. The annual event, which aims to foster 'town-gown' collaboration between select institutions of higher learning and their local municipalities, is expected to bring in 300 to 400 visitors for three days next May—so it could mean big things for the area.

But cooperation is nothing new for Penn State and State College. "Since the University's founding, Penn State and State College have had a rich history of partnership focused on improving the lives of students, faculty, staff, community members and visitors," the university said in a statement to *Journeys*. Notable partner projects between school and town have included business accelerator Happy Valley LaunchBox, economic-development initiative Invent Penn State, Global Entrepreneurship Week and co-working space New Leaf Initiative.

Local business and school leaders expect even more good things to come as a result of the event next year. Here are several ways in which the conference is likely to affect the Borough, university, local enterprises and those considering starting or moving a business to the county.

An Economic Infusion

The arrival of several hundred people, all of whom will need places to stay and eat while they are in town, essentially guarantees an injection of capital.

"There will be a direct impact on the restaurant and lodging industry—in fact, conferences and business travel are good for the local economy," Vern Squier, president and CEO of the Chamber of Business & Industry of Centre County, said. "When we think about visitors to the areas, tourists immediately come to mind, but individuals here on business [compose] a significant percentage of 'heads in beds' at local hotels."

But the economic boost doesn't necessarily end with the last day of the conference. "Any time the county hosts a conference, doing so offers the chance to put our community, quality of life, entrepreneurial ecosystem and recreational opportunities on display to what hopefully will turn into return visitors," Squier said.

An Influx of Entrepreneurs

When it comes to entrepreneurship, State College is already on the map—and the ITGA Conference could focus even more attention on the area. The Borough is among rankings site livability.com's top 10 U.S. cities for entrepreneurs, Douglas Shontz, spokesperson for the Borough's Office of Community Engagement, said.

"[S]hining a national light, like the ITGAT Community & University Conference, on this strong ecosystem should have a positive impact on local entrepreneurs and hopefully attract other entrepreneurs to State College," Shontz said.

While making a direct connection between any future State College businesses and the Borough's hosting of the conference would be difficult, "it's not out of the realm of possibility that the connections that can be made during ITGA could very well open doors to new business investment opportunities," Squier said.

A Closer-Knit Community

The already close relationship between State College Borough and Penn State is one of the



CBICC President and CEO Vern Squier addresses business and community leaders at a recent event celebrating the awarding of federal funding for the high-speed I-99/I-80 interchange.

qualities that have made the area a great place to live, Shontz said, but events like the City and University Relations Conference serve to strengthen it even more, increasing quality of life for all.

"The State College Borough's Office of Community Engagement has had many positive years [of] enhancing the unique town-gown relationship between Penn State University and the Borough of State College by providing the community with robust experiences that bring Penn State University students, permanent residents and community leaders together for healthy dialogues," Shontz said.

Better Best Practices

The conference will also provide an opportunity for those in academia and government to discuss what's effective in town-gown relationships nationwide and locally, as well as what isn't.

Such "peer-to-peer discussion about best practices and innovative initiatives, about what works and doesn't work, is helpful in local efforts to continue growing and strengthening opportunities for entrepreneurship," Squier said. "An added bonus is that in hosting ITGA, we are highlighting our entrepreneurial ecosystem, offering a first-hand look at successes some attendees have only read or heard about."

In fact, other schools are already looking at the relationship between the Borough community and Penn State as a successful model. In 2015, Chamber of Business & Industry of Centre County, on behalf of the local community, and the school "signed a memorandum of agreement to work collaboratively on economic and entrepreneurial development," Squier said. Kansas State University and the University of Alabama are among those schools looking to emulate the agreement, which outlines how the school and community can work collaboratively to boost economic and entrepreneurial initiatives in the area.

Inspiration Diffusion

With session, event and discussion plans for the 2019 conference already well underway, those involved in the event's careful planning are hoping attendees take home more than just hotel shampoo.

"Conference participants will have the opportunity to learn about how the University and State College Borough collaborate to promote a diverse and welcoming community, boost community engagement and safety and expand local entrepreneurial efforts and other economic and job creation initiatives," the university said in its statement to *Journeys*. "We hope those in attendance will be inspired to incorporate new knowledge and ideas within their own universities and communities." ■

What Businesses are Saying about Innovation Park



"Working at Innovation Park...has exposed me to all the other many and varied aspects of research at Penn State. I learn something new every day about the important and amazing research that is being accomplished by both independent faculty and research done in cooperation with industry."

"Innovation Park is where you meet entrepreneurs and startups. It leads us to opportunities that we can't get anywhere else."

"The Park has lots of opportunities to meet different people with all kinds of different backgrounds and professions."




"The school is a tremendous resource for expertise in a wide breadth of fields, and has a population of bright-eyed and motivated students. The business incubator, in conjunction with Ben Franklin Technology Partners, allowed us to develop a basic skill set and understanding of this new startup world, and provided opportunities for getting initial funding to launch."

"The greatest benefit of our location in Innovation Park is the cross-pollination that goes on. We can inspire and help each other, and we do."

"Innovation Park provides a sense of business community for small technology startups."

"Our intimate connection to the people here at Innovation Park was crucial to our success."



"Here at Innovation Park and Penn State people are willing to help with no strings attached. We can find top flight researchers and very experienced people. We are confident we can succeed here."

BUSINESS RESOURCES & EVENTS

MoneyCounts: Identity Theft

Tuesday, Oct. 23, 2018, 12:00 – 1:00 pm

The Penn State Sokolov-Miller Family Financial & Life Skills Center is offering monthly webinars via Zoom throughout the 2018-2019 academic year. The webinars will be held every other Tuesday of every month from 12:00 – 1:00 pm (Except December).

To access any of these free webinars, please use the Zoom link provided below, no registration needed: psu.zoom.us/j/3845004052

MoneyCounts: Debt Management

Tuesday, Nov. 6, 2018, 12:00 – 1:00 pm

The Penn State Sokolov-Miller Family Financial & Life Skills Center is offering monthly webinars via Zoom throughout the 2018-2019 academic year. The webinars will be held every other Tuesday of every month from 12:00 – 1:00 pm (Except December).

To access any of these free webinars, please use the Zoom link provided below, no registration needed: psu.zoom.us/j/3845004052

Global Entrepreneurship Week

November 7-15, 2018

GEW Penn State, managed by the Penn State Small Business Development Center (SBDC), celebrates relationships between members of the University and the local entrepreneurial communities. Join us for GEW Penn State's 10-year anniversary to enjoy daily presentations, keynote addresses, workshops, and networking opportunities geared specifically to entrepreneurs, local startups, innovators, and anyone interested in thinking outside the box.

Visit <https://gew.psu.edu/> for more details

Morgan Centre for Excellence Grand Opening

November 15, 2018

We're proud to announce the grand opening of the Morgan Centre for Excellence! The Morgan Centre of Excellence is situated inside the Park's new 310 building. The remaining space in 310 leaves room for prospective tenants looking to take advantage of Innovation Park's amenities and culture.

The Entrepreneurship Ecosystem at Penn State

Nov. 15, 2018, 12:00 pm – 1:00 pm

Online Webinar

Are you a student at Penn State who has thought about starting a business, but you are not sure where to start or how to seek assistance? Penn State has a flourishing entrepreneurship ecosystem at most campuses that is waiting to engage with you!

PennTAP will host this webinar to explain how you can "plug-in" to this network of assistance, resources, and tools to help you avoid mistakes, and get to success quicker. No matter where you are in the idea, product development, or establishment of a business, we can help you take the next step and understand the resources available to you.

Register at penntap.psu.edu



MoneyCounts: Salary Negotiation

Tuesday, Nov. 20, 2018, 12:00 – 1:00 pm

The Penn State Sokolov-Miller Family Financial & Life Skills Center is offering monthly webinars via Zoom throughout the 2018-2019 academic year. The webinars will be held every other Tuesday of every month from 12:00 – 1:00 pm (Except December).

To access any of these free webinars, please use the Zoom link provided below, no registration needed: psu.zoom.us/j/3845004052



Nittany Lion Football

October 27

Penn State vs Iowa

November 3

Penn State vs Michigan

November 10

Penn State vs Wisconsin

November 17

Penn State vs Rutgers

November 24

Penn State vs Maryland

INNOVATION PARK

SPACE FOR LEASE

<http://www.innovationpark.psu.edu/>



16,200 SF ~~29,700 SF~~ Available

310 INNOVATION BOULEVARD NEW HIGH-BAY OFFICE & RESEARCH BUILDING



331 INNOVATION BOULEVARD 3rd Floor **ONLY 7,025 SF LEFT!**

- ◆ High quality master planned Class A professional office and research park
- ◆ On-site professional property management
- ◆ Abundant free parking
- ◆ High-grade construction materials, efficient design and immaculately landscaped
- ◆ Penn Stater Hotel
- ◆ Daybridge daycare services located within Innovation Park
- ◆ Free CATA public bus transportation service every 20 minutes to/from University Park and surrounding community



 **Newmark Grubb
Knight Frank**

FOR MORE INFORMATION CONTACT:

TOM MacDONALD, SIOR | 412.434.1028 | tmacdonald@ngkf.com

210 Sixth Avenue, Suite 600, Pittsburgh PA 15222 T 412.281.0100 www.ngkf.com

INNOVATION PARK

SPACE FOR LEASE

<http://www.innovationpark.psu.edu/>



16,200 SF ~~29,700 SF~~ Available

310 INNOVATION BOULEVARD NEW HIGH-BAY OFFICE & RESEARCH BUILDING



331 INNOVATION BOULEVARD 3RD FLOOR ONLY 7,025 SF LEFT!

- ◆ High quality master planned Class A professional office and research park
- ◆ On-site professional property management
- ◆ Abundant free parking
- ◆ High-grade construction materials, efficient design and immaculately landscaped
- ◆ Penn Stater Hotel
- ◆ Daybridge daycare services located within Innovation Park
- ◆ Free CATA public bus transportation service every 20 minutes to/from University Park and surrounding community

PRSR7 STD
U.S. POSTAGE
PAID
State College, Pa.
Permit No.2

PennState
Innovation Park
Innovation Park at Penn State
101 Technology Center
University Park, PA 16802



FOR MORE INFORMATION CONTACT:

TOM MacDONALD, SIOR | 412.434.1028 | tmacdonald@ngkf.com

210 Sixth Avenue, Suite 600, Pittsburgh PA 15222 T 412.281.0100 www.ngkf.com