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Entrepreneurial Success

By Joseph B. Hornett

THE PURDUE RESEARCH FOUNDATION FINDS THE RIGHT FORMULA

Entrepreneurs are some of the hardest working and motivated individuals you will ever know, and they need the right environment, support system, and professional guidance to be successful. Entrepreneurs must have an avenue for technology transfer to protect their intellectual property through patents and licensing, they need space to work and opportunities to network, and venues to secure venture funding and angel investments. This article explains how the Purdue Research Foundation provides the important amenities like a shared business center, business diagnostic program, venture capital opportunities, human resources, communications and marketing, and tech transfer activities to help entrepreneurs succeed. The Foundation won the International Economic Development Council's 2009 award in regionalism and cross-border collaboration.

entrepreneurial success

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INTRODUCTION

In *Acres of Diamonds*, entrepreneur and business leader Russell Conwell wrote about a story he heard while traveling along the Tigris and Euphrates rivers with a group of Englishmen. A Persian owned a very large farm with orchards, grainfields, and gardens and was, by all accounts, a contented man. Then one day, an old priest told the Persian that diamonds were so valuable that if he had a diamond the size of his thumb, and if he had a diamond mine he and his children could have great wealth and influence around the world.

The farmer sold his home and left his family while he went to search for diamonds. He did not find any diamonds and died penniless in Spain.

The story does not end there for it continues with the man who purchased the Persian's farm. One day, the man picked up a curious looking stone that seemed to shine. He put the stone on his mantel and forgot about it – until the old priest came to visit again. The priest looked at the stone and said: "Here is a diamond! Has [the Persian] returned?"

"Oh no, [the Persian] has not returned, and that is not a diamond. That is nothing but a stone we found right out here in our own garden," said the man who owned the farm.

Photo credits: Andrew Hancock, Purdue News Service.

More than 200 people gathered for the dedication of the Herman and Heddy Kurz Purdue Technology Center in the Purdue Research Park. The 105,000-square-foot facility will house the Purdue Research Foundation offices, provide space for up to 26 companies and support up to 275 jobs.

The Herman and Heddy Kurz Purdue Technology Center is the newest building to be dedicated in the 725-acre Purdue Research Park in West Lafayette, Ind. The park is home to more than 165 companies and provides 364,000 square feet for new companies, making it the largest business incubator in the state.

"But," said the priest, "I tell you I know a diamond when I see it. I know positively that is a diamond." Then the two men went into the garden and found many diamonds. This is how the "diamond-mine of Golconda, the most magnificent diamond-mine in all the history of mankind" was discovered.

Conwell wrote: "Had Ali Hafed remained at home and dug in his own cellar, or underneath his own wheat fields or in his own garden, instead of wretchedness, starvation, and death by suicide in a strange land, he would have had 'acres of diamonds.' "

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Conwell told this story more than 6,000 times around the world and it was first published in 1890 by the John Y. Huber Company of Philadelphia. But the story does not end there, for Conwell made so much money from telling the story that he was able to establish Temple University and many other civic projects.

That is what the greatest entrepreneurs do – they look for diamonds in their own backyards. Conwell took a story and turned it into a life-changing experience. Thomas Edison took his interest in electricity and helped change the way we live. Henry Ford took a love of engines and "horseless carriages" and helped change the way we travel. Amelia Earhart took her desire to pilot aircraft and changed the way we view gender roles. Bill Gates took his talent in electronics and helped change the way we work.

Mary Rusek, president of Swift Enterprises, discusses research with John Rusek, vice president and chief engineer for Swift, which is based in the Purdue Research Park of West Lafayette, Ind. The Ruseks co-founded the company that is developing a high-octane biofuel for the general aviation industry.

Helping entrepreneurs find the diamonds in their own backyards is what we're trying to do in technology parks and incubators. In less than a decade, officials in the Purdue Research Park have worked directly with nearly 200 successful business owners and provided guidance for countless others to meet those challenges. In just eight years, the 725-acre Purdue Research Park of West Lafayette has grown into the largest university-affiliated business incubation complex in the country. The Park, which is managed by the Purdue Research Foundation, is home to more than 165 companies. About 100 of these are technology-related and another 39 are traditional startups.

In addition to the Purdue Research Park of West Lafayette, the Foundation has established technology parks in other locations across Indiana including the Purdue Research Park at Ameri-Plex-Indianapolis, the Purdue Research Park of Northwest Indiana (Merrillville), and the Purdue Research Park of Southeast Indiana (New Albany). Combined, these parks support nearly 200 businesses with about 4,000 employees earning an average annual wage of about $54,000.

The Purdue Research Park of West Lafayette is not alone, for it is one of many outstanding university-affiliated parks in the world. Others in North America can be found in Wisconsin, Florida, Pennsylvania, North Carolina, California, Utah, Iowa, Vancouver, and other locations. These successful parks all have several goals in common including:

- Moving discoveries from the university to the public through technology transfer avenues.
- Protecting the university's intellectual property through patents and licensing of new innovations.
- Providing the optimal infrastructure and environment for entrepreneurs to succeed.
- Implementing an array of amenities to help entrepreneurs.
- Encouraging collaboration among the university, other companies, and public entities.
- Offering avenues to secure angel investments or venture funding.

Discovering a problem that needs to be overcome and creating a solution might be accomplished by a single person, but those are only the first steps an entrepreneur must take in delivering that solution to the marketplace. Fortunately for entrepreneurs, especially those based at or near a research university, research and industrial parks affiliated with a university provide ample assistance in developing and delivering a discovery to the marketplace.

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STRONG FOUNDATION

The Purdue Research Foundation was founded during the height of the Great Depression when David E. Ross, president of the Purdue University Board of Trustees, had a vision. He believed that there would be great benefits to industry if we increased partnerships and access to university knowledge and aid. Along with trustee board member Josiah K. Lilly, founder of Eli Lilly and Co., and combined financing of $50,000, they created the Purdue Research Foundation. The purpose of the Foundation as established by David Ross and Josiah Lilly is to "Advance the Mission of Purdue University." That includes accepting gifts, administering trusts, funding research scholarships and grants, acquiring property, and negotiating research contracts on behalf of the university.

A new goal of the Foundation/Purdue University partnership was launched in the 1990s when the Foundation was charged with helping the university in the realm of economic development. Thus, we began to attract businesses to the Purdue Research Park network, launch new startups powered by Purdue-generated innovation, and cultivate high-tech collaborations with the university.

Purdue Research Park's successful incubator model that combines technology transfer and business acceleration programs, flexible leasing plans and human resources, and media relations and marketing assistance have led to explosive growth for individual companies and the largest cluster of technology-based companies in the state. Those services are combined with top-notch business plan competitions, job fairs, internship programs, and entrepreneurship academies.

The secret to the success of the entrepreneurs in the Purdue Research Park network goes well beyond the services we offer. Clustered together, our firms create an entrepreneurial spirit amongst themselves that is conducive to information sharing through networking, as well as a larger pool of highly skilled labor. Clustering also encourages the development of additional on-site amenities such as trail systems, fitness centers, child care, and restaurants.

UNIVERSITY-AFFILIATED FIRMS

There is no doubt that the affiliation with Purdue University is a cornerstone in the success of the Purdue Research Park network. Of the nearly 200 companies, 64 have a direct link to a discovery or innovation of a Purdue professor that was patented, licensed, and led to the creation of a company. Cook Biotech Inc. and Endocyte Inc. are two examples of a discovery made at Purdue University, developed through the Foundation's Office of Technology Commercialization, and then licensed to a company.

Cook Biotech Inc. was one of the first companies to be based on a Purdue University technology. Founded in 1995 by Cook Group Inc., Cook Biotech licensed a technology discovered in the laboratory of Leslie Geddes (1921-2009), the former Purdue University Showalter Distinguished Professor Emeritus of Biomedical Engineering. The technology developed from porcine small intestine submucosa, or SIS, is one of the most well-known biomedical technologies to come out of Purdue University. The technology is used for tissue repair and has more than 15 FDA clearances for use in hernia repair, fistula repair, plastic surgery, staple line reinforcement, continence restoration, Peyronie's disease, dural repair, and pelvic floor repair. Cook Biotech's other well-known tissue repair product, OASIS® Wound Matrix, is used to treat bed sores, burns, and disease-induced skin ulcers.

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A scientist with Purdue Research Park-based company Cook Biotech Inc. holds the SIS technology developed by Cook Biotech. The SIS technology was developed at Purdue University and helps repair and regenerate soft tissues in the human body. The product has been used on more than a million patients across the globe.

The technology uses a scaffold-life matrix that can be surgically implanted to help wounds heal faster. It has been used in nearly one million people around the world. Doctors are using it on injured soldiers and civilians in Afghanistan, Iran, and other places.

In 2004, the Cook Biotech technology was used during an operation to separate conjoined twins, Carl and Clarence Aguirre, by surgeons in the Children's Hospital in Montefiore, New York. The boys were joined at the top of their heads. After the surgery, a product was needed to repair the dura mater (covering of the brain). Durasis, the Cook Biotech SIS technology, was used instead of a plastic material to allow the dura mater to grow with the children.

In a 2009 example, the Cook Biotech SIS technology helped a 15-year-old boy who was injured while hunting with a friend in southern Indiana. He was a good

basketball player and the season was just beginning. While resting the gun barrel on his foot, it fired, creating a penetrating wound – skin and bones were destroyed. A surgeon carefully cleaned the wound of debris and then packed the SIS technology into the wound. There was a concern that the boy might have a permanent impairment. In January, the foot had healed without significant scarring and without any physical deficit and the young man rejoined the basketball team.

To accommodate a rapidly increasing demand for its products, the company built a 55,000-square-foot, clean-room manufacturing facility at Purdue Research Park of West Lafayette, Ind. in 2004. Today, Cook Biotech has about 130 employees.

Another example of a Purdue University technology discovery that led to the founding of a successful company is Endocyte Inc., a privately held biotechnology company developing a new generation of receptor-targeted

Chris Leamon, vice president of research for Endocyte Inc., does research on a drug that could help target and find new ways to treat cancer. The technology was discovered at Purdue University and the company is based in the Purdue Research Park of West Lafayette.

therapeutics, or "smart drugs," for the treatment of cancer and autoimmune diseases.

Endocyte was developed from a discovery by Phil Low, the Joseph F. Foster Distinguished Professor of Chemistry. Endocyte founders are Dr. Low, who serves as the company's chief science officer, and Ron Ellis, the company's president and CEO.

Around the country, doctors are treating people like Susan Umberger, who has drug-resistant ovarian cancer, as part of Endocyte's clinical trials phase. Susan retired in 2007 and discovered she had ovarian cancer one month later. After trying conventional therapy treatments including surgery and chemotherapy, she became part of Endocyte's Precedent study. The drug, often called the "Trojan Horse" drug, is designed to target cancer cells while avoiding normal cells. It does this because of the folate used with the medicine. After six months in the study, Susan said, "Every time we do a CAT scan – which is every 8 weeks – (the cancer is reduced). And the first one was the most dramatic. It went down about 50 percent." Endocyte has a broad pipeline of drugs in development for the treatment of various cancers and inflammatory diseases, including six cancer drugs in clinical trials. In 2009, the company closed on $26 million equity financing. Overall funding is more than $100 million.

In June 2009, company officials announced a major milestone when they presented their data from the Phase II PRECEDENT study before the American Society of Clinical Oncology at its annual meeting held in Chicago.

The examples of Cook Biotech and Endocyte have one important aspect in common: both companies developed after discovering a solution to a problem. The entrepreneurs of both companies realized that they could not stop, but also worked to deliver that solution to the marketplace. Fortunately for entrepreneurs, especially those based at or near a research university, research and industrial parks affiliated with a university provide ample assistance in developing and delivering a discovery to the marketplace. Such is the case with Cook Biotech and Endocyte, for they use the resources at the university and at the research park to further their companies' strategic goals.

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TECHNOLOGY TRANSFER, INTELLECTUAL PROPERTY

One of the first essentials that entrepreneurs need is the knowledge of the quality of their intellectual property and how to protect it. At the Purdue Research Foundation, the Office of Technology Commercialization acts as an important catalyst in the success of the Foundation/University partnership. The office operates one of the most comprehensive technology transfer programs among leading research universities in the United States. Services provided by this office support the economic development initiatives of the university and benefit the university's academic activities.

Based in West Lafayette, Ind., Purdue faculty, staff, and student entrepreneurs can work hand-in-hand with technology managers in the Office of Technology Commercialization. These managers help entrepreneurs

ascertain if there is a market niche for the intellectual property. If there is, they help the entrepreneurs better understand state and federal policies related to intellectual properties.

The Office of Technology Commercialization strives to protect, market, and license intellectual property developed at Purdue University. The office works closely with Purdue faculty, staff, and student entrepreneurs to provide the resources needed to better understand Purdue policies related to intellectual property and the processes whereby this intellectual property – patents, copyright, trademarks, and tangible research property – can become an actual product or service. Startups and established companies alike use the property to ascertain and protect their market niche, resulting in job creation and other economic development advantages. To ensure the long-term success of the innovations, the office often helps inventors form startups complete with investor support and qualified management teams.

The numbers are impressive. From 1996 to 2009, the Office of Technology Commercialization filed 1,827 invention disclosures and 380 patents from discoveries made at Purdue, and 40 startups have been created from Purdue technologies. Most of the startups are in life sciences, biomedical devices, engineering, advanced manufacturing, information technology, and agriscience.

We recognize the hard work of the Purdue faculty with the annual Purdue Research Foundation Inventors Recognition Dinner, where we honor one faculty member with the Outstanding Commercialization Award, and all faculty who filed patents receive a plaque during the black-tie awards dinner. In 2009, we recognized 31 faculty members and awarded Karthik Ramani, a professor of mechanical engineering, with the Outstanding Commercialization Award for his work with a Purdue Research Park-based company, VizSeek, which provides online visuals for search engines and databases.

ACCESS TO INFRASTRUCTURE

Once the market niche for the entrepreneur's intellectual property has been determined, the entrepreneur then needs access to a variety of assets including infrastructure, business services, networking, and more. The Purdue Research Foundation provides these to all entrepreneurs located in its four-city park network.

Comprised of uniquely designed buildings, the Purdue Technology Centers provide flexible office/laboratory facilities. State-of-the-art conference rooms equipped with

LICENSING A TECHNOLOGY

A good example of a discovery moving through the licensing process is a Purdue University technology that uses a monitoring system similar to those used by earthquake seismologists to detect tiny cracks in bones. The technology was recently licensed through the Office of Technology Commercialization. The technology could help prevent fractures in humans and racehorses.

The new monitoring system records "acoustic emission data," or sound waves created by the tiny bone fissures. The same sorts of acoustic emissions are used to monitor the integrity of bridges and mechanical parts like helicopter turbine blades, according to Ozan Akkus, an associate professor in Purdue University's Weldon School of Biomedical Engineering who discovered this technology. Researchers at Purdue have designed wearable acoustic emission sensors, which could be used to monitor the formation of these "microcracks" in bones that can lead to hairline stress fractures unless detected in time.

The technology might help prevent serious fractures in racehorses that could cause lameness and lead to more serious catastrophic bone failure. There is a huge investment in thoroughbred and standardbred horses, and a thoroughbred racehorse can cost between $4,000 to $10 million and cost thousands more each month for training. About 70 percent of young thoroughbreds develop microcracks in their cannon bones known as bucked shins. About 10 percent of horses with bucked shins will have radiographic evidence of stress fractures. One of the technology's goals is to prevent stress fractures and curtail catastrophic fractures.

Estimated losses attributed to bone fractures in thoroughbred or standardbred horses used in the horse racing industry exceed $10 million annually. Such a technology also might protect soldiers, athletes and dancers. Akkus visited West Point in summer 2009 to test the monitoring system on cadets going through basic training.

"Strenuous military exercises subject soldiers to prolonged physical activity in which relatively small forces are repeatedly exerted on bones," Akkus said. "The forces are not initially strong enough to break a bone, but it's the repetition that poses the most danger by causing microscopic cracks to accumulate over time and eventually result in stress fractures." Depending on the service branch and type of training, five percent to 20 percent of U.S. basic training recruits experience stress fractures of the lower extremities, with the highest incidence in women recruits, Akkus explains.

About five percent to 10 percent of athletes experience stress fractures. A stress fracture occurs because cracks form when mineralized collagen fibers in bone fail, producing sound waves that cause a rippling motion on the skin's surface. "This is the same thing that happens during an earthquake, but on a microscopic scale and at a higher frequency," Akkus said. "Instead of an earthquake-size opening, these cracks are about a tenth of a millimeter wide." One reason it's difficult to diagnose the hairline fractures is because they are caused by the gradual accumulation of microscopic cracks, which are not detectable with conventional imaging technologies.

Photo credit: Andrew Hancock, Purdue News Service.

David Kennedy, president of IKOTECH LLC, sits in the Bindley Bioscience Center in Purdue's Discovery Park beside an advanced magnetic cell-sorting machine. His company is using the technology for cancer diagnostics, diabetes therapeutics and other health-care applications. IKOTECH has relocated from Cincinnati into the Purdue Technology Center of Southeast Indiana in New Albany, Ind.

FIVE TIPS FOR ENTREPRENEURS TO SUCCEED

1. **Get a strong finance manager:** Few visionary entrepreneurs are good finance managers, and many companies with a great product and strong clientele have failed because of poor money management. Choose wisely so you can focus on your product and client.
2. **Pick the right location:** Make sure your work environment is conducive to creativity and a place where you can invite clients. Consider an incubator or research park that provides the necessary amenities to support your needs such as a shared business center, human resources guidance, conference space, welcome center, marketing assistance, close restaurants and shopping, and networking opportunities.
3. **Protect your IP:** It's your technology and your product. Secure patents and/or licensing agreements. Have potential clients sign confidentiality agreements if you are sharing trade secrets or letting them into your facility.
4. **Make friends:** Join economic development organizations in your area; accept speaking engagements; join social media outlets like Facebook and Twitter or start your own blog; get to know the economic development leaders in your area; and attend functions where you can network.
5. **Believe in yourself and your product:** Any successful entrepreneur has faced challenges and choices. Keep focusing on your professional goals and don't forget that you started this business because you have a product or service that fills a need.

audio, visual, and computer systems are available free of charge to tenants and affiliates. Shared office equipment such as two-way video, postage meters, photo copiers, fax, high-definition scanner, and extra-wide printer are available on a usage-basis. In addition, Purdue University offers access to its broad array of research equipment to client companies for a usage fee. This valuable asset allows companies to defer the purchase of expensive equipment.

The Purdue Technology Centers' affiliate program is designed for startups not ready to lease office space. Affiliate clients have access to the same services as tenant clients, only without a physical presence in the center.

AMENITIES FOR SUCCESS

An entrepreneur with a company based in the Purdue Research Park network doesn't have to worry about hiring a receptionist to take calls, putting together a human resources policy manual, or writing news releases and distributing them to media outlets. But the services go beyond that to office essentials like a copy machine, fax machine, mailing services, and even a place to grab a cup of coffee. What this means is that entrepreneurs can concentrate on their business during those critical first years that can make or break most companies and for the duration that their company remains in the park.

Human resources assistance is provided to clients by the Purdue Research Foundation's Human Resource Services Department. The department assists client firms in writing job descriptions; facilitating and funding pooled advertising for park-based positions both online and in the newspaper; screening résumés; and assisting clients with the interview process.

The Foundation's Communications and Marketing Department assists clients with the creation of marketing materials; the editing, marketing, and distribution of news releases; the production of company profiles, brochures, and informational videos; television/radio placements; and media workshops.

The PRF DataStation, a Purdue Research Foundation-managed data center located at Purdue Research Park of West Lafayette, supports the park's technology-based and compliancy-regulated companies. The DataStation is

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an energy-efficient, high security facility built to house mission-critical computer and network equipment. Serving as a central point for fiber connectivity, the DataStation also features redundant power and cooling as well as access to low-cost, high-availability internet bandwidth. Customers include Purdue Research Park-based companies and any company connected to the center by fiber, copper or wireless network infrastructure. Companies located in other Indiana cities, especially those with Purdue Research Parks – Merrillville, Indianapolis, and New Albany – benefit from the DataStation's virtualized applications, managed services, and off-site data storage capabilities.

Photo credit: Andrew Hancock, Purdue News Service.

The Purdue Technology Center of Southeast Indiana, located at 3000 Technology Ave. near the southeast corner of Interstate 265 and Charlestown Road in New Albany, is one of four Purdue Research Park centers around the state that serve as incubators for startup or expanding companies. It also is home to most of the classrooms, labs and faculty offices for Purdue's College of Technology at New Albany location, the Purdue Extension Office for Floyd County, and an office for Purdue's Technical Assistance Program.

ENCOURAGING COLLABORATION

Business coaching and advisor services are provided to incubator clients and emerging startups through the Purdue Portals program. This program is designed to accelerate new business growth by creating vital links between product research and commercial application.

The program provides tangible assistance that can significantly reduce the entrepreneur's time, effort, and resources needed to commercialize their product, service or process. Principal areas of assistance include business plan development, seasoned counsel, test marketing, financial and technical input, and direction from market-specific mentors. Purdue Portals utilizes a "stage-gate" methodology to identify, evaluate, and assist commercial business opportunities. The program employs seven development features critically important to the commercial development process, including:

1. Establishing a clear pathway of development structured to employ three phases of review and assistance;
2. Forming a team to evaluate and guide the development process;
3. Selecting a mentor and advisory board representing special technical market knowledge and access;
4. Accelerating the business development timetable;
5. Placing the products and services into an initial "trial-sell" in the marketplace;
6. Developing financing strategies that address early stage gap financing resources, attraction of angel investors, and identification of sustainable financial resources; and
7. Assisting with the formulation of a management team.

These seven features, when combined, form the type of matrix that is necessary to launch today's new products and services successfully. In accelerating the development of technology-based businesses, the program functions as a hands-on strategic advisor, helping negotiate, implement, and manage all phases of the acceleration process.

Other programs include the educational opportunities provided through the university. A number of venues are used to assist clients with training and education on a wide range of business topics. Three industry-based clusters – the Life Sciences Research Council, the Department of Defense Cluster, and TechNet (an IT cluster) – meet monthly to discuss industry-specific business issues and provide a forum for educational speakers. Monthly seminars are held to present business topics to all client companies. Educational topics include company formation, gaining access to investors, grant opportunities, commercial lending, and other pertinent subjects. In addition, clients have access to seminars and programs offered by the Purdue University Krannert School of Management and the Burton D. Morgan Center for Entrepreneurship.

The access to networking and synergy through Purdue University gives entrepreneurs a unique avenue of working and collaborating with researchers in a world-class research institution. The university encourages faculty to be engaged in the Purdue Research Parks. At present, the parks have 64 faculty members highly engaged in park companies. Along with this there also are 275 university students employed at park companies who provide a wealth of knowledge as well as information sharing, which adds to the workforce development for park companies. In turn, the students gain invaluable working experience that often leads to career opportunities upon graduation.

A critical networking opportunity for company presidents is an Executive Summit during which leaders discover what is happening in the park, share ideas and expertise, provide best practices, and learn about the state and national initiatives that may be applicable to their businesses.

A less structured program, but just as important for collaborations and networking, is the quarterly "Party in the Park" events in which all client company employees are invited to mingle. These after-hours topical events are normally sponsored by local service providers, and also facilitate networking between clients and providers. The Purdue Technology Centers also leverage Purdue University sporting events to create after-hours networking

opportunities. Purdue University football tailgate parties provide an informal venue for client companies to network with Purdue University faculty, staff, and administrators. These events provide clients and startups with the opportunity to gain access to a network of local professionals and experts.

ACCESS TO CAPITAL

Another metric used to track the performance of the Purdue Technology Centers is the attraction of capital investments to client companies. Since 2004, combined total investments from private, institutional, and governmental sources exceed $100 million.

Strong financial support enables the Foundation to bring new opportunities to new innovations. Through strong community relationships, we have been rewarded with the backing of the city of West Lafayette; Tippecanoe County; the Indiana Economic Development Corporation; the Lafayette/West Lafayette Development Corporation; Greater Lafayette Commerce; and local, state, and federal government. In addition, other funding has been put into place to help our companies reach their goals.

Strong financial support enables the Foundation to bring new opportunities to each of its locations. In Merrillville, federal support of $9 million to date has aided the construction of the Purdue Technology Center. Locally, the city of West Lafayette has provided $4.1 million for the creation of the Ross Enterprise Center to attract Butler International's Sikorsky Engineering and Technology Center; $1.5 million to build the Innovation Center to attract HP Enterprise Services (formerly EDS); and numerous tax abatements and training dollars.

At the state level, the creation of the Indiana Certified Technology Park Program also has provided funding. This program returns incremental sales and income tax for reinvestment in our Purdue Research Parks. These funds, $450,000 to date, have provided fiber infrastructure for the Purdue Research Parks. The balance of the funds, $4.5 million, has been committed to the Purdue Technology Center through the efforts of the city of West Lafayette. The state has also worked closely with the Purdue Research Parks for grant funding in excess of $2 million.

Photo credit: Purdue Research Park

M4 Sciences CEO and founder James Mann works on a computer numerically controlled lathe machine used for the company's TriboMAM™ ultraprecision drilling technology. The design of the device provides greater precision and increases the speed of mechanical machining processes. The device can be used in the electronics, healthcare and manufacturing industries. M4 Sciences just signed an agreement with Fukuda Corp. in Tokyo to market the device to machine tool manufacturers.

The local, state, and federal dollars granted to park projects have been matched by the Purdue Research Foundation as well as friends of Purdue. In New Albany, property worth $10 million was donated to the Foundation. An additional $3 million was committed to the Herman and Heddy Kurz Purdue Technology Center in West Lafayette.

The Foundation-managed Trask Fund is designed to assist in the commercialization of the university's intellectual property by funding the research in Purdue laboratories and emerging companies in the very early stages of development. Two programs exist under this fund: The Trask Technology Innovation Awards and the Emerging Innovations Fund.

The objective of the Trask Technology Innovation Awards program is to support short-term projects that will enhance the value of intellectual property disclosed to the Foundation. The goal is to create a strong technology position for the intellectual property and increase its value to potential licensees. Awards in this program are up to $100,000 for a period of one year.

In 2008, Purdue Research Foundation introduced the Emerging Innovations Fund, an integrated approach to research innovation, development, and commercialization. A partnership between the Purdue Research Foundation and

10 SITES TO HELP ENTREPRENEURS SUCCEED

1. **Resources for entrepreneurs by state:** http://www.gaebler.com/resources-for-entrepreneurs-by-state.htm
2. **Entrepreneurs Great Web sites:** http://www.gaebler.com/web-sites-for-entrepreneurs.htm
3. **National Business Incubation Association:** http://www.nbia.org/
4. **Social networking site list:** http://www.careeroverview.com/blog/2009/100-best-social-sites-for-entrepreneurs/
5. **Business link to the U.S. government:** http://www.business.gov/
6. **Kauffman Foundation of Entrepreneurship:** http://www.entrepreneurship.org/
7. **Industry statistics and financial ratios:** http://www.bizstats.com/
8. **Market research:** http://www.nielsen.com/
9. **Financing business sites:** http://www.businessfinance.com/
10. **U.S. Patent and Trademark Office:** http://www.uspto.gov/

Discovery Park at Purdue University, the Emerging Innovations Fund is a unique, self-sustaining initiative that brings together money, people, and ideas to accelerate the commercialization of early-stage technologies in the Purdue community.

The Emerging Innovations Fund was initially capitalized with $1.5 million in donations, and will be a $5 million evergreen fund. Ventures formed by Purdue faculty, staff, students, and Purdue Research Park-based companies are eligible to apply for program funding in amounts of $20,000 to $200,000 over 12 to 18 months.

The Emerging Innovations Fund is one with strings attached. Funding is made on a competitive basis based on the quality of the application. Selections are made after a stringent review process during which technology, preliminary models, business plans, and budgets are arduously tested. Securing an award from the Emerging Innovations Fund is a starting place in itself, because funding is dependent upon the startup meeting specific milestones, a structure that promotes measureable process.

The Emerging Innovations Fund is designed to bridge the gap between the lab and the marketplace by infusing funds and management expertise at critical junctures. The fund helps Purdue entrepreneurs develop prototypes, assess patentability issues, ensure solid business plans, and improve the probability of attracting the next level of funding for nascent companies based on Purdue technologies. The ultimate goal of the fund is to create "investor-ready" companies, thus improving the probability of attracting additional funding and market interest.

The Foundation also has established a new organization for angel investors called the P3 Alliance. The invitation-only association provides members with information about new patents, licensing options, and other investment opportunities from Purdue University-based technologies earlier than the general public receives it

CONCLUSION

The lessons for success that we've learned are pretty simple: Entrepreneurs are some of the hardest working and motivated individuals you will ever know, and if you provide them with a supportive environment to help them succeed, then they will make you look good.

Other important lessons are that innovations and discoveries need an avenue for technology transfer, entrepreneurs' technologies and intellectual property need to be protected through patents and licensing, entrepreneurs need a space to work and opportunities to network, and venues need to be provided to secure venture funding and angel investments.

We're helping entrepreneurs find their diamonds.