The mission of the Purdue Research Foundation is to advance Purdue University’s quest for preeminence in discovery, learning and engagement through effective stewardship of assets.

The Foundation:

- Works with Purdue’s Master Planners to direct property and real estate management.
- Develops, manages and deploys real estate and financial assets.
- Provides accounting and financial activity support for Colleges’ discretionary funds.
- Manages grants received by Purdue.
- Protects Purdue’s intellectual property.
- Supports innovation and commercialization activities.
- Fosters Purdue’s role in economic development across the State of Indiana.
- Manages programs to support student affordability initiatives.
- Advances giving through the University Development Office.
- Develops and manages new programs and initiatives for the benefit of Purdue.
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It was a year of Giant Leaps for the Purdue Research Foundation, fitting in a year that Purdue University is celebrating its 150th anniversary.

For the $1+ billion Discovery Park District, a designated Opportunity Zone, we unveiled a master plan that outlined a 30-year commitment to transform the west side of campus into a mixed-use gateway for intellectual discourse and commercial partnerships. We broke ground on Aspire at Discovery Park, SEL Purdue and the Convergence Center for Innovation and Collaboration, three buildings that will impact the University for years to come. You can read more about those buildings in this report.

Up-and-coming companies continue to join our ecosystem, including Silvaco, which is creating next generation semiconductor devices, and ag tech leaders Inari and Solinftec.

We saw Endocyte Inc., co-founded by Phillip Low, the Purdue Presidential Scholar in Drug Discovery and the Ralph C. Corley Distinguished Professor of Chemistry, become the first Purdue startup to be valued at $1.5 billion. Shortly after, Endocyte was purchased by Swiss pharmaceutical giant Novartis for $2.1 billion, becoming the ninth Purdue startup to be bought by a major national or international company.

We also began working on a master plan for the Discovery Park District Residential Village at the southwest intersection of State Street and Airport Road stretching to U.S. 231. The village will have a new urbanist design that is environmentally friendly.

In 2018 the Foundation also continued its mission of serving Purdue by promoting innovation, commercializing new technologies while looking for ways to help economic development in the area, the state and the nation.

With an effort assisted by the Purdue Foundry, we had 25 startups created based on Purdue University intellectual property. There also were 20 other startups with company-owned intellectual property. Since 2013, Purdue has produced a total of 223 startups with more than $350 million in funding and investments and 300 new jobs. Our ecosystem continues to make Giant Leaps.

The Office of Technology Commercialization reported 302 invention disclosures, 21 copyright disclosures, 128 U.S. patents and 126 commercialization deals. Purdue ranked 17th worldwide among universities granted U.S. utility patents, marking the fourth straight year the University was in the National Academy of Inventors and Intellectual Property Owners Association’s top 20. Purdue is among only 13 U.S. universities rated in the top 20 each of the past four years.

The Back a Boiler Income Share Agreement program provides an alternative for Purdue University students to Federal Parent Plus and private students loans. The program continues to flourish since being introduced in Academic Year 2016-17. In December we announced the Foundation had raised $10.2 million to fund the Back a Boiler program for the next three years.

We also continued to provide other essential services to the University, including purchasing and selling real estate, providing accounting and financial services and managing Purdue’s endowment investments as outlined in our mission to serve Purdue.

We are proud of the contributions that the Purdue Research Foundation is making and look forward to more Giant Leaps in 2019 and beyond.

Brian Edelman
President
Purdue Research Foundation
The concept for the Purdue Research Foundation was originated by David E. Ross, a former president of Purdue University Board of Trustees who, in the fall of 1930, became concerned that industry did not have access to University knowledge and expertise the same way that farmers gained knowledge and help through the Purdue University Extension Service.

The Purdue Board of Trustees appointed a committee to find a way to make it happen. That committee recommended creating the Foundation, and two well-known board members put up the money to make it happen.

Ross also was a Purdue graduate and prolific inventor who was granted 88 patents, including one for steering column innovations still used in 21st century automobiles. He also was president of the Board of Trustees. Josiah Lilly was a business leader, industrialist and president of Eli Lilly and Co., founded by his father.

The two contributed $25,000 each, which would equate to about $3.7 million in today’s dollars when accounting for inflation. Ross also purchased a lot of land west of Ross-Ade Stadium and donated it to the Foundation.

One early contribution of the Foundation was creating the Amelia Earhart Fund for Aeronautical Research in 1936 that raised the $80,000 she used to purchase a Lockheed Electra airplane. A year later, she and navigator Fred Noonan disappeared during their attempt to fly around the world.

In 1938, the Foundation bought what had been the Theta Chi Fraternity House to become the Terry House, which housed 36 honors students. The house was a memorial of Oliver Perkins Terry, former head of the university student health service. It now houses the police department.

When Ross died in 1943, he left most of his estate to the Foundation. The Journal and Courier reported that including what he gave through his will, his gifts to Purdue amounted to more than $2.5 million, which would be worth about $36 million in today’s dollars.

In 1961, the Foundation created the Purdue Research Park. The Park system now has sites in West Lafayette, Indianapolis, Merrillville and New Albany. It was the third university-based park established in the United States. Stanford Research Park was founded in 1951, and the Research Triangle Park in North Carolina followed in 1959.

The Foundation has made numerous other contributions over the years as it continues to advance the Purdue University mission.
#5 AUTM
2017 WORLD RANKING FOR UNIVERSITY STARTUPS

University of California System
University of Texas System
Massachusetts Institute of Technology
Stanford University
Purdue University
Columbia University

17TH AMONG UNIVERSITIES WORLDWIDE GRANTED U.S. PATENTS

126 LICENSES AND OPTIONS
302 INVENTION DISCLOSURES
262 U.S. AND WORLD PATENT APPLICATIONS
25 STARTUPS FOUNDED ON PURDUE INNOVATIONS

NATIONAL ACADEMY OF INVENTORS • INTELLECTUAL PROPERTY OWNERS ASSOC. • 2017
Purdue University alumnus Neil Armstrong made the most famous Giant Leap in history when he stepped on the moon in 1969. But Purdue University faculty, students and alumni have been making Giant Leaps since the University’s founding in 1869.

Purdue University is celebrating its 150th anniversary in FY19, starting with Schweitzer Engineering Laboratories breaking ground last fall on SEL Purdue, a 100,000-square-foot facility for electric power research that will support 300-plus new high tech jobs. The facility also will serve as an anchor in the Purdue Research Foundation’s Discovery Park District. The celebration continues through homecoming 2019 with the conclusion of the Ever True campaign to raise $2.019 billion to advance Purdue’s mission in educating future leaders and serving our global society.

“150 Years of Giant Leaps” is a yearlong exploration of some of the world’s most pressing problems and Purdue’s mandate to be a part of the solutions.
Back a Boiler – ISA Fund
The Purdue Research Foundation launched the Back a Boiler Income Share Agreement program during the 2016-17 academic year as a way to make college more affordable for Purdue students. Back a Boiler is an alternative to private and Parent PLUS loans for students who need additional funding to pay for their education.

Helping students
In its first year, the Back a Boiler Fund distributed just more than $2 million to 160 juniors and seniors in 79 majors. The Foundation expanded the program the next year to include sophomores. To date, the Foundation has distributed nearly $9.5 million in 759 contracts representing more than 120 unique academic majors. The top seven colleges represented are Engineering, Science, Polytechnic Institute, Health and Human Sciences, Liberal Arts, Krannert School of Management and Agriculture.

How the program works
An Income Share Agreement is a contractual agreement in which a student receives education funding in exchange for an agreed upon percentage of post-graduation income over a set number of years.

Participants in Back a Boiler also may apply for available funding support from the Pave the Way program offered as a philanthropic component through the University Development Office.

Funding Back a Boiler
The Foundation announced in December that it had raised $10.2 million with a total of 11 investors, including four institutional investors, one multi-strategy hedge fund, one family office and five individual investors. The $10.2 million is expected to fund the Back a Boiler program for the next three years. Two years earlier, the initial funding for Back a Boiler raised $6.3 million with a total of three institutional investors. Purdue University was the first major research university in the U.S. to offer an income share agreement.

Other Purdue University affordability measures include:

- Purdue University President Mitch Daniels announced plans in April to hold tuition constant on the West Lafayette campus for a seventh year in a row, extending the tuition freeze through the 2019-20 academic year.
- Meal plans cut 10 percent, then held flat since 2014.
- Housing changes held flat since 2014.
- Partnership with Amazon to save students an average of about 31 percent in textbook costs.

As a result of these affordability measures, Purdue student and parent borrowing is down 31 percent since 2012 – equating to some $57 million saved for students.
“One of the biggest pros for the income share agreement was the fact that out-of-college pilots do not make a lot of money, especially looking at the costs for an educational program. I took out some federal loans, but Back a Boiler helped me avoid working multiple jobs while starting out as a flight instructor.”

ANDREW HOYLER
PURDUE POLYTECHNIC INSTITUTE 2017, PROFESSIONAL FLIGHT
The Discovery Park District is more than another area on the Purdue University campus. The $1+ billion project is meant to be a place where entrepreneurs work alongside researchers and students to come up with transformational ideas. It’s a place where companies will set up shop, researchers will experiment in labs, people will shop in stores and dine in restaurants, relax on green spaces and trails. It’s a place to work, live, play and to pursue giant leaps. The Purdue Research Foundation has a 30-year master plan for the 400-acre district that calls for a walkable, urban setting with an innovative and social ecosystem where companies can tap into Purdue’s strengths and assets.

The Discovery Park District began taking shape in 2018 with construction starting on Aspire at Discovery Park, SEL Purdue and the Convergence Center for Innovation and Collaboration.

Aspire is a private $86 million, 830-bed student housing complex that will open in fall 2019. Construction of the three four-story buildings, a joint venture between Balfour Beatty Campus Solutions and Walsh Investors, began in December 2017. The development includes studios, two-bedroom and four-bedroom apartment styles with space for retail, research, commerce and leisure.

The Convergence Center for Innovation and Collaboration along State Street will serve as the front door to the Discovery Park District. The Convergence is a five-story building that will be a resource hub for innovation, technology commercialization and entrepreneurial activities. The building will include a large lobby and plaza spaces for engagement and business activity and retail space on the first floor. It also includes a large plaza out front where events can be held.
The building will be a place where researchers from different areas of studies, entrepreneurs and industry will collaborate. The building also will house the Purdue Foundry, an entrepreneurship and commercialization accelerator, and the Purdue Office of Technology Commercialization, which operates one of the most comprehensive technology transfer programs among leading research universities in the United States. Convergence is expected to open for business for initial tenants in December 2019.

Schweitzer Engineering Laboratories broke ground in September on a 100,000-square-foot facility for electric research power research that will support more than 300 new high tech jobs. Edmund O. Schweitzer III, the Founder, President and Chief Technology Officer for the company, earned his bachelor’s and master’s degrees in electrical engineering from Purdue in 1968 and 1971. SEL joined Rolls-Royce in becoming the second international corporation to put a stake down in the district.

Schweitzer and his wife, Beatriz, also donated $1.5 million to the School of Electrical and Computer Engineering, or ECE, to endow a professorship, and another $1.5 million to support the school’s power and energy systems research area, now named the Schweitzer Power and Energy Systems.
“Purdue has world-renowned innovators that develop over 300 new technologies each year. Our team works diligently with them to protect Purdue’s intellectual property and to identify the best licensing partner to bring the innovation to market. It is an honor to help steward these important innovations into products that are helping people throughout Indiana and around the world.”

Brooke Beier
Vice President, Office of Technology Commercialization
Purdue University consistently ranks among top universities in technology transfer, startup creation

Purdue Research Foundation’s Office of Technology Commercialization (OTC) 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 Purdue University and benefit Purdue’s academic activities.

Purdue University has had record-setting years in many categories since 2013, including invention disclosures received, U.S. patent applications filed and issued, license deals executed, license income received and startups. In the past five years, OTC has executed more than 650 agreements containing more than 1,000 technologies. More than 125 of those agreements went to startup companies.

Peer Comparisons

The data in the above graph compares Purdue’s technology transfer activities to select peer universities in the following categories: new disclosures, new U.S. patent applications and commercialization deals finalized.

The graph above is based on 2017 peer institution date compiled by the Association of University Technology Managers (AUTM). Note: 2017 data is the most currently available from AUTM.
Purdue University ranks 17th among top 100 worldwide universities granted U.S. patents

Purdue University ranked 17th in the world among universities granted U.S. utility patents in 2017, according to a report released by the National Academy of Inventors (NAI) and the Intellectual Property Owners Association (IPO).

It marked the fourth straight year Purdue ranked in the top 20, putting it among only 13 universities to accomplish that feat. The patents issued to Purdue represent innovations from nearly all of the University’s core research areas, including engineering, agriculture, science, chemistry, computer science, technology, biomedicine, pharmaceuticals, health sciences, information technology and veterinary medicine.

Purdue, NSWC Crane researchers display top innovations at technology showcase

Purdue University and NSWC Crane researchers presented their top innovations available for licensing, including advancements in pharmaceuticals, agriculture, materials and other fields, during the second annual Purdue Technology Showcase.

More than 60 business executives, investors and entrepreneurs from at least a half dozen states, including as far away as Maryland and Texas, crowded into the Herman and Heddy Kurz Purdue Technology Center on February 21 to learn about the technologies available for licensing through the Purdue Research Foundation’s Office of Technology Commercialization. The next showcase is May 16, 2019.

“The showcase was a huge success. The energy from the attendees and the innovators who were pitching was outstanding,” said Brooke Beier, OTC’s vice president. “Purdue innovations have the opportunity to make an impact in the world and we hope events like this showcase continue to shine a light on these technologies and the exciting research at Purdue.”

Trask provides more than $225,000 to advance Purdue innovations

Eight Purdue researchers received a total of nearly $236,000 from the Trask Innovation Fund in 2018:

Mohammad Jahanshahi, Assistant Professor in the Lyles School of Civil Engineering, received $40,835 for a technology called CRAQ, which stands for Crack Recognition and Quantification software. The technology detects cracks in steel components for nuclear power plants and numerous other infrastructures, including sewer pipelines, roads, bridges, wind turbines and dams.

Sunil Bhave, Associate Professor in the School of Electrical and Computer Engineering, was awarded $35,000 for a technology that uses micro-electro-mechanical systems for inertial navigation when conventional GPS signals are not feasible.

Tamara Kinzer-Ursem, Assistant Professor in the Weldon School of Biomedical Engineering, was awarded $29,705 for a technology that aims to increase the efficiency of infectious disease monitoring and response by providing rapid and accurate pathogen detection platforms at the point-of-care.

Jean Chmielewski, the Alice Watson Kramer Distinguisher Professor of Chemistry in the College of Science, received $25,000 for a dual antimicrobial agent that enhances antibiotics through improved cell penetration and more targeted delivery that is effective against antimicrobial resistant bacteria, including MRSA infections, and shows promise in reducing hospital-acquired infections.

Xiaoming Wang, Assistant Professor in the School of Engineering Technology, was awarded $25,000 for a technology that strengthens aluminum alloys with the addition of composite materials that ‘stitch’ together the alloy yielding a significantly stronger yet lightweight and temperature tolerant alloy that is compatible with the additive manufacturing or 3D printing process.

Linda Wang, the Maxine Spencer Nichols Professor of Chemical Engineering, received $25,000 for “New Technologies for Converting Polyolefin Plastic Waste into Pristine Polymers or Clean Fuels.” The technology converts plastic waste into clean fuel or other useful products. The conversion would reduce the waste stock in the United States while also increasing the recycling industry’s economic impact.

You-Yeon Won, Professor of Chemical Engineering, received $20,000 for “Development of Radiation-Controlled Chemotherapeutic Release Formulations for Intratumoral Chemo-Radio Combination Therapy for Locally Advanced Tumors.” He has developed a radiation-controlled drug-release formulation that improves the treatment of locally advanced tumors more effectively for some of the 60,000 people diagnosed with head and neck cancer a year in the United States.

Robert Stwalley, Assistant Professor of Agricultural and Biological Engineering, received $20,000 for “Hog Cooling Panel Control Package Upgrade.” The technology, which is a cooling pad for sows, uses aluminum tread plates on top of copper pipes that circulate water. The cooling pad reduces body temperature, which is important for sows with large litters, as higher body temperatures will decrease the amount of milk production.
World War II weapon used in new battle: Combating Parkinson’s disease

A World War II chemical weapon antidote is shown to be effective combating a new enemy: Parkinson’s disease.

Parkinson’s is characterized by the steady and progressive loss of brain cells. Those afflicted show early symptoms of trembling in their hands, arms, legs, jaw and face. It can progress to the point where walking, talking or completing the most basic tasks becomes a daily challenge.

Half a million people in the U.S. are currently living with Parkinson’s disease, and another 50,000 people are diagnosed with this neurodegenerative disorder every year, according to the National Institutes of Health.

Recent studies in the Purdue laboratory of Riyi Shi, Professor of Neuroscience and Biomedical Engineering, reveal a new possible treatment for Parkinson’s disease from the chemical warfare antidote. The antidote drug (dimercaprol) is proving to be effective at removing acrolein, a neurotoxin that is produced in the body after nerve cells are damaged and that is directly correlated with Parkinson’s disease. In addition, acrolein has been shown to increase pain and trigger a cascade of biochemical events postulated to intensify the severity of neurodegenerative diseases like Parkinson’s.

Concrete infused with wood nanocrystals is stronger

Researchers from Purdue are studying whether concrete is made stronger by infusing it with microscopic-sized nanocrystals from wood are moving from the laboratory to the real world with a bridge that will be built in California this spring.

The research team, led by Jeffrey Youngblood, Professor of Materials Engineering, have been working with cellulose nanocrystals, byproducts generated by the paper, bioenergy, agriculture and pulp industries, to find the best mixture to strengthen concrete, the most common man-made material in the world.

Strengthening concrete could have other implications, such as making items made with concrete thinner and lighter while retaining the same strength with a potential side benefit of decreasing carbon dioxide released into the atmosphere. Cement plants account for an estimated 8 percent of global emissions of carbon dioxide, a main cause of climate change.

Nonaddictive drug compound could replace opioids for chronic pain sufferers

A new nonaddictive drug compound discovered by Purdue researchers could lead to the treatment of chronic pain without the need to rely on opioids.

A compound developed by a research team led by Val Watts, Professor of Medicinal Chemistry and Molecular Pharmacology and associate dean for research in Purdue’s College of Pharmacy, shows unparalleled selectivity in inhibiting the adenylyl cyclase 1 (AC1), making it a potential target for treating pain and reducing the dependency on opioids for pain management.

In 2017, the U.S. Department of Health and Human Service declared a public health emergency regarding the spike in opioid overdoses. In 2017, 130 people died each day from opioid-related drug overdoses. According to the Centers for Disease Control and Prevention, overdose deaths involving prescription opioids were six times higher in 2017 than in 1999. From 1999 to 2017, almost 400,000 people died from an overdose involving any opioid, including prescription and illicit opioids.
Successful Purdue startups acquired by national or international companies

**Endocyte Inc.** signed a $2.1 billion deal in 2018 to be purchased by Swiss pharmaceutical giant Novartis AG. Endocyte Inc. (NASDAQ: ECYT), a biopharmaceutical company with about 70 employees, owns licenses to several Purdue technologies and is moving promising cancer drug platforms through various clinical trials and pre-clinical work.

**Arxan Defense Systems**, a cybersecurity and application security company, sold to Microsemi Corp. in 2010 for an undisclosed amount. In 2018, Microsemi was purchased by Microchip Technology for more than $10 billion. Arxan’s primary technology was developed by Mikhail Atallah, a Purdue Distinguished Professor of Computer Science and Co-Founder of Arxan.

**BASi Bioanalytical Systems Inc.**, a medical contract research services company, went public in 1997, creating a liquidity event for its existing shareholders. The company joined operations with Seventh Wave Laboratories LLC in July. Pete Kissinger, Purdue Professor of Analytical Chemistry, founded BASi.

**DATTUS Inc.**, a leader in industrial Internet of Things, launched by Anurag Garg and Lokesh Gupta, a pair of Purdue Electrical and Computer Engineering doctoral students, was sold for an undisclosed price in July to Plex Systems, based in Troy, Michigan.

**Griffin Analytics**, a mass spectrometry company, merged with ICx Technologies in 2006 and was later purchased as part of a package by FLIR Systems Inc. in 2010 for about $274 million. Dennis Barket, a graduate student at Purdue under R. Graham Cooks, the Henry B. Hass Distinguished Professor, co-founded the company with Cooks.

**Prosolia Inc.** and Purdue Research Foundation in July sold exclusive rights to desorption electrospray ionization, or DESI, technology for all mass spectrometry applications for $30 million to Waters Corp., based in Milford, Massachusetts. Prosolia was established in 2003 to commercialize another technology from the laboratory of Cooks.

**Spensa Technologies**, a digital ag technology company, was sold for an undisclosed amount in March to DTN, a global insights and analysis company based in Minneapolis. Spensa was founded in 2009 by Johnny Park, a Research Assistant Professor of Electrical and Computer Engineering at Purdue.

**PGC, Purdue GMC Center LLC** a producer of non-sterile pharmaceutical products, was acquired in 2016 by Dr. Allen Chao, a Purdue Alumnus and Founder of Watson Pharmaceuticals.

**SSCI Inc.**, a pharmaceutical product development company, was acquired by Aptuit Inc. in 2006 for an undisclosed amount. In 2015, AMRI acquired Aptuit for $60 million. SSCI was co-founded by Steve Byrn, the Charles B. Jordan Professor of Medicinal Chemistry in the College of Pharmacy, and his wife, Sally Byrn.
NIH awards MR-Link $228,325 to advance development of its magnetic resonance-compatible bio-recording system

A Purdue-affiliated startup that is developing an affordable device to allow researchers and medical professionals to conduct MRI scans with increased efficiency, received a grant of $228,325 from the National Institutes of Health.

MR-Link LLC of West Lafayette, Indiana secured the Small Business Technology Transfer (STTR) Phase I grant in April. The goal of the program is to use federal funds to support scientific excellence and increase private sector commercialization of technological innovation.

The coin-sized device works simultaneously with an MRI system to record electro-physiological signals and perform various imaging scans. The device allows researchers to record, stimulate and image the brain and other organs in synchronization the MRI system, allowing them and future medical professionals to understand patient’s physiology more effectively.

Purdue researchers say the device has great potential to significantly improve the safety, efficacy and precision of medical diagnostics for patients who suffer from epilepsy, Parkinson’s disease, depression and other diseases. They also say it is more affordable than other options and could eliminated health risks and provide better imaging.

Bad fat to good fat: Purdue-based startup developing technology aimed at helping treat obesity, diabetes

Imagine being able to turn bad fat into good fat inside your own body without exercising, but rather a simple injection.

That’s the goal of technology from a Purdue University-based startup, Adipo Therapeutics LLC, which has received a federal grant for its work to help people struggling with obesity and diabetes.

More than one-third of Americans are obese, and nearly 10 percent have diabetes, according to the Centers for Disease Control and Prevention.

Obesity is also a contributing factor to developing Type 2 diabetes. So, removing excess fat through nanoparticle injections would likely decrease the odds of developing that disease.

Adipo received a Small Business Innovative Research grant of $198,323 from the National Institutes of Health to further develop and optimize its technology platform to help people with obesity and diabetes.

SUCCESSFUL COMPANIES

Purdue-affiliated Adranos Inc. raises $800,000 to develop high-performance propellant for missile, space launch systems

Adranos Inc., a Purdue-affiliated company developing a novel high-performance, solid propellant for long-range missile and space launch systems, announced in October it had raised $800,000 to further advance the technology.

Adranos also found out in October that the U.S. Army had selected it as a finalist in its xTech search competition, awarding the company $125,000 and the opportunity to demonstrate its high-performance rocket propellant for senior Pentagon leaders.

Adranos is developing a propellant called ALITEC that uses an aluminum, lithium alloy that has more thrust and is less corrosive than traditional solid propellants. Brandon Terry discovered the innovative rocket fuel while working on his Ph.D. at Purdue.

Adranos says its propellant is better because it would dramatically increase the range of a missile, giving military personnel a competitive advantage and making resupply missions safer. It also could reduce the missile smoke signature, making it more difficult to detect.

The more efficient propellant also could allow the Army to use smaller, more affordable missiles because each missile would need less propellant and could allow a craft to carry more missiles, increasing the number of possible strikes.

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From idea to impact, Purdue startups span the globe bringing life-changing innovations to our global society. In 2018, another 25 startups using Purdue intellectual property joined the ranks of Purdue’s esteemed Startup Class program. These 25 startups have signed licenses with the Purdue Research Foundation, another 20 startups originated from innovator-owned intellectual property in the same year.

Since 2013, 128 startups have licensed Purdue intellectual property through the Purdue Research Foundation’s Office of Technology Commercialization, and a total of 223 startups overall have emerged from the Purdue ecosystem. Those 223 startups have led to more than $350 million in funding and investments generated and more than 300 new jobs. Major international companies have acquired nine of Purdue’s startups for a total of more than $2.3 billion.

“Purdue has a 150-year history of producing world-class research. Five years ago we set out to establish an equally strong commercialization ecosystem to ramp up the translation of this research into the market and into real-world solutions. These efforts are clearly beginning to bear fruit, and to encourage us that these gains are just a beginning.”

Purdue University President Mitch Daniels
Individuals with visual impairment can “see” through device that turns digital images into physical sensations

David Schwarte, an assistive technology specialist in the Department of Information Technology at Purdue University, knows what it is like to learn in a classroom when challenged with visual impairment.

Schwarte, who has a visual impairment, says it is nearly impossible to understand what a professor is talking about when teaching from a PowerPoint on a large screen. To understand what is happening, the student has to depend on either an audio description or a 3-D printed mockup of the image on screen.

Now a new device designed by HaptImage LLC is assisting students of all ages with visual impairments to “see” and learn about what is on the screen.

“There are many areas in science, engineering and technology where the end-user needs to visualize a number of different graphics,” Schwarte said. “This system has the advantage of helping people visualize the graphics more instantly. HaptImage’s technology is important because students can come into a very technical field and still be able to succeed.”

Ting Zhang, a doctoral student in the School of Industrial Engineering, created the system with her co-advisors, Scientific Officer for HaptImage Juan Wachs, a professor in the School of Industrial Engineering, and Brad Duerstock, a professor in the School of Industrial Engineering and the Weldon School of Biomedical Engineering, and CEO of the company.

Zhang co-founded HaptImage with Shruthi Suresh, a doctoral student in Weldon School of Biomedical Engineering, in order to commercialize the technology.
More nutritious, nutty butter flavor, non-GMO ‘orange corn’ launches in US markets

“Orange corn,” a more nutritious, naturally selected variety of corn is now available in the U.S. markets through Purdue-affiliated startup NutraMaize LLC.

Torbert Rocheford, the Patterson Endowed Chair in Translational Genomics for Crop Improvement in the Purdue College of Agriculture’s Department of Agronomy, used a process known as biofortification to naturally increase the amount of antioxidant carotenoids in corn, making the corn more nutritious, and creating a deep orange color. The human body converts certain provitamin A carotenoids, such as beta-carotene, into vitamin A, an essential vitamin that promotes eye health and supports the immune system.

“The project began as part of an ongoing humanitarian effort called HarvestPlus to improve nutrition in developing countries,” said Rocheford, who began working on naturally increasing the amount of health benefiting carotenoids in corn over 20 years ago. He did not originally plan to market the orange corn in the United States. However, when orange corn varieties were introduced in Africa, some began to ask if it was grown and consumed in the U.S.

“So, I decided to grow some here and share it. The response was overwhelmingly positive. I had people tell me that the orange corn made the best grits and cornbread they had ever eaten. So I thought it made a lot of sense to offer it in the U.S.”

Rocheford and his son, Evan, co-founded NutraMaize to commercialize the corn in the U.S. NutraMaize is marketing the corn under the brand name “Professor Torbert’s Orange Corn,” and it is available at ProfessorTorberts.com.
Purdue researchers devise 3D printer that could make energetic materials safer, in more friendly way

Next Offset Solutions has devised a method of 3D printing that can produce energetic materials with fine geometric features faster and with less expense than traditional methods, while also being safer and more environmentally friendly.

Jeffrey Rhoads, a professor in Purdue’s School of Mechanical Engineering, and Emre Gunduz, a former research assistant professor at the school, along with a few colleagues, have launched a faculty-owned startup called Next Offset Solutions Inc. that makes the printers and the energetic materials, including solid rocket fuels, other propellants and pyrotechnics. The energetic materials are produced through a method that allows the printer to produce viscous materials with a consistency similar to clay.

The process allows the researchers to safely deposit energetic materials with a high level of precision.

“We have shown that we can print these energetic materials without voids, which is key,” Rhoads said. “Voids are bad in energetic materials because they typically lead to inconsistent, sometimes catastrophic, burns.”

The printer functions in a manner similar to typical 3D printers except it applies high-amplitude ultrasonic vibrations to the nozzle, reducing friction on the nozzle walls and thus allowing the highly viscous materials to be pushed through. The method also allows for more precise flow control.
Spirrow Therapeutics developing novel treatment for life-threatening lung condition

Spirrow Therapeutics is developing a novel treatment for a life-threatening lung condition known as acute respiratory distress syndrome, or ARDS, which kills about 40 percent of its victims.

The United States has about 220,000 cases a year of ARDS, which deactivates the naturally occurring lung surfactant in patients. That causes a decreased ability to inflate the tiny air sacs in lungs called alveoli. When inadequately inflated, the alveoli cannot totally oxygenate a patient’s blood stream, which can lead to organ failure and other health problems.

ARDS can be caused by pneumonia, septic shock, trauma, inhaling chemicals or other trauma.

Spirrow Therapeutics was founded by Davis Arick and Kyle Kim, who both earned degrees from the Davidson School of Chemical Engineering, and You-Yeon Won, a Professor in the school. Originally interested in neonatal lung function, the researchers turned their attention to ARDS after discovering a greater need there.
New instruments push boundaries for precise measurements in jet engines, gas turbines

Petal Solutions LLC is developing instruments to precisely measure pressure, temperature and other analytics inside the harsh environments of rocket engines and gas turbines.

Petal Solutions was founded by Guillermo Paniagua, a professor of mechanical engineering, and Valeria Andreoli, David Cuadrado and James Braun, doctoral research assistants. Paniagua said the group’s expertise in computational fluid dynamics has allowed the researchers to push the boundaries in cooling and design probe technologies.

“It is fantastic to be able to take our hard work from the classroom and lab developments to create instruments that will help society,” said Paniagua, President of Petal Solutions.

The researchers decided to design their own instruments to mount in engines to track engine performance because they couldn’t find anything adequate on the market.

“Conventional instruments all had various limitations,” said Andreoli, who is pursuing a Ph.D. focused on engine transient analysis. “They are limited in terms of maximum temperatures they can withstand. They are limited in terms of how fast they can react. Things happen inside an engine extremely fast. If you want to understand how the engine is performing, you need a measurement device that can capture all the data.”

The researchers were confident they could build more precise instruments that could withstand higher temperatures while providing a high sampling rate with high accuracy, particularly downstream of the combustion chamber.

The researchers say they will be able to tailor products to create sensing devices and in-house software packages customers need.
The Purdue Foundry is an on-campus startup accelerator where Purdue students, staff, faculty and alumni with startup aspiration go to learn how to commercialize their ideas or projects. It is a place where innovators become entrepreneurs through advice they receive about entity formation, ideation, market analysis and business model development.

Since its founding in 2013, the Purdue Foundry has assisted more than 200 startups and nearly 500 entrepreneurs.
The Purdue Foundry offers a number of programs, networks and funding opportunities for entrepreneurs, including:

**Firestarter**

Offers entrepreneurs expert advice on startup creation from business plans to marketing research. The program also opens the doors for members and continued education opportunities through the Purdue Foundry, Purdue Research Foundation, workshops and more.

**Purdue Ventures**

The startup funding arm of the Purdue Foundry, helps find and provide financial support for startup companies. By providing funding for very early-stage companies, helps speed the process from discovery to delivery.

Ag-celerator — This $2 million fund is designed to provide critical startup support for Purdue innovators who wish to commercialize patented intellectual property or Purdue “know-how” technologies in plant sciences, including areas of research in crop optimization, hybrid and seed development and precision agriculture. The fund was launched by the College of Agriculture and the Purdue Research Foundation in 2015 as part of the Purdue Moves program.

Elevate Purdue Foundry Fund — The fund provides money for Purdue-affiliated startups with pre-seed, seed and early-stage investment and co-investment programs. The fund is a joint venture between Elevate Ventures, a private venture development organization, and the Purdue Foundry.

Foundry Investment Fund — The $12 million Foundry Investment Fund, a not-for-profit fund, invests in Purdue-based or Purdue-connected companies commercializing select life science technologies. The fund provides a match to outside investors’ funds, adding critical capital for the transition from the discovery of a promising technology to founding a viable life sciences company. The fund has invested about $4.3 million in companies since its founding in 2014 through a partnership between Purdue Research Foundation and Cook Medical.

**WomenIN**

WomenIN is an initiative created by the Purdue Foundry to encourage women throughout the entire state of Indiana in launching their technology- or STEM-based startups and to provide entrepreneurial resources in scaling up their businesses. WomenIN has an online community of over 500 members where women and supporters from around the state can connect and collaborate.
Purdue Research Park of West Lafayette, a 725-acre site just north of Purdue University’s campus, is the largest university-affiliated business incubation complex in the country. The Park is home to nearly 240 companies and also offers 350,000 square feet of incubation space.

The Park is under development by the Purdue Research Foundation, a private, non-profit created by Purdue with a mission to advance the University’s quest for preeminence in discovery, learning and engagement.

The Purdue Technology Centers of West Lafayette, anchors of the award-winning Park, support emerging and developing technologies, including life sciences, homeland security, engineering, advanced manufacturing and information technology.
The companies that moved into the Purdue Technology Centers in 2018 include:

- **Inari**, a Flagship Pioneering Company that created the world’s first Seed Foundry as part of its mission to reintroduce genetic diversity, revolutionize the seed industry and create a food system that is environmentally responsible, promotes better health and is more resilient.

- **Silvaco Inc.**, based in Santa Clara, California, announced plans to form an innovative partnership with the Purdue Research Foundation aimed at extending Moore’s law by modeling and simulating transistors and new memory technologies that approach atomistic scale in next generation semiconductor processes and materials.

- **Solinftec**, a digital agriculture company that grew quickly in Latin America by making sugar cane and row crop operations more efficient and plans to bring high-tech solutions to American farmers. It also announced plans to create up to 330 high-tech jobs by 2022.

The Purdue Technology Centers offer state-of-the-art facilities that provide high-tech advantages to give companies a competitive edge.

Many of the innovations that emerge from the interdisciplinary research underway at Purdue get their start at the park. Companies benefit from an atmosphere of being around other innovative businesses and networking opportunities and being part of one of the most vibrant entrepreneurial ecosystems in the country with top-rate students available through an internship program.
Purdue@Westgate is a collaboration between the Purdue Research Foundation, WestGate Authority and Naval Surface Warfare Center Division (NSWC-Crane) and others to support technology research, commercialization and job creation throughout Southern Indiana.

The site was given an Accelerating Economic Development Award in 2018 by the Indiana Regional Councils, which represents 15 regional planning organizations throughout the state.

The program has adopted some of the same strategies as Purdue Research Foundation in commercializing innovations. It has created its own version of the Purdue Foundry, a commercialization accelerator founded in 2013. Its four-part program led by entrepreneurs in residence is designed to help innovators turn ideas into businesses. It held a State of Indiana Technology Showcase which gave more than 30 innovators an opportunity to present their ideas to international company representatives, investors and entrepreneurs.
The Purdue Railyard is a place where entrepreneurs creating a startup can find just about everything needed for success. The Railyard, managed by the Purdue Research Foundation, is one of the largest co-working facilities in the United States with 26,140-square-feet of space.

Amenities include 24/7 access, 14 conference rooms, three rooms for private calls, business and mailing services and access to the Express Café, open 7 a.m. to 3 p.m. M-F. A membership also includes a business address and mailbox and access to numerous networking events with other entrepreneurs.

The Railyard is located at the Purdue Research Park in the Herman and Heddy Kurz Purdue Technology Center, 1281 Win Hentschel Blvd., in West Lafayette, Indiana.

The Railyard pays homage to the Purdue Schenectady No. 1, the first full-scale locomotive used in the Purdue Locomotive Testing Plant in the late 1880s and early 1900s and established Purdue as a national leader in transportation research and innovation. The space is highlighted with antique railroad memorabilia, a stage for presentations, and a wooden two-story water tower meeting space.
Purdue Research Foundation’s Information Systems Department provides IT support through both technical support and consulting to startups and established businesses based in the five-site Purdue Research Park network. Its professionals travel throughout the state to service clients’ needs.

In 2018 the Department refined its business continuity plan, hired a security administrator focused solely on day-to-day security, added dual factor authentication and upgraded its ticketing system. The help desk ticketing system is an important avenue to serve internal and external requests for information or information technology support. The system received nearly 4,300 requests for assistance last year.

“PRF’s Information Systems Department holds a security mindset in everything we do. We continue to implement new technologies and work with professionals at the Foundation to make sure everyone understands that security is a shared responsibility in our day-to-day work lives.”

Mary-Claire Cartwright
Vice President of Information Systems
The Purdue Research Foundation’s real estate division plays an essential role in purchasing, selling and making other property transactions needed to meet the University’s short- and long-term campus plan.

Purdue University, through its Master Plan, designates areas for the potential expansion of campus facilities for academic and other student and faculty use. The Purdue Research Foundation, through its current real estate holdings and future acquisitions as directed by the University, supports the continued development of the main campus and its satellite campuses. This allows the Foundation to carry the financial burden of the land until needed by the University, helping to keep costs down.

**Commercial Real Estate**

The Foundation owns commercial real estate that meets the consumer needs of students and faculty. Purdue West, at 1400 State Street, serves the far west end of campus with shops, restaurants and financial establishments. The Foundation also manages and operates Seng-Liang Wang Hall at 516 Northwestern Ave. The 147,000-square-foot facility is a public/private partnership between the Foundation and Purdue University. The building is used for academic and commercial purposes.

**Residential Real Estate**

The Foundation provides rental housing appropriate for University students, staff and faculty on or near the West Lafayette campus. The properties are considered prime locations for most students and the occupancy rate in the rental units was nearly 100 percent in FY18.

"The Purdue Research Park network of five sites across Indiana provides places for startups using University intellectual property and coming out of the Purdue Foundry with leasable space that allows them to grow. We also lease available office and laboratory facilities to established companies that value having access to top-rate students and researchers at a leading research university."

David Hodde, Assistant Vice President
Director of Real Estate
The Purdue Research Foundation has some incredible stories to tell, and it’s the job of the Department of Marketing and Communications to make sure those stories are told. The Department directs all earned, owned and paid media for the Foundation, Purdue Research Park networks, Purdue Foundry, Anvil, Discovery Park District, Back a Boiler and Purdue Office of Technology Commercialization.

During the past fiscal year, the Department set records for the number of media placements for the year overall and for 10 of the 12 months. The Department’s marketing strategies focused on the Discovery Park District, with the master plan being announced, the continued success of the Back a Boiler and of the Purdue startup ecosystem, which saw the University hit a milestone in new company creation with 223 startups, more than $350 million in funding and investments generated and more than 300 new jobs since 2013.

The Department also helps provide media training for faculty entrepreneurs as well as create videos, photographs and brochures to support the mission of the Foundation. Its digital monthly publications, Tech Transfer Express and Startup Express each have more than 100,000 subscribers, and the Department’s social media surpassed all records in FY18.

“It was another record-breaking year for earned media with news releases leading to stories in the Wall Street Journal, New York Times, ABC News, The Washington Post and numerous other publications. We are fortunate to have Purdue faculty and students developing and commercializing research that leads to strong job creation and serving our global society.”

Cynthia Sequin, Assistant Vice President of Marketing and Communications
The Department of Human Resources provides human resources leadership and support for all Purdue Research Foundation departments and divisions, including Purdue Foundry, Purdue Research Park, Purdue Office of Technology Commercialization, Office of Investments and the University Development Office.

The Department is responsible for recruiting employees to fill openings at the Foundation and posts job openings for Purdue Research Park-based companies. The staff provides employee relations assistance, mediation, recruiting, benefits administration, educational initiatives and other services to support the employment needs of the Foundation’s 350-plus employees. In addition, the Department provides training on topics such as diversity awareness, sexual harassment prevention, and CPR/AED training. In-house training on topics relevant to the work force and a 10,000 Steps wellness initiative also are provided on an annual basis.

The Department also provides support in the following areas:

- Organizational direction through talent recruitment, screening and interviewing; strategic management of candidate selection; and administration of exit interviews.
- Planning, monitoring and analysis of the Foundation’s performance evaluation process.
- Oversight of all aspects of benefits selection, enrollment and management for PRF staff and facilitation of benefit and retirement planning seminars.
- Legal compliance including monitoring and implementing applicable human resource federal and state requirements with regard to FMLA and ADA; conducting investigations; maintaining records and complying with federal filing requirements.

“It is the mission of PRF’s Human Resources Department to provide quality human resource management, expert employee relations and mediation assistance, exceptional recruiting and talent acquisition services, and a robust menu of employee training and educational opportunities to promote individual success and increase overall value to the Foundation.”

Judith Hall, PHR, SHRM-CP, Chief Human Resources Officer
Private giving supports Purdue in its mission to deliver higher education at the highest proven value by creating new scholarships, increasing faculty support, and funding cutting-edge facilities and innovative programs.

Ever True: The Campaign for Purdue University concludes in 2019. As of December 1, 2018, 195,367 donors have participated, raising more than $2.2 billion. To participate in the campaign, visit purdue.edu/EverTrue.

Records that Purdue donors set in the 2017–18 fiscal year include:

- Total dollars raised: $451.5 million, topping the 2016–17 record of $351.9 million.
- Number of individual donors: 86,176, up from the 2016–17 record of 85,465.
- Dollars raised for student support: $88.2 million, up from the 2016–17 record of $75.4 million. (The campaign goal of doubling annual student support from $33.5 million was met in 2016–17.)
- Number of gifts of $1 million or more: 78, accounting for $289.0 million in donations.
- Largest single-day fundraising campaign in higher education: $37.6 million from Purdue Day of Giving, which included participation from all 50 states and 58 countries.

Additional campaign milestones and impacts:

- Bruce and Beth White, along with the Dean and Barbara White Foundation, gave $30 million to transform the Union Club Hotel in the Purdue Memorial Union into a world-class establishment that will provide a learning environment for students.
- The sale of a Russian stamp collection—donated to the University by Arden Bement, retired head of Purdue’s School of Nuclear Engineering—netted more than $140,000 to support the Arden L. Bement Jr. Award, a top research honor bestowed annually on a faculty member.
- Edmund Schweitzer, founder of Schweitzer Engineering Laboratories, and his wife, Beatriz, donated $1.5 million to support the School of Electrical and Computer Engineering’s power and energy systems research area and another $1.5 million to name a professorship.
- With a $10 million gift, Dick Buell established the L. Dick Buell Endowed Head Men’s Basketball Coaching position, held by Matt Painter. It’s the largest gift ever to Purdue Athletics.
- JeanAnne and Jim Chaney’s $8 million gift to the College of Pharmacy, targeted to scholarships and a potential new facility for the college, means a more affordable education for hundreds of bright students and an enhanced environment in which to learn.
IN 24 HOURS, THE FIFTH ANNUAL PURDUE DAY OF GIVING RAISED $37.6 MILLION FROM 18,663 DONATIONS, WHICH SET THE RECORD FOR THE LARGEST SINGLE-DAY FUNDRAISING CAMPAIGN IN HIGHER EDUCATION. THE SIXTH ANNUAL GIVING DAY IS SET FOR APRIL 24, 2019.
Consolidated Statement of Financial Position

June 30, 2018 (In Thousands)

<table>
<thead>
<tr>
<th>Total</th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Assets</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash and cash equivalents</td>
<td>$ 11,520</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Accounts and other receivables</td>
<td>25,239</td>
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<td></td>
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</tr>
<tr>
<td>Investments</td>
<td>2,658,519</td>
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<td></td>
</tr>
<tr>
<td>Notes receivable</td>
<td>8,326</td>
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<tr>
<td>Investments in affiliates</td>
<td>8,446</td>
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</tr>
<tr>
<td>Net real estate</td>
<td>239,918</td>
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<td></td>
<td></td>
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</tr>
<tr>
<td>Net other assets and equipment</td>
<td>18,134</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Interest in charitable perpetual trusts</td>
<td>16,135</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total assets</td>
<td>$ 2,986,237</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Liabilities and net assets</th>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Liabilities:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable and other accrued expenses</td>
<td>20,403</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Due on split interest agreements</td>
<td>49,724</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Net funds held as custodian</td>
<td>59,678</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Net funds held for Purdue University</td>
<td>1,684,467</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>Bonds payable</td>
<td>60,200</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Mortgages, notes payable, and line of credit</td>
<td>87,570</td>
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<td></td>
</tr>
<tr>
<td>Gift annuity payable</td>
<td>4,792</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other liabilities</td>
<td>3,305</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total liabilities</td>
<td>1,970,139</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Net assets: |       |       |       |       |       |
| Unrestricted | 267,814 |
| Temporarily restricted | 598,854 |
| Permanently restricted | 149,430 |
| Total net assets | $ 1,016,098 |

<table>
<thead>
<tr>
<th>Total liabilities and net assets</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total liabilities and net assets</td>
<td>$ 2,986,237</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Finance and Accounting

Finance and Investments support all the activities of the Purdue Research Foundation and is involved in all the operations activities, compliance and governance that allow the Purdue Research Foundation to function as a nonprofit corporation.

Office of Investments

The Purdue Research Foundation’s Office of Investments manages the combined Purdue University and the Purdue Research Foundation endowments as well as retirement assets. All funds are managed according to the policies established by the Foundation’s Board of Directors Finance Audit Committee. As of June 30, 2018, funds under management including endowed funds, trusts, annuities and retirement funds totaled approximately $6 billion.

Accounting and Financial Reporting

The consolidated statements of financial position and activities for the fiscal year ending June 30, 2018 are presented.
## Consolidated Statement of Activities

June 30, 2018 (In Thousands)

### Revenue and support

<table>
<thead>
<tr>
<th>Description</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amounts received for Purdue University research projects</td>
<td>$661</td>
<td>$-</td>
<td>$-</td>
<td>$661</td>
</tr>
<tr>
<td>Payments to Purdue University</td>
<td>(661)</td>
<td>-</td>
<td>-</td>
<td>(661)</td>
</tr>
<tr>
<td>Contributions</td>
<td>6,238</td>
<td>18,488</td>
<td>4,843</td>
<td>29,569</td>
</tr>
<tr>
<td>Income on investments</td>
<td>1,079</td>
<td>17,548</td>
<td>-</td>
<td>18,627</td>
</tr>
<tr>
<td>Net unrealized and realized gains on investments</td>
<td>(1,916)</td>
<td>53,579</td>
<td>-</td>
<td>51,663</td>
</tr>
<tr>
<td>Gain on sale/exchange of real estate</td>
<td>3,116</td>
<td>-</td>
<td>-</td>
<td>3,116</td>
</tr>
<tr>
<td>Change in value of split interest agreements</td>
<td>-</td>
<td>(1,058)</td>
<td>-</td>
<td>(1,058)</td>
</tr>
<tr>
<td>Increase in interest in perpetual trust</td>
<td>-</td>
<td>-</td>
<td>609</td>
<td>609</td>
</tr>
<tr>
<td>Administrative fees</td>
<td>30,941</td>
<td>-</td>
<td>-</td>
<td>30,941</td>
</tr>
<tr>
<td>Rents</td>
<td>21,360</td>
<td>-</td>
<td>-</td>
<td>21,360</td>
</tr>
<tr>
<td>Royalties</td>
<td>3,008</td>
<td>-</td>
<td>-</td>
<td>3,008</td>
</tr>
<tr>
<td>Other</td>
<td>2,958</td>
<td>-</td>
<td>-</td>
<td>2,958</td>
</tr>
<tr>
<td>Net assets released from restrictions</td>
<td>168,038</td>
<td>(168,038)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total revenue and support</strong></td>
<td><strong>234,822</strong></td>
<td><strong>(79,481)</strong></td>
<td><strong>5,452</strong></td>
<td><strong>160,793</strong></td>
</tr>
</tbody>
</table>

### Expenses and losses

#### Expenses for the benefit of Purdue University:

<table>
<thead>
<tr>
<th>Description</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contributions to Purdue University</td>
<td>38,314</td>
<td>-</td>
<td>-</td>
<td>38,314</td>
</tr>
<tr>
<td>Patent and royalty</td>
<td>2,946</td>
<td>-</td>
<td>-</td>
<td>2,946</td>
</tr>
<tr>
<td>Grants</td>
<td>8,655</td>
<td>-</td>
<td>-</td>
<td>8,655</td>
</tr>
<tr>
<td>Services for Purdue University</td>
<td>2,659</td>
<td>-</td>
<td>-</td>
<td>2,659</td>
</tr>
<tr>
<td>Other</td>
<td>4,337</td>
<td>-</td>
<td>-</td>
<td>4,337</td>
</tr>
<tr>
<td><strong>Total expenses for the benefit of Purdue University</strong></td>
<td><strong>56,911</strong></td>
<td>-</td>
<td>-</td>
<td><strong>56,911</strong></td>
</tr>
</tbody>
</table>

#### Administrative and other expenses:

<table>
<thead>
<tr>
<th>Description</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Salaries and benefits</td>
<td>32,613</td>
<td>-</td>
<td>-</td>
<td>32,613</td>
</tr>
<tr>
<td>Property management</td>
<td>16,715</td>
<td>-</td>
<td>-</td>
<td>16,715</td>
</tr>
<tr>
<td>Professional fees</td>
<td>13,168</td>
<td>-</td>
<td>-</td>
<td>13,168</td>
</tr>
<tr>
<td>Supplies</td>
<td>1,601</td>
<td>-</td>
<td>-</td>
<td>1,601</td>
</tr>
<tr>
<td>Interest</td>
<td>6,936</td>
<td>-</td>
<td>-</td>
<td>6,936</td>
</tr>
<tr>
<td>Annuity and trust expense</td>
<td>4,443</td>
<td>-</td>
<td>-</td>
<td>4,443</td>
</tr>
<tr>
<td>Research Park</td>
<td>308</td>
<td>-</td>
<td>-</td>
<td>308</td>
</tr>
<tr>
<td>Other</td>
<td>3,595</td>
<td>-</td>
<td>-</td>
<td>3,595</td>
</tr>
<tr>
<td><strong>Total administrative and other expenses</strong></td>
<td><strong>79,379</strong></td>
<td>-</td>
<td>-</td>
<td><strong>79,379</strong></td>
</tr>
</tbody>
</table>

### Change in net assets

<table>
<thead>
<tr>
<th>Description</th>
<th>Unrestricted</th>
<th>Temporarily Restricted</th>
<th>Permanently Restricted</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Net assets, beginning of period</td>
<td>169,282</td>
<td>678,335</td>
<td>143,978</td>
<td>991,595</td>
</tr>
<tr>
<td>Net assets, end of period</td>
<td><strong>$267,814</strong></td>
<td><strong>$598,854</strong></td>
<td><strong>$149,430</strong></td>
<td><strong>$1,016,098</strong></td>
</tr>
</tbody>
</table>
Purdue Research Foundation Administration

Purdue Research Foundation (PRF) is a nonprofit corporation administered by the professionals below who manage the day-to-day operations of the foundation.

The areas of administrative concentration and the responsible individuals are:

**President**
Brian E. Edelman

**Chief Financial Officer & Treasurer**
Scott W. Seidle

**Chief Investment Officer**
David C. Cooper

**Senior Vice President of Entrepreneurship and Place Making**
Gregory W. Deason

**Chief Innovation/Collaboration Officer**
David Broecker

**Chief Entrepreneurial Officer**
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**Vice President Technology Commercialization**
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Amy R. Noah
For More Information

Visit these Web sites for more information about the
Purdue Research Foundation and its divisions:

prf.org
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Purdue Research Foundation
2018 Annual Report

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