SUMMARY REPORT

PURDUE RESEARCH PARK

Driving Today's New Economy

An Economic Impact Study of the Purdue Research Park Network

Prepared by Thomas P. Miller and Associates, May 2011

Thomas P. Miller and Associates
Building Assets through Knowledge & Innovation

A MAJOR ECONOMIC PLAYER

Thomas P. Miller and Associates was tasked to analyze the economic impact of the Purdue Research Park network and its associated Purdue Technology Centers on the four communities in which they reside and on the State of Indiana as a whole. This analysis includes both "traditional" and "new economy" impacts, as well the growing value of the Park network to Purdue University itself.

Purdue Research Park was launched in 1961, but it wasn't until the 1990s that it began to evolve into the economic and entrepreneurial powerhouse it is today. The Purdue Research Park network has become a major Indiana economic player with a statewide footprint.

Evaluation of the Park's success and impact on today's economy is vital if stakeholders are to understand the true role it plays in driving the State of Indiana's economy and how to address challenges and growth opportunities for the program.

This evaluation of the economic impact of the Purdue Research Park network focused on several key areas of impacts for both traditional and new economy development standards. Traditional economic impacts include output, jobs and taxes generated by the Park network. Our new economy assessments focus on metrics which address economic dynamism and the creation of an asset base for future technology-based economic development, and make it possible to analyze detailed information on Purdue Research Park network companies.

LEADING INDIANA EMPLOYER

The Park network ranks among the largest employers in the State. Network companies employed 4,101 employees in 2010 (3,856 full time equivalents). If the Purdue Research Park network were a single company, it would have ranked as the 20th largest employer in the State of Indiana on the Indianapolis Business Journal's 2010 list of "Largest Indiana Employers," falling between Toyota Motor Manufacturing Indiana Inc. (Princeton, IN) and Wishard Health Services (Indianapolis, IN).

Table S-1: Purdue Research Park Network Employment, by Location, 2010

	Employees	FTE
West Lafayette	3,233	3,045
Indianapolis	85	75
Northwest Indiana	719	682
Southeast Indiana	64	54
Statewide Total	4,101	3,856

Source: 2010 Survey of Purdue Research Park-based Companies; Staff estimates by Purdue Research Foundation and Thomas P. Miller and Associates, based on public and proprietary third-party sources.

A STATEWIDE FOOTPRINT

With four locations across the state from the Chicago suburbs in the northwest to the Louisville suburbs in the southeast, Purdue Research Park network is building a true I-65 Technology Corridor. From these four locations, Park network company employees live in 39 Indiana counties. The largest pool of employees live in Tippecanoe County, and other significant concentrations exist in Lake, Marion, and Hamilton counties.

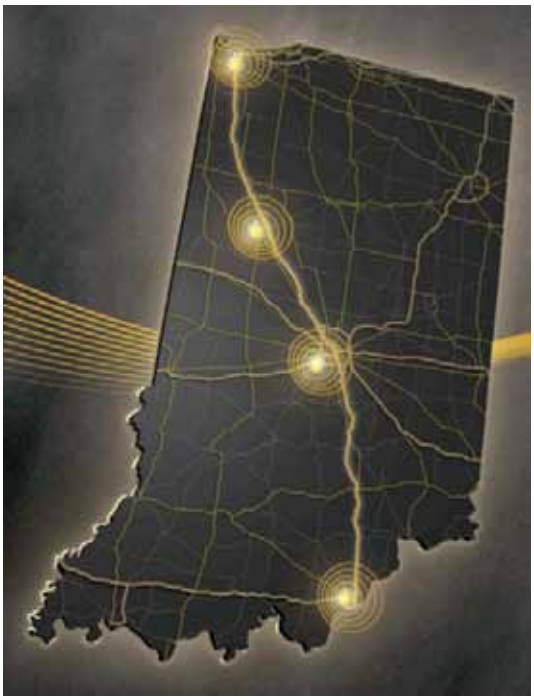
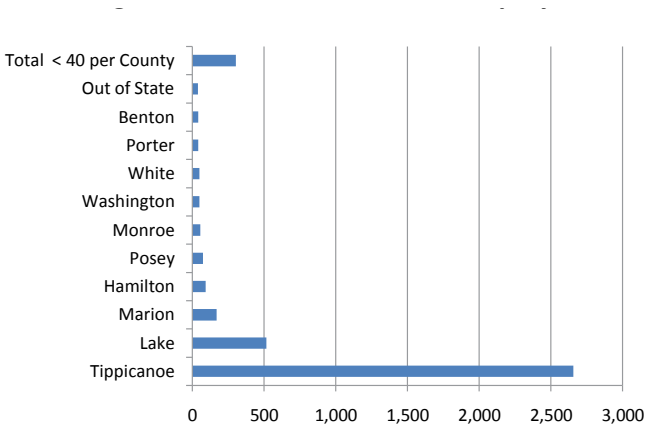


Figure S-1: I-65 Technology Corridor

Figure S-2: Residence of Park Employees

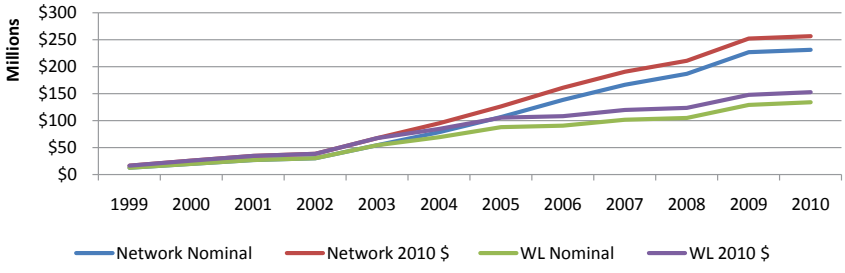


Source: 2010 Survey of Purdue Research Park-based Companies; Thomas P. Miller and Associates Staff estimates.

LARGE FACILITY AND INFRASTRUCTURE INVESTMENT

Between 1999 and 2010, over $256 million (2010 prices) was invested in facilities and infrastructure for the Purdue Research Park network as a whole. With the expansion of the three new sites since 2004, only about 58 percent of that cumulative total was invested in West Lafayette. For a sense of scale, Park network investment is more than a third as large as Lucas Oil Stadium ($720 million) and nearly a quarter of the cost of the Indianapolis Midfield Airport project ($1.06 billion).

Figure S-3: Cumulative Facility and Infrastructure Investment: Purdue Research Park Network: 1999-2000



Source: Purdue Research Foundation and West Lafayette City Building Permits. Data presented as reported (Nominal) and converted to constant 2010 prices (2010 $).

LEADING THE "NEW ECONOMY" CHARGE

The number one objective of Indiana's 2006 economic growth plan, *Accelerating Growth*, was to raise the state's per capita income and average annual wages. That singular primary vision provides the basic signpost for the path Indiana must follow in all economic development decision-making, especially nurturing the new economy and diversifying the base. The Purdue Research Park network has been a significant contributor to this Indiana goal.

HIGH WAGES

Employees of Purdue Research Park network companies received average annual wages of over $63,000 in 2010. This is 45 percent above national average wages, and a full 65 percent higher than the Indiana average. High average wages resulted in an estimated 2010 wage bill paid to Park company employees of some $238 million. The largest concentrations were in West Lafayette ($188 million) and Northwest Indiana ($43 million).

Table S-2: Average Wage, Purdue Research Park Network, United States, and Indiana

	Average Wage	Park Premium
Research Park Network (2010)	$63,069	NA
United States (2009)	$43,460	145%
Indiana (2009)	$38,330	165%

Source: 2010 Survey of Purdue Research Park-based Companies, Hoosiers by the Numbers, http://www.hoosierdata.in.gov, and Thomas P. Miller & Associates estimates.

HIGH EDUCATIONAL ATTAINMENT

Talent is perhaps the primary asset of the new economy. Both nationally and at the State level, increasing the level of educational attainment of the workforce has emerged as a critical priority. National and international competitiveness demands an ever more skilled workforce. Indeed, new economy jobs are particularly skill dependent. The education profile of Purdue Research Park network employees is a microcosm of the new economy, and represents an aspirational goal for

others to follow statewide.

Table S-3: Workforce Education Levels, Purdue Research Park Network, Indiana and the United States

	Baccalaureate & above	Associates & above	Less than Associates
Park Network, 2010	42.2%	46.2%	53.8%
Indiana 2009	21.9%	29.1%	70.8%
United States 2009	27.5%	34.9%	65.1%

Sources: 2010 Survey of Purdue Research Park-based Companies; American Community Survey, 5-Year (2005/9) Moving Average Estimates for the United States and the State of Indiana.

The 2010 survey revealed that 46 percent of the employees of Purdue Research Park network companies held associate degrees or above and 42 percent held baccalaureate degrees or above. This level of educational attainment not only exceeds the Indiana average, but also substantially exceeds the national average.

HIGH-TECH JOBS

Creating an economy that generates well-compensated opportunities for college graduates has been a top priority of Indiana leadership. Purdue Research Park network companies represent a key asset in helping to meet this State goal. Opportunity for graduates is not only an important priority for economic development, but for families as well. Citizens want to see growth in the kind of jobs that would employ their children and grandchildren upon graduation.

Purdue Research Park network companies clearly have a compelling competitive interest in retaining the best and brightest talent in Indiana. Through internship opportunities, high wages, and the prospect for dynamic careers, Park network companies are aggressively "reversing the brain drain."

In the 2010 survey, Park network companies that provided workforce detail reported that they employed 577 Purdue graduates and 249 students. If all Park network companies had similar hiring practices, actual employment could be as high as 877 Purdue graduates and 378 students.

THE RACE FOR CAPITAL

Access to capital is the perennial complaint of business leaders seeking growth, countered by many others who are convinced that capital is available for good deals. However, there is no debate that good opportunities in Indiana face more funding obstacles than do similar opportunities on the east or west coasts. For all young, new economy companies, but especially for companies associated with university-based research parks, various forms of grant funding are critical sources of seed capital.

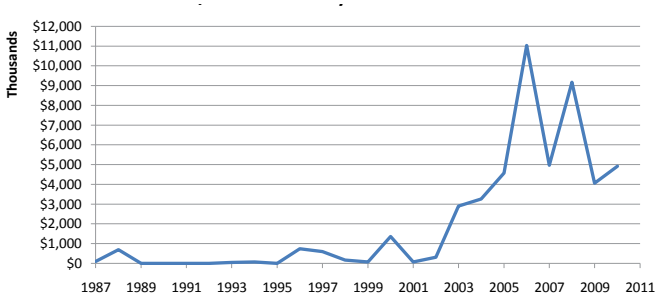
Growing Success at Winning Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) Grant Awards

Purdue Research Park programs, embedded in the Purdue Technology Centers, have facilitated the ability of Park network companies to win a growing share of the nation's largest source of early stage financing for technology startups from the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) grants programs run by the Federal government. With more than $2 billion in Federal grants and contracts awarded each year, these programs help innovative small companies achieve commercial success while performing important research for the Federal government.

Cumulative awards to Purdue Research Park of West Lafayette-based companies totaled some $49 million since 1987. Over 95 percent of these awards have occurred since 2002. Thirty-nine (39) companies have contributed to this success, with 16 companies accounting for over 90 percent of the cumulative awards.

Among the other three Purdue Research Park locations, only Northwest Indiana Park companies received a significant number of SBIR/STTR awards. Four companies accumulated some $2.9 million in awards since the location opened in 2004. The limited success to date of companies in the newest Park locations reflects both age and size. Both the Southeast Indiana and Indianapolis locations are very young (2008 and 2009 respectively). Moreover, they have a small population of Park companies compared to West Lafayette and Northwest Indiana.

Figure S-4: West Lafayette Park Companies, SBIR/STTR Awards by Year: 1987-2010



Source: TPMA estimates based on multiple sources.

The significant success in receiving awards since 2002 by Park companies coincides closely with both the stronger focus on commercialization by Purdue University and the Purdue Research Foundation, and with the emergence of a much stronger statewide focus on technology based economic development. The Purdue Research Park of West Lafayette has proven to be a good location for grant recipients.

Contender for the Indiana 21st Century Research and Technology Fund Title

Purdue Research Park network companies have excelled under the three (3) programs created by Indiana's 21st Century Research and Technology Fund, the State's primary grant funding mechanism in support of technology-based economic development.

Under the core 21st Century grant fund, since 1999, Park network companies participated in 41 of 192 fund awards (21.4 percent), representing 22.7 percent by value of all grants awarded.

Table S-4: 21st Century Research and Technology Fund: Grants to Purdue Research Park Network Companies, FY 1999-FY 2010

	Total Awards Rounds 1-10	Share
State Awards (number)	192	NA
Park Company Awards (number unique)[1]	41	21.4%
State Awards (total)	$235,695,226	NA
Park Company Awards (total)	$36,427,206	15.5%
Park Company Partnering (total unique)[1]	$17,095,808	7.3%
Park Company Involvement (sum of awards and partnering)	$53,523,014	22.7%

Source: Compiled from various 21st Century Research and Technology Fund Annual Reports and internal documents.
[1] An award was counted only once, even if more than one Park company participated on the same award.

Park network companies had even greater success rates in the awarding of grants from the 21st Century Fund's other two programs: the SBIR match program and the Indiana SBIR Commercialization Enhancement Program (ISCEP). Park network companies received 28 percent of all state SBIR match awards, and 38 percent of all ISCEP awards, for a total share of 29 percent of all SBIR related awards.

Table S-5: 21st Century Fund SBIR Related Awards: Share of State Total Awards Received by Purdue Research Park Companies, by Location, FY 2004-FY 2011[1]

FY	Park Network Share	West Lafayette Park Share	Northwest Park Share	Southeast Park Share
2004	40.69%	40.69%	0.00%	0.00%
2005	30.32%	24.57%	5.75%	0.00%
2006	19.04%	17.08%	1.97%	0.00%
2007	44.85%	42.08%	2.77%	0.00%
2008	18.10%	18.10%	0.00%	0.00%
2009	30.95%	24.84%	2.00%	4.11%
2010	28.28%	27.82%	0.47%	0.00%
2011[2]	29.41%	23.53%	5.88%	0.00%
Total 2004-2011	**29.04%**	**26.20%**	**1.81%**	**1.02%**

Source: Revised data provided by 21st Century Research and Technology Fund staff, March 2011.
[1]Includes both SBIR Match and ISCEP Fund Awards. Indianapolis received no reported awards during this period.
[2]Partial year.

Breaking the Venture Capital Barrier

Publicly available data on the various forms of early-stage capital provided to emerging companies tends to be incomplete. Using publicly reported data, Park network companies have captured nearly 22 percent of statewide venture capital (VC) investment over the period 2000 to 2010. Most of the success was by companies in the West Lafayette location (19 percent of statewide VC investment).

Table S-6: Venture Capital Awards 2000 - 2010: Purdue Research Park Companies, Park County and Indiana ($ million and percent)

Research Park Location	Awards to Park Companies	Awards to Park County[1]	Awards to Indiana Companies
West Lafayette	287.6	293.4	NA
Indianapolis	36.0	673.2	NA
Total	**323.6**	**966.6**	**1,502.7**
Share of State Total	**21.5%**	**64.3%**	**NA**

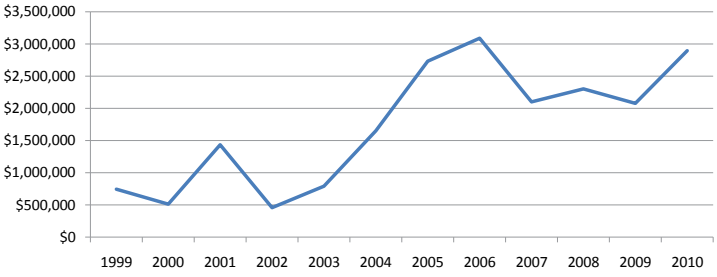
Source: Data Decision Resources. DDR data reconciles and aggregates reported venture capital awards from multiple sources. No awards were reported in Northwest or Southeast for this time period.

[1]Venture capital deals with companies in the county within which the Purdue Research Park location resides.

GROWTH IN SPONSORED RESEARCH

Not only do Park network companies provide significant employment opportunies for graduates and students, they also sponsor significant reseach at Purdue University. Sponsored research not only leverages the knowledge and expertise of faculty, but helps the faculty become more knowledgable about the process and challenges of commercialization. Since 1999, 45 Park network companies have provided almost $22 million in sponsored research to Purdue University. From 2005-2010, this averaged over $2.5 million per year.

Figure S-5: Purdue University: Sponsored Research by Park Network Companies, 1999-2010

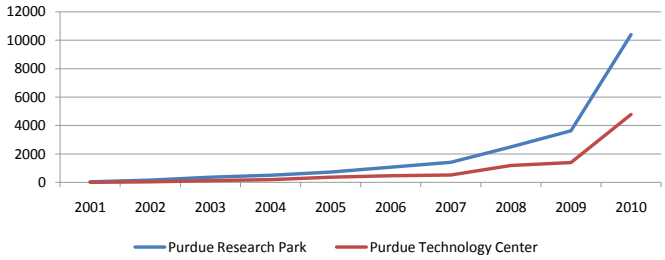


Source: Purdue Research Foundation.

GETTING THE WORD OUT

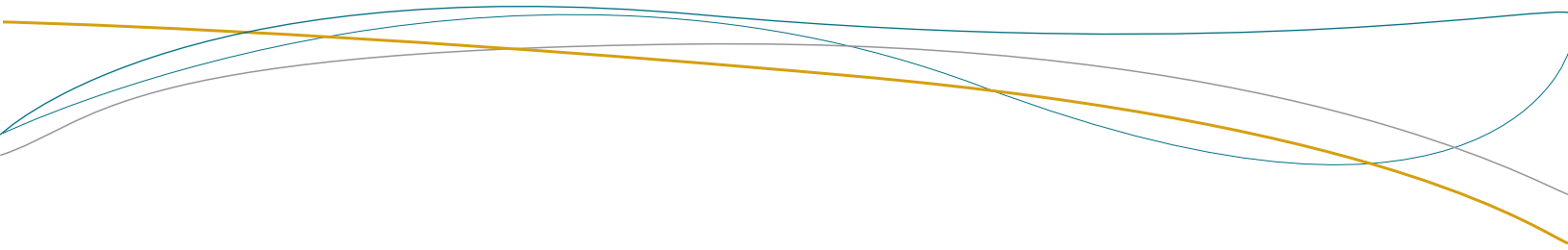
There are many dimensions to the new economy. One is simply the awareness that economic and technological dynamism is happening, or that an "entrepreneurial climate" is being created. It is critical for entrepreneurs and investors to see activity, identify peers, and have role models. It also is critical for the rest of the world to see that the State is a good place to build high-growth businesses. A good metric for visibility and recognition is the frequency of mentions in major media. The Purdue Research Park network and the Purdue Technology Centers have received a dramatic expansion of coverage in recent years. In today's competitive environment, it is critical that the high-tech growth happening in Indiana is increasingly visible outside the State.

Figure S-6: News Mentions in Search Engine Archives: Purdue Research Park and Purdue



Technology Center, 2001-2010

IMPACTING THE STATE'S ECONOMY



Building the new economy is not only important, but critical to Indiana and the nation's future. This document provides TPMA research on the economic impact of the Purdue Research Park on Indiana's economy.

Economic impact analysis is the primary quantitative technique used to estimate the economic benefits of economic development projects. Economic impact analysis estimates how defined changes in economic activity will affect the wider local or regional economy.

Specific changes in economic activity, such as building a sporting venue or launching a new business operation will initiate direct spending on locally provided goods and services that in turn trigger a series of additional flows as recipients spend their receipts and wages on local goods and services. These ripple effects can be estimated, using a so-called multiplier analysis.

It is important to distinguish between the economic impacts of investment spending and operations spending. Investments generate one-time impacts that ripple through the economy and fade away. Operations impacts, as long as they are expected to continue at the same level, will persist.

INVESTMENT IMPACT

The cumulative economic impacts of investment in the Purdue Research Park network since 1999 on the State as a whole have generated an estimated total output of $585 million and wages of nearly $183 million paid to 4,730 workers (in terms of full-time equivalents for one year).

Table S-7: Total Statewide Economic Impact from Investment in the Purdue Research Park Network: 1999-2010 (Impact in 2010 Dollars)

Region	Output	Earnings	Employment
West Lafayette	$347,834,558	$108,581,097	2,733
Northwest	$186,509,877	$58,221,492	1,547
Indianapolis	$29,337,450	$9,336,658	266
Southeast	$21,067,650	$6,576,542	184
Total State Impact	$584,749,535	$182,715,789	4,730

Source: Estimates by Thomas P. Miller and Associates.

OPERATIONS IMPACT

As impressive as the investment impact appears, it is dwarfed by the impact of Park network company operations. The four regions which host the Purdue Research Park locations are seeing a boost to total economic activity resulting from Park operations of $1 billion and over 6,400 jobs annually, with another $305 million generated elsewhere across Indiana, associated with 3,200 jobs. Accounting for unpaid and part-time employees Park company activity generated over $1.3 billion in output and 10,000 jobs in 2010.

Table S-8: Total Economic Impact of Purdue Research Park Operations: By Region, 2010

Region	Reported Direct Employment (Paid FTE)	Estimated Total Output (Final Demand): Region	Estimated Total Output (Final Demand): State	Estimated Total Employment: Region	Estimated Total Employment: State
Indianapolis	71	$47,966,724	$47,966,724	141	141
Northwest	663	$230,349,753	$259,172,712	1,057	1,576
Southeast	43	$30,174,643	$30,174,643	114	114
West Lafayette	2,994	$729,624,726	$1,006,188,037	5,111	7,801
Grand Total	**3,771**	**$1,038,115,846**	**$1,343,502,116**	**6,423**	**9,632**

Source: Estimates by Thomas P. Miller and Associates.

FISCAL IMPACT – OPERATIONS

Governments at the local, state and federal level levy taxes on the consequence of business activities. One category of taxes is called Indirect Business Taxes (IBT) which is a tax levied on goods or services rather than on persons or organizations (e.g., sales tax, excise tax, property tax). The other category of taxes is Direct Taxes, levies applied to persons (legal or natural) on whom it is imposed (e.g., personal income tax).

With local government financing in flux and tax rates that change annually, one should view these estimates as loose approximations of tax revenue generated. We did not attempt to allocate the totals among the regional counties, nor did we estimate Federal direct taxes.

Total annual Indiana state and local tax revenue as a result of the Purdue Research Park network economic activity in 2010 is an estimated $47.7 million. Note that the entries by Park network location are not tax revenues collected at that location. Rather they are statewide taxes of that type generated by the level of economic activity at that Research Park network location.

Table S-9: Total Indiana Indirect and Direct Business Taxes
Generated by Purdue Research Park Network Economic Activity: 2010

	West Lafayette	Northwest	Indianapolis	Southeast	Indiana Total
Indirect Business Taxes	**$10,619,924**	**$2,201,380**	**$534,495**	**$308,993**	**$13,664,792**
Federal	$1,117,381	$258,743	$87,146	$23,516	$1,486,786
State	$9,502,544	$1,942,638	$447,349	$285,477	$12,178,008
State Sales	$5,051,907	$1,047,199	$254,259	$146,988	$6,500,353
State Property	$5,003,434	$1,037,151	$251,821	$145,579	$6,437,985
State Other Taxes	$564,584	$117,031	$28,415	$16,426	$726,456
Direct Taxes (State Income Tax)	**$27,074,918**	**$6,045,483**	**$1,459,200**	**$903,844**	**$35,483,445**
Total Taxes	**$37,694,842**	**$8,246,863**	**$1,993,694**	**$1,212,837**	**$49,148,236**
Total Indiana Taxes	**$36,577,461**	**$7,988,120**	**$1,906,548**	**$1,189,321**	**$47,661,450**

Source: Estimates by Thomas P. Miller and Associates.

A VISION REALIZED

David E. Ross, a former president of the Purdue University Board of Trustees and a prolific Indiana inventor, forged Purdue University's vision for a revolutionary new engagement with industry in 1930.

The Purdue Research Park network has been instrumental in achieving great progress toward the aspirations established in vision adopted by the foundation in *A Model Partnership:* the Purdue Research Foundation 2005 – 2010 Strategic Plan

The Purdue Research Foundation will be recognized as the national leader in university-stimulated entrepreneurship and economic development through the commercialization of science and technology.

In a speech before the Purdue Research Foundation in August 2009, Purdue University President France A. Córdova expressed her vision of the central role that the Purdue Research Foundation and associated Purdue Research Park network plays today in supporting a key pillar of the University's *New Synergies* strategic plan, Discovery with Delivery:

Discovery with Delivery is one of the three guiding principles of our strategic plan. Right now, our faculty and student researchers are conducting work that is having a positive impact on the world.

The Purdue Research Foundation continues to make tremendous progress in helping Purdue move its discoveries to the public. And, PRF has become a leader in economic development for the state of Indiana.