

“This works.”

Creating opportunity for Indiana’s college grads

It has been more than a decade since Lilly Endowment-funded research first reported that Indiana ranked near the bottom of the 50 states in the percentage of its adult population with a bachelor’s degree and that the state was a net exporter of college grads. Now colleges and universities are working hard to graduate more students and stop the exodus of Indiana’s educated. They are making headway.

“Doing so is critical to the future viability of Indiana,” says Kevin Brinegar, president and CEO of the Indiana Chamber of Commerce, which in 1997 collaborated with the Indiana Higher Education Commission and the Indiana Fiscal Policy Institute on the research into the educational attainment levels of the Indiana workforce. “Our members tell us that the availability of an educated, skilled and trainable workforce is one of the key factors they consider when deciding where to locate or expand. Businesses will move where they can find the most capable people.”

Reversing a trend

In 2003 the Endowment announced the \$40 million Initiative to Promote Opportunity Through Educational Collaborations, which aimed at inspiring 37 Indiana colleges and universities to make plugging the brain drain a priority. A key objective was to encourage Indiana higher education institutions to



be more intentional about helping their students develop relationships with Indiana businesses.

Indiana’s institutions responded with new internships, collaborations with alumni and Indiana employers, improved career services, business-plan competitions to reward entrepreneurial thinking, and programs tailored to the demands of Indiana’s new knowledge-based economy.

Fast-forward five years and those initial grants are beginning to pay off, with plenty of positive anecdotal evidence and statistics showing more graduates employed within the state.

At Purdue University, for example, the initiative funded the creation of an Interns for Indiana (IfI) program to place students in internships with startup Indiana companies. So far, 338 interns have been placed with 145 companies. The result: While IfI students go on to pursue a mix of employment and advanced study, more of them choose to stay in Indiana (70 percent) than Purdue students who do not participate in the IfI program (56 percent). Of those IfI students who interned in their final year at Purdue, 75 percent remained in Indiana.

“This works,” says Victor L. Lechtenberg, vice provost for engagement and government. “If you can match bright, talented Purdue kids with good Indiana companies, they will stay in Indiana.”

In 2008 the Endowment offered an additional

\$20 million of sustaining grants to the original 37 colleges and universities that participated in the 2003 initiative. With funds from these grants—ranging from \$375,000 to \$2.75 million based on enrollment figures—colleges and universities will build on successful programs and create new opportunities.

Young entrepreneurs

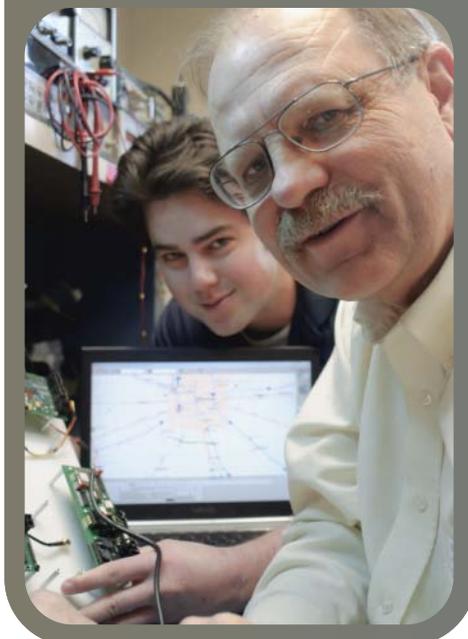
It's no surprise that Jason Krueger is an entrepreneur. He began shoveling sidewalks in his hometown of Glenview, Ill., at age 9 and started his own handyman enterprise in high school. In 2005, when his roommate at Taylor University decided to study overseas instead of pursuing a business idea being floated by a physics professor, Krueger jumped at the chance to pursue it.

What is surprising is where Krueger has launched his science-based company, StratoStar Systems—Upland, Ind. “Upland is not a technology epicenter,” Krueger wryly acknowledges.

But Upland is home to Taylor, which has identified entrepreneurship as a viable way to excite students about their prospects in Indiana. So when Krueger teamed up with physics professor Hank Voss, he didn't have to look far for assistance.

StratoStar Systems was incubated at Taylor's Center for Research and Innovation (CR&I), a program created with funds from the 2003 Endowment grant. StratoStar offers near-space satellite communications solutions using high-altitude balloons that can be launched up to 100,000 feet into the atmosphere for science and engineering education, satellite communications relay, surveillance, and environmental research for schools, colleges and universities, government and industry.

So far, higher education has been StratoStar's



(previous page) **It may not be Cape Canaveral**, but Taylor University in Upland has its own bragging rights as “the best baccalaureate college in the Midwest” (*U.S. News & World Report*). StratoStar Systems emerged from Taylor's Center for Research and Innovation where Prof. Henry “Hank” Voss (*opposite, left*) was the faculty adviser for Jason Krueger (*center*), StratoStar president. His first hire was Matthew Garver as systems engineer. (*this page*) Garver and Voss go over the StratoStar GPS system. The company offers near-space satellite communications solutions by using high-altitude balloons.

primary market. The fledgling company has demonstrated and sold turnkey high-altitude balloon flight system kits to DePauw University, the University of Minnesota, the University of California-San Diego and others.

The StratoStar system demonstrates scientific concepts, such as how atmosphere changes in relation to distance from the earth. Krueger hopes that more K-12 schools will purchase the flight system kits to excite kids about science and engineering.

He's also confident that businesses and government agencies will see the benefits of a low-cost, nonorbital satellite that can extend radio communications for up to 400 miles.

StratoStar is one of 12 new business ventures Taylor's CR&I has launched. CR&I also has developed experiential learning opportunities for students ranging from research partnerships with a local public high school to projects with several area businesses.

Like most small liberal-arts schools, Taylor focuses primarily on teaching, but the original grant helped broaden student and faculty experiences. Faculty-student collaborative research projects have increased dramatically. Faculty participation has increased 100 percent; the number of students participating has increased 700 percent.

Taylor will use its new sustaining grant to encourage more ventures and collaborations, according to Don Takehara, CR&I director. “We have developed an integrated research, entrepreneurship and business-assistance program that takes students from understanding how to do research to understanding how to commercialize that research to help an existing company or start a new one,” he says.

Taylor also will create an entrepreneurship minor for students who, like Krueger, are willing to take the risk of starting their own business.

Internship infrastructure

Research shows that students who work in internships are more likely to find employment after graduation, often with the companies where they've interned. The 2003 initiative allowed many Indiana colleges and universities to beef up internship

opportunities and create thousands of in-state work experiences for students.

At Wabash College in Crawfordsville, officials were especially eager to broaden students' experiential learning through formal internships and shorter, less formal externships with the original 2003 grant. The small liberal-arts college offers no business degree, yet many students hope to find a career in business, according to Nancy Doemel, senior advancement officer.

"Lilly Endowment funding has permitted us to build infrastructure for our internship programs," says Doemel, who notes that Wabash students participated in 147 new internships in the years following the initial grant and that student visits to the career-development center increased from 500 in 2003 to more than 1,500 in 2007.

Wabash has always relied on alumni to network with new graduates, but the 2003 grant helped create formal programs in which some 500 alumni have participated, including a mentoring network connecting students to alumni and a lecture series that brought 100 graduates in banking, law, medicine and other fields to Wabash to meet with students.

Alumni expertise also was tapped to help create an eight-week summer course on entrepreneurship in which 57 students have participated and a one-week marketing immersion program in which nearly 50 students have given up traditional spring-break destinations for a plunge into business education.

Lu Hamilton, a major-gifts administrator who coordinated many of the grant activities as alumni career officer, points to feedback from students as one measure of success. "The spring program whets their appetite for learning more about marketing and opens their eyes to the possibilities of careers in Indiana," he says.

"The guys are saying, 'This changes my view of Indiana.' Students often think only about the big marketing firms in New York, but we're introducing them to hugely successful marketing efforts in Indiana," Hamilton says.

The 2008 sustaining grant will help Wabash

Wabash College students take a spring-break "immersion" in marketing and meet with representatives of different companies in Indiana. Here they get the lowdown on worldwide motorsport marketing from Jon Flack, executive vice president of client services, and Wes Zirkel (*standing*) (Wabash '98), vice president and general counsel at Just Marketing International in Zionsville. Students are (*l to r*) Deborshi Seal, Maycdon Sprowl, Paul Liu and Adam Andrews.

continue these successful efforts through the new Wabash Business Leadership Program, a liberal arts-based approach to shape future leaders.

Brinegar of the Indiana Chamber of Commerce believes strongly in the role internships can play in keeping Indiana graduates in the state. Under his leadership, the Chamber in 2006 assumed responsibility for the operation of Indiana INTERNnet, a Web-based program funded by the Endowment that connects students interested in internships in Indiana with companies that offer them.

In 2008 the Endowment provided a \$500,000 grant to Indiana INTERNnet for continued support of the program, bringing total Endowment support since its inception at the University of Indianapolis in 2000 to nearly \$4.5 million. "Internships not only provide excellent educational opportunities for students, they also can enliven a business setting and forge a relationship between the business and intern that can ripen into a permanent position. Internships are essential to Indiana's efforts to retain its top graduates," Brinegar says.

New graduates to meet new demands

Wendy Carroll was working at General Electric in Bloomington in 2004 when the company announced that it would close the plant. At age 32, Carroll was out of the job she thought she'd retire from someday, just as her father and grandfather had. With only a high-school education, Carroll wasn't prepared to do anything else.

Carroll's prospects changed when she entered Ivy Tech Community College, which coincidentally



was mounting a biotechnology initiative with its 2003 grant. For Ivy Tech—Indiana’s largest postsecondary education system—the goal was to create meaningful career opportunities for its associate-degree graduates in Indiana’s growing life-sciences industry.

By 2008 Carroll had earned her associate’s degree and was a quality-control technician at Cook Pharmica, a contract biopharmaceutical manufacturing company in Bloomington. She is the beneficiary of a full biotechnology curriculum—developed in collaboration with employers in the field—resulting in enrollment of 741 students on six Ivy Tech campuses.

Ivy Tech campuses with large enrollments—like Ivy Tech-Bloomington—are meeting the big demand for biotech graduates and finding multiple ways to form partnerships in their communities, according to Marnia F. Kennon, Ivy Tech’s vice provost for academic affairs.

Not only do the biotech graduates stay in Indiana, about half the graduates of Ivy Tech’s biotechnology program say they want to continue their education beyond the associate’s degree. For other graduates, the biotechnology program means a fresh start.



Workers displaced from declining industries are finding a new future in the life sciences.

“We’ve been able to provide our graduates educational mobility as well as economic mobility,” Kennon says.

Carroll, who is continuing her studies and plans to earn a bachelor’s degree in biochemistry, says that the results of her Ivy Tech experience have been “amazing.”

“When I worked at GE, it was my body working from the neck down. My brain was not engaged, and it was boring,” she says. “Now I get to use my brain. I get to think and learn. It’s not just a job—it’s a career.”

Ivy Tech’s 2008 sustaining grant will help fund one of the original grant’s goals of reaching out to high-school students and informing them about life-science and biotechnology job opportunities and encouraging them to pursue math and science.

“The focus of our efforts has truly been on the production, or manufacturing, side of the life sciences,” Kennon says. “Indiana can say to prospective employers, ‘We have this pool of talent here.’”

That eye toward state economic development is in many cases a new way of thinking for many college administrators. The second wave of funding will continue to help Indiana colleges and universities think differently about how they can influence their graduates’ futures, according to Purdue’s Lechtenberg.

At Purdue, officials plan to strengthen the successful Interns for Indiana program and add academic offerings leading to a certificate in entrepreneurship and innovation. A new Collegiate Entrepreneurship Opportunities program will teach students not just how to “take” jobs but how to “make” jobs, Lechtenberg says.

“Over time, the initiative will influence thinking well beyond the university,” he predicts. “Purdue and the state of Indiana have bright young folks who are studying with some of the brightest people in the world. We need to make sure that they have the opportunities they need—and that we need—to succeed.”

Wendy Carroll, quality-control technician at Cook Pharmica in Bloomington, turned her life around from a “boring” job at a local plant to a “career position” with a company that has a global reach. Carroll, now working toward a bachelor’s degree in biochemistry, got her start by earning an associate’s degree from a new biotechnology program at Ivy Tech-Bloomington.
