

**Highlights Report
2013-2014
Purdue School of Engineering and Technology, IUPUI**

The Success of Our Students

- Per the 2013 report from the American Society for Engineering Education, the **School of Engineering and Technology** ranks #3 nationally for the number of bachelor's engineering technology degrees awarded and ranks #2 nationally for total engineering technology degrees awarded to women.
- Only three schools were ranked higher than the **School of Engineering and Technology** in the 2015 *U.S. News and World Report* edition of the Best Engineering Graduate School Category while having smaller total graduate engineering enrollment than our School.
- Drew Witte, electrical engineering graduate student, won third place in the "[Pitch](#)" contest for his *Wood to Electricity: Micro-Grid Kits for Developing Parts of the World*. These kits could be used in developing countries to power people out of poverty by providing power for communication, education and economic development.
- Hayley Earley, an interior design student, designed a "[safe house](#)" that will be built to protect child-led families in the Kingdom of Swaziland in southern Africa who desperately need safe places to live.
- Mechanical engineering student Steven Zusack was selected by the American Society for Engineering Education as its 2014 [Intern of the Year](#). This is the second consecutive year a student from the School of Engineering and Technology was selected for this national award.
- [Sara Grimany](#), **School of Engineering and Technology** mechanical engineering graduate from Puerto Rico, lands job at Dow Chemical in Freeport, Texas.
- Mechanical engineering student with the **School of Engineering and Technology**, Joe Spaulding, helps open [Paws Pantry](#); an on-campus food pantry.
- Purdue Grand Prix race featured [first all-women's team](#) from the **School of Engineering and Technology**.
- Students with the **School of Engineering and Technology** studying motorsports and/or mechanical engineering given the opportunity to go to Germany for a week for [Motorsports Germany](#).
- **School of Engineering and Technology** members of the Society of Student Constructors were awarded scholarships at the [North American Society for Trenchless Technology No-Dig Show](#). The North American Society for Trenchless Technology is an engineering society of individuals, public organizations and companies that support the practical, social, and environmental benefits of trenchless technology.
- **School of Engineering and Technology** computer graphic technology students develop public service video for [PEN](#) (Prison Enterprises Network). PEN is a division of the Indiana Department of Correction, manufactures goods and provides services using offender labor through the Indiana prison industries.
- The new Dallara D3 [driving simulator](#) arrived at the IndyCar Factory in Speedway after the **School of Engineering and Technology** received a \$1.15 million grant from the Indiana Economic Development Corporation to support the completion and operation of the simulator. The School is partnering with Dallara to conduct research designed to advance motorsports engineering and motorsports-related economic development in Indiana.
- The first annual **School of Engineering and Technology** Women in Engineering [Connections](#) event was held in February with 75 attendees including current students and alums. The goal of the program is to increase the number of women who pursue and receive degrees in engineering.

- A research project into replacing coal- and oil-fired boilers with renewable energy was jointly sponsored by the Venture Fund of the IUPUI Solution Center, the Hoosier Environmental Council, and the **Richard G. Lugar Center for Renewable Energy**. An electrical and computer engineering student teamed with a student pursuing the MBA/J.D. degrees to prepare a 62 page report providing guidance to technologists and decision makers considering alternatives to fossil fuels.
- A unique [“2+2” mechanical engineering program](#) with Sun Yat-sen University was implemented within the **School of Engineering and Technology**. Twenty-three students were enrolled for the Fall 2013 cohort. Nineteen students of the 2012 cohort were admitted to join mechanical engineering at IUPUI in Fall 2014.
- [FIRST Robotics internship program](#) began with training provided by Rolls-Royce. Four students from the **School of Engineering and Technology** and **School of Science** were assigned to mentor teams.
- The pilot of the **School of Engineering and Technology’s** [Transfer2Success](#) program successfully kicked off in Fall 2013 with approximately 20% of new transfer students participating. Course Networking was used to facilitate the program.
- **School of Engineering and Technology** Career Services collaborated with the **School of Science** in coordinating the first annual IUPUI health Sciences Career Fair.
- The mechanical engineering department has been working with local companies to develop real-world engineering projects for its [Capstone Design class](#). Students gain valuable experience and the companies benefit from the resulting outcomes. The companies included: Bryan Herta Autosport, Belcan, Roche Diagnostics, Mattingly, Carrier, Raytheon, Rawlings/Sprinball Sports, EnerDel, and Stanley Security.
- One of the **School of Engineering and Technology’s** [capstone design teams](#) designed a shower assistance device for a partially paralyzed patient to allow independent showers.
- **School of Engineering and Technology’s** organizational leadership and supervision program completed a Memorandum of Understanding and Articulation Agreements for new A.S.—B.S. degree completion partnership with Vincennes University Aviation Technology Flight and Maintenance Programs.
- **School of Engineering and Technology’s** graduate faculty from the department of technology leadership and communication developed a STEM Education Post-secondary Partnership with Ivy Tech Community College.
- **School of Engineering and Technology’s** organizational leadership and supervision program implemented a partnership with the Division of Student Affairs’ Office of Student Involvement to provide academic credit to high achieving undergraduate student leaders who participate in co-curricular leadership programs.
- **School of Engineering and Technology’s** organizational leadership and supervision expanded its use of competence-based/prior learning assessment to provide academic credit to adult degree completers who have college-comparable learning experiences from a variety of contexts (e.g., workplace; military; community).
- **School of Engineering and Technology’s** department of technology leadership and communication graduate students completed an applied research project for the National YMCA and presented the results of their work to the national leadership team at YMCA Headquarters in Chicago.
- **School of Engineering and Technology’s** department of technology leadership and communication graduate faculty members received a contract from the Indiana Association of Career and Technical Education Directors to revise Workplace Specialist I Training program in partnership with Indiana State University and Ball State University.

- **School of Engineering and Technology's** department of technology leadership and communication faculty participated in the inaugural Quality Matters training, a program designed to enhance quality of online course development, which also included peer reviewer certification.
- **School of Engineering and Technology's** computer and information technology professor was awarded a grant from the Purdue Technical Assistance Program, which was used to support students working on projects with small Indiana business and non-profits.
- **School of Engineering and Technology's** computer and information technology professor secured funding from [Simon Property Group](#) for students to provide system support for malls throughout the United States and worldwide. This project provides real world experiences for students in a corporate setting through The Living Lab.
- **School of Engineering and Technology's** computer and information technology faculty member mentored a team of 12 computer and information technology and computer graphics technology undergraduate students to produce dynamic websites for a near east side community development corporation and an affiliated daycare organization. This project was funded by the Near Eastside Legacy Initiative.
- **School of Engineering and Technology's** music therapy graduate and equivalency students organized and took part in "[Indy Sings: A Music Therapy Experience](#)" which was designed to promote how music therapists assist children on the autism spectrum. The event was covered by local media including Indiana Public Media.
- **School of Engineering and Technology at IUPUI** motorsports engineering and **Herron School of Art and Design at IUPUI** furniture design students build [Formula-style race car](#). Motorsports students designed, built and tested the majority of the IUPUI race car. However, the bodywork is the team work of motorsports students and students in the furniture design. The formula-style race car competed in Lincoln, Nebraska with more than 90 cars entered in the Formula SAE student design competition organized by SAE International, formerly known as the Society of Automotive Engineers.
- James Schnabel, **School of Engineering and Technology at IUPUI** motorsports engineering student interns with [Penske Racing](#).
- **School of Engineering and Technology at IUPUI** motorsports team takes second place at the [Sports Car Club of America races at Grattan Raceway](#), in Michigan, bettering their qualifying time by 3 seconds over last year.

Advances in Health and Life Sciences

- A new study conducted by researchers in Music and Arts Technology in the **School of Engineering and Technology** has found that adolescents and young adults undergoing cancer treatment gain coping skills and resilience-related outcomes when they participate in a [therapeutic music process](#) that includes writing song lyrics and producing videos.
- **School of Engineering and Technology's** technical communication faculty served on a community coalition "Get Large, Get Loud, Get Back to Zero: Preventing HIV in 10-17 Year Olds."
- **School of Engineering and Technology's** organizational leadership and supervision faculty provided an extensive leadership development training program at the Indiana Blood Center.
- **School of Engineering and Technology's** biomedical engineering department received 28 research awards totally approximately \$2.5M. The 10 research active faculty published 68 journal articles, 33 conference papers/presentations, and 10 book chapters.

- The American Music Therapy Association and the National Institutes of Health hosted a day seminar "[Music Therapy Research in Oncology: Therapeutic Outcomes, Mechanisms, and Directions for Future Research](#)" that featured invited speakers Dr. Debra Burns from **School of Engineering and Technology's** music and arts technology and her colleague from **IU School of Nursing** Dr. Sheri L. Robb.
- **School of Engineering and Technology's** computer and information technology and IU School of Informatics and Computing New Media professor received a grant from Varian Medical Research for the "Optimization of 4D Proton Treatment Planning with Interplay Effects."

Contributions to the Well-being of the Citizens of Indianapolis, Indiana, and beyond.

- The **School of Engineering and Technology** tripled the amount of National Science Foundation awards to approximately \$1.8M as compared to 3 years ago.
- The **School of Engineering and Technology** worked with industry leaders to create a capability map of faculty to enhance industry/faculty partnerships and determine strengths and needs for research strategic planning.
- Researchers at the [IUPUI Engineering Design Research Laboratory](#), **School of Engineering and Technology**, under the direction of a professor of mechanical engineering will collaborate with Honda R&D Americas in the development of a design optimization methodology to tailor progressive folding in thin-walled tubular structures subjected to dynamic crushing events.
- **School of Engineering and Technology** received an in-kind [software grant](#) from Siemens PLM Software, with a commercial value of \$538 million.
- **School of Engineering and Technology's** music and arts technology professor, Ricardo Laranja, served as an audio engineer and composer for "[Operarios Da Bola](#)", a documentary film about World Cup stadium workers.
- Director of the **Richard Lugar Center for Renewable Energy** was awarded a patent that brings a 40-year-old prediction of [hydrogen replacing oil](#) as the next energy source closer to realization.
- The [Science and Engineering Laboratory Building](#) at IUPUI dedication was held in November. This \$27 million high-tech building provides facilities for education and research that contributes to the economic vitality of the state.
- The National Science Foundation awarded the **School of Engineering and Technology** a grant to develop research and training for high school STEM teachers within underrepresented and low income school districts in the metro area of Indianapolis. Teachers in the program will learn to integrate their nanotechnology experiences into their classrooms through teaching modules designed to boost STEM interest and encourage high school students to pursue future careers in STEM fields.
- The extension of the **School of Engineering and Technology's** mechanical engineering program at IUPUC was strengthened by a new agreement. Dr. Alan Jones at IUPUI serves as the program director to coordinate the alignment of program educational objectives and student outcomes across both campuses. The program will allow students to pursue the IUPUI program without the need to leave Columbus.
- The **School of Engineering and Technology's** [Industrial Assessment Center](#) conducted energy assessments for 29 Indiana manufacturing companies. The assessments resulted in recommendations for improving energy efficiency. The students were trained on real-world engineering while the companies benefited from audit for energy efficiency improvement and cost reduction.
- A mechanical engineering professor received a grant from the Department of Energy through Argonne National Laboratory for a 3-year project entitled: "Integration of Polymer Electrolyte Fuel Cell Cathodes."

- A mechanical engineering professor received a grant from NSF for a 3 year project entitled: "Computed tomography image-based study for understanding the impact of electrode microstructure on lithium ion battery performance."
- [Indy Learning Centers](#), a grant-funded program housed in the **School of Engineering and Technology** received external funding for approximately \$500M to provide tutoring services to high needs schools in STEM subjects. The program placed 65 IUPUI students at 8 Indianapolis public schools to provide tutoring to 3,500 students.
- The **School of Engineering and Technology's** department of technology leadership and communication participated service project to provide strategic planning assistance to the Center for Leadership Development, a local not-for-profit organization.
- An organizational leadership and supervision faculty member continued implementation of an international research project, funded by Boeing and sponsored by the American Society for Engineering Education, on the Attributes of a Global Engineer.
- **School of Engineering and Technology's** music and arts technology lecturer performed a multimedia piece "[Until My Last](#)" as an invited performance as part of Synth Nights at The Kitchen center for art, video, music, dance, performance, film and literature, curated by Nico Muhly. The Kitchen features emerging artists who specialize in experimental creative works.
- **School of Engineering and Technology's** professor of electrical and computer engineering was named as one of the [10 influential women in technology](#) in central Indiana by the Indianapolis Star.
- **School of Engineering and Technology's** professor of electrical and computer engineering received an NSF award from the I-Corp program, which has the goal of accelerating the translation of knowledge derived from fundamental research into emerging products and services that can attract subsequent third party funding.
- **School of Engineering and Technology's** Transportation Active Safety Institute (TASI) organized a one-day meeting with National Highway Transportation Safety Administration (NHTSA) to present and demonstrate TASI vehicle testing mannequin. As a result of the meeting, NHTSA decided to contract TASI to make mannequins as one of the four mannequins suppliers around the world for mannequin technology evaluation.
- **School of Engineering and Technology's** Transportation Active Safety Institute (TASI) created and tested a reconfigurable vehicle night testing lighting system. Toyota (Japan) requested the TASI design details and replicated the equipment for their vehicle pre-collision system testing.
- Single Switch Systems, a company cofounded by a faculty member of the **School of Engineering and Technology**, competes in [Clean Energy Challenge](#) in Chicago. The challenge is presented by the Clean Energy Trust, founded by prominent business and civic leaders to fuel clean energy innovation in the Midwest.
- **Richard G. Lugar Center for Renewable Energy** and the **School of Engineering and Technology at IUPUI** paves way for microgrids in Indiana with its Spring Forum, "[Microgrid Interconnections and Energy Storage](#)." The forum addresses concerns about power cleanliness, maintenance responsibility and uptime, as well as challenges in technology assessment, system architecture and grid interconnect faced by facility managers who install renewable energy sources and energy storage capacity.