

AY 2010-11 Major Accomplishments by Mission:
Purdue School of Engineering and Technology, IUPUI
(Cross-referenced **parenthetically** to President's *Principles* and Chancellor's *Guideposts*)

Teaching and Learning

- All of the School's graduate programs in Engineering were nationally ranked by *U.S. News and World Report* with Biomedical Engineering ranked #47, Electrical Engineering ranked #84, Computer Engineering ranked #85, and Mechanical Engineering ranked #101 **(I/I)**
- *U.S. News and World Report* ranked our School #107 in the Best Engineering Graduate School Category (national research category) tied with BYU and the U. of Arkansas and ahead of engineering schools from universities such as U. of Louisville, Tulane, U. of South Florida, SUNY Binghamton, UAB, and SMU **(I/I)**
- Per the American Society for Engineering Education, our School continues to rank #1 nationally for the number of bachelor's engineering technology degrees awarded to women, ranks #2 nationally for the number of bachelor's engineering technology degrees awarded, and ranks #3 nationally for total engineering technology enrollment **(I/I)**
- Engineering Accreditation Commission of ABET, Inc. reviewed the B.S. Biomedical, Computer, Electrical, and Mechanical Engineering programs in fall 2010. The B.S. program in Biomedical Engineering is expected to receive initial accreditation and the other programs are expected to have their accreditation continued pending a July 2011 vote by the Commission. **(I/I)**
- Computing Accreditation Commission of ABET, Inc. provided inaugural accreditation to the B.S. programs in Computer Graphics Technology and Computer Information Technology **(I/I)**
- The Department of Music and Arts Technology and all of its programs received inaugural accreditation from the National Association of Schools of Music **(I/I)**
- The School's newest degree program, B.S. in Energy Engineering, an interdisciplinary program partnering Mechanical Engineering and Electrical and Computer Engineering, will admit its inaugural class in fall 2011 <http://www.engr.iupui.edu/energy/> **(I/I)**
- The Motorsports Engineering program was listed in the American Society for Engineering Education's *Prism* magazine on their "Dynamic Dozen" list of "Hot Courses" **(I/I)**
- Motorsports students win the Inaugural Purdue Electric Vehicle Grand Prix at the Indianapolis Motor Speedway defeating teams from across the world <http://www.engr.iupui.edu/current/EVGP2011.shtml> **(I/I)**
- Articulation agreements were developed and signed with Ivy Tech Community College to support "2+2" programs between Pre-Engineering at Ivy Tech and Computer, Electrical, Energy, and Mechanical Engineering at IUPUI **(I/I)**
- Signed an agreement with Atlanta University Consortium to provide opportunities for students from three Historically Black Colleges and Universities (Clark Atlanta University, Moorehouse College, and Spelman College) to pursue baccalaureate degrees from select disciplines in the School **(11)**

- A “3+2” engineering program with Marion U. has been agreed in principle and a formal agreement is anticipated during the 2011-2012 academic year (I/1)
- Memorandum of Understanding for off-campus graduate programs in electrical and computer engineering in collaboration with Purdue, W. Lafayette and the Naval Post Graduate School for the Naval Surface Warfare Center-Crane was signed by IUPUI and IU (VI/6)
- The Department of Computer, Information, and Leadership Technology created the Honors Minor in Leadership in collaboration with IUPUI’s Honors College (I/1)
- GO GREEN (Green Organizations: Global Responsibility for Environmental and Economic Necessity), led by faculty from Organizational Leadership and Supervision, expanded from Germany to now include France, providing undergraduate and graduate students with the opportunity to learn about sustainability in international contexts <http://www.engr.iupui.edu/gogreen/> (IV/4)
- Global Design Studio, offered through Architectural Technology and Computer Graphics Technology programs, continued to provide service learning opportunities in Thailand (IV/4)
- The Computer Graphics Technology program maintained its robust study abroad experience for students through its longstanding partnership with Polish universities in Poznan and Rzeszow <http://www.engr.iupui.edu/international/cgtpoland.shtml?menu=sa> (IV/4)
- A “2+2” dual-degree program with Sun Yat-sen University was approved by the IU Offshore Program Council for electrical and computer Engineering and mechanical engineering (IV/4)
- The final two years of the B.S. in Biomedical Engineering Technology can now be completed entirely online http://www.engr.iupui.edu/bmet/bs_bmet.shtml?menu=bs (IX/9)
- The M.S. in Technology with a concentration in Facilities Management can be completed entirely online <http://www.engr.iupui.edu/gradprogs/documents/FacilitiesManagement.pdf> (IX/9)
- Biomedical Engineering’s Senior Design team was recognized with an Honorable Mention at the IDEA national competition for their "Liquid Pacemaker Lead" project (I/1)
- Competitive grants to support student learning were received from the National Science Foundation including: (1) “Implementation, Dissemination, Barrier Identification and Faculty Training For Project-Enhanced Learning in Gateway Engineering Courses” and (2) “Central Indiana STEM Talent Expansion Program” grant in collaboration with the School of Science (I/1)
- Developed and piloted new projects for Freshman Engineering courses involving a solar car testing track, providing students a linkage to the School’s energy research and education portfolio (I/1)
- Provided School-specific faculty development opportunities through Lunch-n-Learn Professional Development Series and jointly-funded part-time instructional technology position with IUPUI Center for Teaching and Learning (II/2)

Research, Scholarship, and Creative Activity

- Received \$9.95M in new external awards for the fiscal year, the second highest annual total in the School’s history; faculty submitted 132 proposals for \$23.1M in external funding <http://engr.iupui.edu/research/awards.shtml?menu=etresearch> (III/3)

- Conducted 20 health science research projects and received \$3.82M in research awards from the National Institutes of Health (V/5)
- The School is a founding partner of the Spectrum Warfare Applied Research Center (SWARC) with Purdue, W. Lafayette, Georgia Tech Research Institute, Pennsylvania State University, Ohio State University, and Illinois Institute of Technology. This consortium of universities is focused on moving basic research to market and applying discoveries to known challenges in the electronic warfare area while building strong research collaborations among all member institutions. (III/3)
- The School received Carrier Corporation grants for labs and graduate research fellowship, developed working partnership and collaboration with Cummins, and established a relationship with Altairnano for battery research (III/3)
- The Transportation Active Safety Institute (TASI) was selected as an IUPUI Signature Center and TASI is in the final contract phase of a \$2.5M award from Toyota Corporation (III/3)
- Two license agreements were successfully signed based on inventions generated by faculty from the Department of Electrical and Computer Engineering (III/3)
- The Department of Electrical and Computer Engineering received a major research equipment donation from Delphi Corporation for an advanced driving simulator system (VII/7)
- Several faculty from the Department of Engineering Technology continue to strive to advance energy-related research in the areas of fuel cell technology, sustainable energy sources, renewable energy control systems, and waste-to-energy (III/3)
- Several Department of Biomedical Engineering faculty serve in editorial and leadership roles in prestigious journals and organizations in their discipline including membership on (1) the Editorial Board of the Journal of Nanomedicine and Biotherapeutic Discovery; (2) Editorial Board of Frontiers in Neuroengineering; and (3) the Encyclopedia of Systems Biology (III/3)
- The Department of Music and Arts Technology's Telematic Collective held five performances during that were all live, online, interactive performances between IUPUI and other universities leveraging Internet2 (III/3)
- A faculty member from the Department of Mechanical Engineering had a patent issued for "Iron promoted nickel based catalysts for hydrogen generation via auto-thermal reforming of ethanol" (Patent #7,888,283) (III/3)

Civic Engagement

- Tech Camp, led by a faculty member from Computer Information and Leadership Technology, celebrated 10 years of offering continuing education for high school technology teachers, an annual event that is gaining increasing national recognition and drawing internationally-renowned authors and presenter <http://citserv.cit.iupui.edu/jstarks/techcamp/> (VI/6)
- The Department of Engineering Technology's Construction Engineering Management Technology (CEMT) program is involved in two unique local partnerships: (1) with Riverside Civic League, LLC working with CEMT students to develop the Riverside neighborhood as a living laboratory; and (2) with the City of Indianapolis' Department of Public Works on a new product review project (VI/6)

- Students in several programs participated in service learning and civic engagement outreach projects through Engineers Without Borders, an organization dedicated to providing technical expertise to developing countries **(IV/4)**
- The School's engagement with the 29 companies represented on the Dean's Industry Advisory Council continues to flourish, with appointments secured for new members representing Lilly, Roche Diagnostics, Rolls-Royce, AIT Labs, i.d.o Inc. and IHIF <http://www.engr.iupui.edu/diac/> **(VI/6)**
- The School established three new department/program industry advisory boards this past year, bringing the total to fifteen industry advisory boards, including 180 individuals from industry now engaged in various advisory capacities with the School **(VI/6)**
- Several departments engaged industry partners in supplying and reviewing projects completed through the Senior Design/capstone courses **(VI/6)**
- Lecturers from the New Student Academic Advising Center, participated in the Faculty Fellows Program on Service Learning and incorporated a service project with Keep Indianapolis Beautiful into their Themed Learning Community **(VI/6)**
- Forum on Electric and Hybrid Vehicles was hosted by the Richard G. Lugar Center for Renewable Energy **(VI/6)**
- Collaborated with Indiana industry in over ten research and graduate student projects, with sponsors including Cummins, Delphi, Rolls Royce, Carrier, Pericardial Access, Flowco, and JD Gould **(VI/6)**

Diversity

- Established the Yurtseven International Initiatives Fund, raising more than \$100,000 to support international students and activities in the School **(IV/4)**
- The Department of Biomedical Engineering received \$60K/year grant for 4 years from the National Institutes of Health to support minority graduate students **(11)**
- A student panel representing minority student organizations in the School addressed 90 advisors and supporters at the annual Joint Board of Advisors meeting, where the discussion centered on ways to leverage industry support of Society of Women Engineers, National Society of Black Engineers, and Society of Hispanic Professional Engineers **(11)**
- The New Student Academic Advising Center coordinated academic advising for over 50 students from the University of Tehran, most of whom have concluded their undergraduate work at IUPUI and have returned to Iran to complete their degree; several have returned or are planning to return to IUPUI to begin work on graduate degrees **(IV/4)**
- Continued the longstanding summer Minority Engineering Advancement Program to reach underrepresented minority children and engage them in science, technology, engineering and mathematics activities <http://www.engr.iupui.edu/meap/> **(11)**
- Lecturers in Freshman Engineering from the New Student Academic Advising Center mentored several students that are part of the Norman Brown Diversity and Leadership program **(11)**
- Introduced a Multicultural STEM section of the Summer Bridge Program **(11)**

Best Practices

- Through the Success in Engineering and Technology program, the New Student Academic Advising Center increased the rate at which students were removed from academic probation by providing personal academic interventions with each student **(I/1)**
- Computer Network Center collaborated with University Information Technology Services to upgrade student and instructor computers (88 systems) in 5 School-owned labs and to install 4 collaborative computer stations with large monitors in the ET lower level for student use **(IX/9)**
- Provided greater accesses and efficiencies across the School by switching from primarily use of paper to electronic processes in several key areas (e.g., advising, student services, development) **(X/10)**
- Hosted Freshman Welcome BBQ to welcome incoming students to the School and foster retention and hosted Graduation Reception to build a foundation for strong relationships with the School and recent graduates **(I/1)**
- A laptop program, which promotes students learning with and through technology, has been implemented in the Department of Design and Communication Technology and is being expanded to the Department of Engineering Technology **(IX/9)**
- The response rate from industry for ABET, Inc. Employer Survey, which supports the accreditation process, was almost doubled over previous years by streamlining processes and improving communication with employers of our graduates **(X/10)**
- Created research-outcome-based process for allocation of graduate student funding among departments **(X/10)**
- Completed detailed planning of research space in the Science & Engineering Laboratory Building in collaboration with the School of Science and campus architects and consultants **(VIII/8)**
- Created new procedures for enrollment of IUPUI students in Purdue Engineering Professional Education online courses **(X/10)**
- Increased use of social media (e.g., Twitter, Facebook, LinkedIn) for recruitment, networking, student engagement, and information sharing with stakeholders **(12)**

External Awards and Appointments

- A faculty member in the Department of Electrical and Computer Engineering was selected to receive a IEEE Computational Intelligence Society Evolutionary Computation Pioneer Award, recognizing significant contributions to early concepts and sustained developments in the field—both in terms of fundamental understanding and engineering application **(III/3)**
- A faculty member from the Department of Music and Arts Technology received the Outstanding Researcher Award from the American Music Therapy Association **(III/3)**