

Department of Electrical and Computer Engineering
Purdue School of Engineering and Technology, IUPUI
Strategic Plan 2010-2013
May 2010 V1.0

Vision

Our vision is to be in the top quintile of ECE departments in public research intensive universities in comparable urban areas, recognized locally, nationally, and internationally for its achievements.

Mission

Our mission is to provide to our constituents:

- High quality and well-rounded educational experiences that promote critical thinking, scholarly work, and effective communication
- An environment that encourages and promotes excellence in technical proficiency, leadership, research, creative pursuits, and lifelong learning as well as fosters respect for cultural, ethnic, racial, age, and gender diversity
- Educational programs that are regularly and rigorously reviewed and assessed for continuous improvement
- Outreach and accessibility to the educational, research, and service needs of the broader community through collaboration within school and campus and with other educational institutions, businesses, and government agencies.

Core Values

Core Values that define, inform, and guide our decisions and actions:

- *Academic Excellence*
Achieving academic excellence in response to industry needs is our first priority. We foster, recognize, and value lifelong excellence in learning, teaching, research, and scholarship.
- *Leadership & Continuous Improvement*
We foster, recognize, and value effective leadership at every level in the School. We value a process of continuous improvement.
- *Collaboration & Partnering*
We value collaboration and partnership building within and across disciplines and with the industry and other institutions locally and internationally.
- *Diversity*
We value and encourage intergenerational, multiethnic, and international diversity in our research foci, curricula, and pedagogy and in our faculty, staff, and student composition.
- *Professionalism & Integrity*
We foster, recognize, and value high standards of professionalism and integrity.
- *Responsiveness & Service*

We are committed to service and volunteerism both within and outside our department and to meeting the needs of our constituents.

Goals and Objectives

I. Excellence in Teaching and Learning

A. Provide environment and infrastructure to enhance student learning and enable student success

1. Promote and achieve the campus goal in RISE initiative for ECE undergraduate students
 - a. Require two of the four learning components (Research, International, Service and Experiential learning) for graduation
 - b. Increase support and faculty involvement in undergraduate research supervision
 - c. Promote internship/co-op options in the curriculum
 - d. Provide opportunities for international experience through study-abroad and exchange programs with international partner universities
 - e. Develop service learning courses
2. Conduct comprehensive program and curriculum review once every six years including the review of Program Educational Objectives. Revise curriculum/courses and PEO's when needed.
3. Continue to improve student academic advising.
 - a. Require students to meet the undergraduate advisor at least once a year triggered by registering certain courses.
 - b. Require students to complete a preliminary plan of student in the sophomore seminar ECE 21000, and finalize it at least one semester before graduation.
4. Promote undergraduate mentoring program.
 - a. Encourage faculty and students to form mentoring relationships for academic and career advising, internships, research projects, etc.
 - b. Develop industry mentoring program involving working engineers as mentors.
 - c. Develop peer to peer mentoring program
 - d. Strengthen ECE student community leveraging student organizations (IEEE, HKN, SB, SWE, NSBE, etc) and other means.
5. Assist students in their job search by leveraging IAB, DIAC, and alumni.
 - a. Link this initiative to faculty and industry mentoring programs.
 - b. Develop process for finding more intern positions.
 - i. Leverage IAB and DIAC.
 - ii. Leverage alumni.
 - iii. Leverage faculty networks.
6. Improve the process and expand the use of awards and scholarships for continuing students to encourage them to excel.
 - a. Increase the number of awards and scholarships.
 - b. Identify and exploit local, state and national programs for student awards and scholarships.

B. Support and enhance effective teaching and learning

1. Improve effective use of technology in teaching and delivery.
 - a. Increase the number of ECE courses delivered via both live lecturing and real-time streaming video (online).
2. Provide recitations for selected ECE courses.
 - a. Identify courses that need recitations.
 - b. Select courses for pilot program.
3. Support new course/lab, online course development and alternative course formats.

C. Increase the number and percentage of highly qualified students

1. Increase involvement in recruiting activities in the school and at IUPUI.
 - a. Develop a comprehensive plan for strategic recruiting for both undergraduate and graduate students.
 - b. Recruit more qualified students from Indiana high schools.
 - c. Improve communications with admitted students.
 - d. Recruit more graduate students from Indiana colleges.
 - e. Recruit more graduate students from local industry.
 - f. Recruit more international undergraduate students from strategic locations.
2. Increase the number of merit-based scholarships and funding per scholarship.
3. Make our programs unique and attractive to students in Indiana.
 - a. Add labs to each major area; discuss project-based learning.
 - b. Develop more interdisciplinary areas of concentration for both undergraduate and graduate programs
4. Increase marketing efforts.
 - a. Target non-traditional working students through IAB, DIAC, and other contacts.
 - b. Actively participate in School's marketing efforts.
 - c. Leverage dual-degree programs.

D. Improve student retention and graduation rates

1. Implement peer and industry mentoring program.
2. Involve ECE student organizations/clubs to build student community.
3. Increase the number of classes offered via nontraditional delivery methods.

E. Expand ECE graduate program

1. Increase financial support for graduate students through fellowships and teaching and research assistantships, etc.
2. Increase off-campus graduate course offering.
3. Develop graduate internship program by partnering with local companies.
4. Collaborate with PUWL-ECE to improve the Ph.D. program.
5. Develop and offer short courses for graduate continuing education.

II. Excellence in Research

A. Conduct world-class research

1. Publish research in refereed journals.
 - a. The goal is to publish an average of two (2) journal papers per year per faculty
2. Attract and retain world-class faculty and staff capable of research.
 - a. Execute an incentive/reward system for research.
 - b. Develop a plan for creating endowed Chair position(s) within department.
3. Increase intellectual property generation and technology transfer through IURTC and other research incubators.

B. Increase external funding (obtain an average of \$100,000 funding per faculty member, per year)

1. Increase number of proposals to government agencies, industry, foundations and/or other organizations (an average of 4 proposals per faculty per year).
2. Expand and diversify proposal customer base.
3. Increase number of research active faculty (tenure-track and research faculty).
 - a. Promote teamwork within department.
 - b. Increase the number of grant-funded research faculty and post-doc positions.
 - c. Leverage joint and adjunct appointment opportunities for faculty.
4. Strategically partner with local and national companies and government organizations in collaborative research and advanced development.
 - a. Increase faculty fellowship/internship positions in industry.
 - b. Explore engineer/executive in residence with a company or federal agency.
 - c. Encourage faculty to serve as program directors/officers for programs with federal agencies.
5. Strategically market faculty research and expertise.
 - a. Develop a research page on the department website for each research laboratory.
 - b. Develop a department annual report to highlight research activities (among other things).

C. Improve infrastructure and support for research

1. Develop seed funds for the purpose of initiating research and generating proposals.
2. Allow greater flexibility in adjusting teaching and administrative loads based on the expectations for teaching, research, and service to improve research productivity.
3. Create teaching assistantship positions.
4. Leverage existing research equipment and infrastructure in other departments/schools on campus and in local companies.

III. Excellence in Engagement, Locally, Nationally, and Globally

A. Increase engagement activities, partnerships, and services.

1. Increase service-learning opportunities for students.
2. Increase international outreach efforts and partnerships.
3. Increase undergraduate student involvement in internship and co-op experiences.
4. Develop appropriate mechanisms for external requests related to civic engagement to be aligned with Department resources and assets.
5. Expand industry partnerships relative to student employment opportunities such as scope and breadth of career fairs, selection as preferred recruitment partner.
6. Increase faculty involvement and leadership with IEEE, SAE, and other local chapters of professional organizations.

B. Contribute to economic and civic development of Indianapolis, Central Indiana, and the state.

1. Increase involvement in economic development activities and research parks in the central Indiana area.
2. Develop outreach efforts for specialized populations (e.g., adults with some college but no degree).