



ENGINEERING BEYOND BOUNDARIES

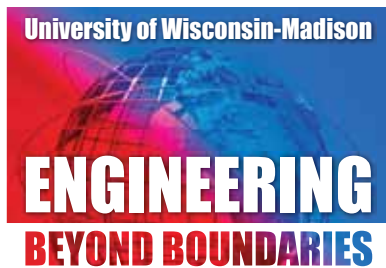
Education for a Rapidly Changing World

Alumni and corporate leaders across the engineering profession have delivered a very consistent message about higher education: Universities need to prepare a new kind of engineer for the 21st century. Our graduates must be ready to thrive in a global economy and an increasingly “flat” world. Students need immersion in more relevant, hands-on experiences, service learning and team involvement to be ready to contribute and lead as employees. The profession today also requires core competence in entrepreneurship and business knowledge; collaboration and communication skills; and the flexibility to respond to a profession that will demand constant retraining.

Above all, our stakeholders want us to help redefine engineering as a people-oriented field that solves problems holistically—not as a narrow technical pursuit.

RESPONDING TO THE CHALLENGE

Recognizing these new realities, the UW-Madison College of Engineering has launched a long-term educational transformation



called *Engineering Beyond Boundaries* (EB2). The initiative provides incentives for faculty and staff to rethink their educational approaches and go beyond the boundaries of:

- **The physical classroom**, through new technology and multi-media strategies that allow faculty to rethink and expand their educational approaches.
- **The college itself**, with programs supporting greater connection across disciplines such as biology, medicine, business and the humanities.
- **The state and nation**, by preparing students to work and succeed in a global economy, across many different countries, cultures and languages.
- **Conventional thinking** about what future engineers need to succeed in a rapidly changing world.

SUCCESS STORIES

Engineering Beyond Boundaries is a competitive program focused on supporting the most innovative ideas to move the curriculum in critical new directions. EB2 supports advances that offer students new global cultural experiences, greater interdisciplinary connections, and more creative uses of technology to enhance learning. Investments include:

- **The Engineering Hall Student Learning Center.** This collaborative, technology-enhanced space is changing the way engineering students study and solve problems. It complements a new math and science tutoring program where upper-level undergraduates mentor first-year students to foster greater success.
- **Introduction to Society's Engineering Grand Challenges.** This course introduces prospective engineering students to the major issues facing the planet and shows them how engineers make a dramatic difference in improving the world.
- **Innovative new certificate programs.** Students are now able to build a cluster of related courses around areas such as sustainability, entrepreneurship, liberal studies and biology.
- **Zhejiang University Summer Program.** Students in this program gain a meaningful immersion experience in Mainland China while completing an eight-credit, eight-week curriculum.
- **Multimedia strategies.** Some courses have successfully migrated core lecture materials to online video archives, freeing classroom time for greater student-faculty interaction and teamwork.

BOTTOM LINE: GREATER STUDENT SUCCESS

Our most important statistics—undergraduate retention and graduation—tell us that EB2 is helping foster student success. From 1999-2009, the number of pre-engineering students who progressed on to an engineering discipline increased from 52 percent to 65 percent. Over the same time, the number of engineering students entering a department who progressed to graduation increased from 82 percent to 95 percent. The initiative is helping the college achieve a goal of graduating 20 percent more engineers, from 3,200 to 3,800, annually by 2012—directly addressing the growing shortage of engineers in America.

HOW CAN YOU SUPPORT EB2

The College of Engineering is seeking the support of alumni and friends to advance EB2 goals, which will ensure that faculty and staff have the financial support to spur new advances in the classroom. Your support can help a greater percentage of students gain vital international experience before graduating. It also can help support cost-intensive, hands-on experiences and service and leadership opportunities beyond the classroom.

The college will also use EB2 funds to continue many of the services provided in the Engineering Learning Center, including free math and science tutoring, student-to-student mentoring and technology-based learning tools that expand the quality and quantity of engineering graduates. The college is working to expand this collaborative learning environment to other shared facilities, including the Kurt F. Wendt Library.

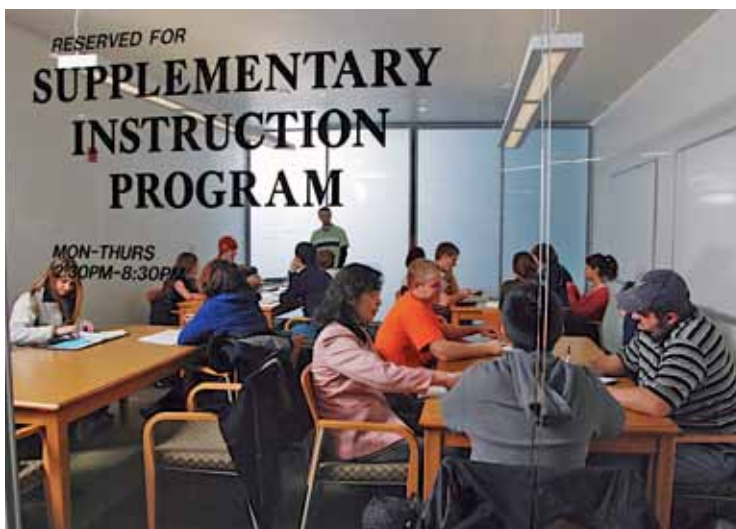
This type of flexible, competitive funding will help sustain a forward-thinking academic experience that is without peer in higher education.



A generous private gift enabled 30 COE students to participate in a two-week leadership training experience in Cape Town, South Africa.

“Our goal is to have 50 percent of all engineering students participate in an international experience before they graduate. We are working to produce globally competent, locally relevant engineers.”

— Dean Paul S. Percy



The Student Learning Center has helped transform the way engineering students study, with an emphasis on peer-to-peer interaction.

FOR MORE INFORMATION

Paul S. Percy, Dean,
UW-Madison College of Engineering
608-265-4048 or percy@engr.wisc.edu

Or

Brian Mattmiller, Assistant Dean,
Alumni and Corporate Relations
608-890-3004 or bsmattmi@engr.wisc.edu