Gavin McCabe Weir, a recent University of Wisconsin-Madison graduate and research assistant, is working on a doctorate in plasma technology at the university.

**UW dean has plan to produce engineering graduates who excel at practical solutions**

*By Joel Dresang of the Journal Sentinel*

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**Madison** - In both quantity and quality, Paul Peercy wants to improve the workforce coming out of the University of Wisconsin-Madison College of Engineering.

Gavin McCabe Weir could be a prototype.

A May graduate with a double major in mechanical engineering and physics, Weir already has broad, hands-on engineering experience from internships in mechanical and civil engineering and [volunteer projects](#) in Orongo, Kenya, and Red Cliff, Wis. He values the volunteer projects especially because they’re community-based and sustainable.

“We’re trying to make do with less, to have better machines, make better processes, with less resources. I think that’s important for the future because we are not operating on a sustainable level,” Weir said during a break from his job as a research assistant on an [experiment](#) involving plasma science and fusion energy.

As industries and societies around the world face mind-boggling challenges involving such matters as infrastructure, medicine, information technology and energy, engineers are the workers trained to apply scientific knowledge to practical solutions, says Peercy, UW’s engineering dean.

Speaking at the monthly Madison meeting of the [Wisconsin Innovation Network](#) last week, Peercy outlined what the college is doing to advance engineering graduates.
"It's vital that we educate students who are globally competent and locally relevant," Peercy said. "That is, they can work in different places in the world, but wherever they work, they've got to fit into that culture and that society."

The need for engineers is acute. They're perennially on the most-wanted list in Manpower Inc.'s talent shortage surveys. Federal stimulus spending in such areas as energy technology and infrastructure should increase demand, Peercy said, and competition from emerging economies such as China and India is accelerating.

"We are so short on engineers in some disciplines in this country that my colleagues from industry in this country are telling me that they have to relocate offshore to get the workforce they need," Peercy said in an interview.

Among his approaches to rev up UW's engineering college, Peercy has promoted:

• Building a pipeline. To encourage interest and skills in math and science among schoolchildren, the college and its students and faculty participate in programs such as Project Lead the Way, Science Olympiad and First Robotics. The college is hosting the National Science Olympiad tournament in 2011. Peercy said there also is more outreach to women and minority students and technical and community colleges.

• Increasing capacity. The UW System Board of Regents approved an extra tuition charge of $700 a semester for engineering students to help the college offset higher costs of engineering instruction and to beef up staffing and enrollment. Peercy told the regents he'd boost undergraduate enrollment by 20% in five years. Already, in the first year, enrollment is up almost 8%, to 3,450 from 3,200.

• Retooling curriculum. The college is integrating disciplines and broadening students' exposure to other fields through team-teaching and more common coursework. It's stressing experiential learning and entrepreneurial thinking through hands-on projects, competitions and student organizations such as Engineers Without Borders. It's fostering more teamwork and communication. Engineering Hall has been remodeled with a study lounge, a cafe and group study tables.

Peercy said the engineering school's workforce efforts reach beyond undergraduates on campus. For instance, the college's 60-year-old department of engineering professional development provides continuing education to more than 13,000 individuals a year.

Collaboration is another way to extend the college's reach.

Michael Lovell, dean of the UW-Milwaukee College of Engineering & Applied Science, recently spent a day on the Madison engineering campus and said that as the UWM program expands, he is working with Peercy on research, teaching, customized training and other initiatives between the two colleges.

"There's a lot of things we can do," Lovell said. "He and I have very similar mindsets. We're big believers in collaboration, and it's the best way to move things forward. And it's the best use of the state's money if we work together."

Peercy agreed. "I think you'll see us continue to increase those interactions," he said. "We're actually trying to work together to help industry in the state. We're stronger when we work together."
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