

## Mechanical Engineering @ Iowa State



# InCyde Mechanical Engineering April 30, 2010

## Two with ME ties earn NSF Graduate Research Fellowship awards

Jason Boggess, senior in mechanical engineering, and Nordica MacCarty, BSME'00, are recipients of the 2010 National Science Foundation (NSF) Graduate Research Fellowship award.

Each year NSF awards these fellowships to recognize and support outstanding graduate students in science, technology, engineering, and mathematics disciplines. These students will receive three years of financial support including a \$30,000 annual stipend, a \$10,500 cost-of-education allowance, a \$1,000 one-time international travel allowance, and TeraGrid Supercomputer access.

Boggess is planning to pursue a graduate degree at the Massachusetts Institute of Technology or Stanford in the fall. He looks forward to building on his undergraduate research experiences to discover new ways of approaching challenges. "Doing research is rewarding because it gives you an opportunity to help others," Boggess says. "With NSF being funded by the government, you know that whatever you do with an NSF grant goes back into the public for everyone to use, so you can bring a lot of value to a number of people." His current research interests are in 3-D visualization and advanced rendering techniques along with robotics, but he's also open to new projects and interests.

MacCarty has been volunteering and working for the nonprofit Aprovecho Research Center in Oregon for the past six years, developing and sharing appropriate technology-based cooking stoves across the world. She will continue to focus on appropriate technology, alternative energy, and international development while she pursues her PhD remotely at Iowa State. "I am at the point in my career where I'd like to really take my intentions and experiences to the next level, helping to influence decision making and policy in the U.S. and abroad," she says. "To do that, I need to broaden my horizons and understanding, and this NSF support can help me study what I find most interesting and useful to reach my goals. I'm looking forward to spending my first year investigating what is out there and discovering where I can be of best use." ([News release](#))

## Department selected to host NSF REU site

Starting this summer, the Department of Mechanical Engineering will be hosting a three-year Research Experiences for Undergraduates (REU) program focused on the area of microscale sensing actuation and imaging (MoSAIC). This is the first REU site within the ME department.

Associate Professors Sriram Sundararajan and Pranav Shrotriya assembled the National Science Foundation proposal and were recently notified of the award. "We are looking forward to offering this program and working with the students," says Sundararajan. "It will help enhance the visibility of the department, the college, and the university, while also introducing students to the innovative research taking place on our campus."

## ME 270 designs on display during Veishea

Students in ME 270—Introduction to Mechanical Engineering Design—showed off their projects during Veishea 2010. The teams worked on developing appropriate technology for impoverished nations and created a solar box stove, bicycle charger, grain grinder, rocket stove, wind turbine, solar light, and water valve.

### ME 270 Veishea



Veishea attendees check out the water valve design created by ME 270 students.

## An overseas collaboration

The ME graduate program office is constantly seeking quality PhD candidates to help contribute to research and add to the prestige of the department. Recently, this pursuit took several representatives from Iowa State's College of Engineering to Hochschule Mannheim—University of Applied Sciences. The group is working out details for a program that will help students graduating from the university in Germany transition to Iowa State to earn a PhD.

During spring break, a group from Iowa State's College of Engineering visited Mannheim to learn more about the university's degree programs, which include both bachelor's and master's degrees and require students to complete an internship before graduation. The university also works closely with industry partners such as John Deere and Mercedes Benz and focuses on applied research with a global outlook.

Ted Heindel, interim ME department chair, and Sriram Sundararajan, ME associate chair for graduate study and research, were joined by Balaji Narasimhan, COE associate dean for research and graduate studies; Nancy Knight, COE graduate enrollment management director; and Monica Lamm, CBE assistant professor, on the trip.

"In Mannheim, students get hands-on training and do a lot of practical coursework," says Sundararajan. "Because of their foundation, they have potential to add a lot of value to the experimental research taking place in the department."

The ME department has had two students come to Iowa State for

The program will launch with a diverse cohort of eight to ten outstanding undergraduate students and expand in future years to an intended pool of ten to twelve students. In addition to leveraging the ME graduate program's recruiting base in the Midwest, Sundararajan and Shrotriya have begun working with various programs at the college and university including the Summer Program for Enhancing Engineering Development, the Program for Women in Science and Engineering, and the Graduate College to help recruit students to the program. ([News release](#))

PhDs from the University of Applied Sciences—Matthias Veltman is a research assistant in the Internal Combustion Engines Laboratory and Norman Keller works in the Experimental Multiphase Flow Laboratory. Through their research contributions and accomplishments in the classroom, both demonstrate how successful the program could be. ([News release](#))

Do you have department news you'd like to share? Please e-mail news items for InCyde Mechanical Engineering to Jessi Strawn at [jlstrawn@iastate.edu](mailto:jlstrawn@iastate.edu)

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