

Engineering

news

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DEAN'S MESSAGE

Rowan Engineering's creative faculty and groundbreaking program continue to fuel innovations in engineering education, producing engineers ready to meet tomorrow's grand challenges.

This newsletter shares the story of a team of engineering students that is working on a mobile health clinic that ultimately will deliver health care services to underserved members of our community. Our strong partnership with Cooper University Hospital made possible this project, which is just one of many collaborations we anticipate having with that well-respected institution.

In the classroom, Dr. Smitesh Bakrania developed an iPhone app — now available through the iTunes Store — that boosts student engagement and learning.

Earlier this year, Rowan Engineering continued its outreach to Central America as our Engineers Without Borders team journeyed to La Ceiba in El Salvador to further work on a clean water project that began almost five years ago.

At Rowan Engineering we pride ourselves on being an agent for advances in engineering education and research — innovating both locally and beyond.

 Steven Chin, Ph.D., P.E.
Interim Dean

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COE helps take health care on the road

Engineering good health is the goal of a Rowan team that is working to design a mobile health clinic in conjunction with Cooper University Hospital, Camden.

Under the guidance of Dr. Eric Constans and Dr. Jennifer Kadlowec of Mechanical Engineering, four undergraduate students have spent the spring semester on an engineering clinic project that will turn a virtually empty 55-foot trailer into a mobile medical center.

The all-mechanical engineering clinic team members are Lauren Newbert, '12, of Marlton; Kyle Pillion, '13, of Marlton; Alex Redfield, '12, of Penns Grove; and Chris Whipple, '13, of Williamstown.

The students have been using SolidWorks software to configure the interior, and they plan to complete a full, three-dimensional, computer-assisted design this semester. Based on the students' designs, Cooper hopes to outfit the trailer with

patient exam rooms, waiting areas, medical equipment and more in the summer and possibly have it on the road in the fall.

When the unit is complete, Cooper medical staff will take it to sites throughout South Jersey, providing pro-bono services to the public and fee-based corporate wellness screenings. Cooper expects the trailer to accommodate multiple patients at a time, some in waiting rooms and some in examination areas.

Pillion said the effort benefits students and others. "It's a real-life engineering project that will serve the community," he said.

The mobile health clinic is just one of many projects Rowan expects to collaborate on with Cooper, with whom it is opening Cooper Medical School of Rowan University — the first four-year allopathic medical school in South Jersey — in the summer.

"Rowan engineers collaborating with Cooper is a powerful combination," Constans said.

Rowan Engineering students **Kyle Pillion, Chris Whipple, Lauren Newbert** and **Alex Redfield** (left to right) view a SolidWorks 3D CAD rendering of the proposed mobile health clinic (projected in the background).



A class app: Professor puts technology to work in the classroom

Thanks to a clever new pocket-sized “classroom assistant,” Dr. Smitesh Bakrania, assistant professor of mechanical engineering, now sees more raised hands in the classroom than ever.

Bakrania originally conceived the idea for this diminutive helper — the PikMe app — when he began storing students’ names and their photographs on his iPhone to help jog his memory when selecting participants in large classes. But he quickly realized the technology had much more classroom potential.

“To create a learning environment, it is important to connect with students. A tool to remember their names and get them engaged is vital,” he said.

Bakrania soon incorporated the design of the app into an engineering clinic, where mechanical engineering student Ryan Sikorski, ’11, from Blackwood, contributed most to the development of the requisite code.

Now available from the iTunes Store, PikMe allows instructors to randomly choose students and rate their responses to questions. The device already has transformed classroom dynamics, prompting more students to participate.

“Students commented that they became comfortable because they knew they would get picked anyway — why not answer now?” Bakrania said.

Buoyed by this success, Bakrania is hard at work on another app — ClikMe — which will enable students to use their phones to respond simultaneously to questions beyond the traditional multiple-choice and true-false question types.

Meanwhile, he and his students continue to fine-tune PikMe. “Once the app hit the iTunes Store, I started getting all this feedback from users,” Bakrania said. “We are incorporating these ideas into the next version, which will have expanded capabilities to further assist instructors while teaching.”

Dr. Smitesh Bakrania demonstrates his new iPhone app, designed to increase student engagement and participation in the classroom.



Advisory Council plots the course for the future

Since the Rowan University College of Engineering began its extraordinary journey, the Dean’s Advisory Council has been deeply engaged in mapping out its course.

“Most of the members are in organizations that have a need for qualified engineers to achieve their success,” said John Jones, chair of the council and chief operations officer of MOCA Systems Inc., in Hanover, Md. “So we are all very fortunate to have

John Jones, chair, and Lisa Morina, co-chair, help guide the College of Engineering Dean’s Advisory Council.



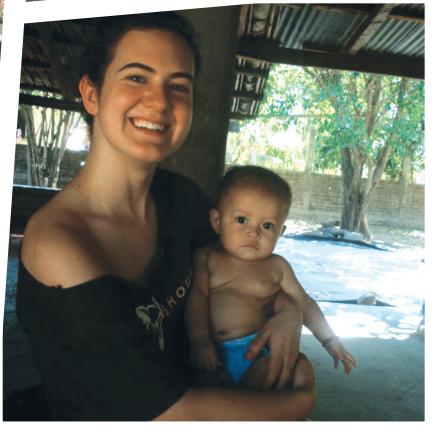
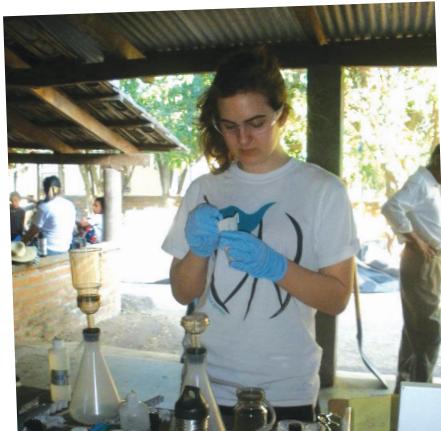
an institution like Rowan in our backyard with such a top-notch program that continually graduates engineers with excellent fundamentals and critical-thinking skills.”

In its role, the council focuses on several missions: advising the College on educational and research needs in the private and public sectors; developing and promoting the College’s image; representing the College in business, professional and educational communities; and cultivating potential supporters for the College. The council meets quarterly; however, many activities occur between meetings that include council member participation.

The 25-member council brings a range of expertise to the table. “It’s a great mix of people from different organizations. It’s everything from smaller engineering companies to energy, defense and other areas,” said Lisa Morina, co-chair of the council and executive director of the Gloucester County Department of Economic Development. “So you get a really good mix of diversity, not only in industries, but in experience, outlook and opinions.”

As a long-time member of the Advisory Council, Jones is pleased to have witnessed the College’s remarkable accomplishments. “I am honored and privileged to be a part of Henry Rowan’s vision because it is being implemented in a very meaningful way every day.”

Engineers Without Borders™ travels to El Salvador



Engineering students shared this collection of snapshots from their January Engineers Without Borders™ (EWB) trip to El Salvador in Central America. They continued an EWB clean water project that began almost five years ago, installing biosand filters designed to purify water for the community of La Ceiba.

(top, left) Sunlight filters through the palm trees at a coastal town.

(top, center) Project lead Kelly Barb, '13, a chemical engineering and Spanish major from Sewell, performs water-quality tests.

(top, right) La Ceiba is located 7.5 miles east of the Pacific Ocean, shown in this photo.

(middle, left) Project lead Sarah Gettings, '13, a chemical engineering major from Runnemede; Kelly Barb; and Jacob Scaramazza, '14, a chemical engineering major from Woodstown, enjoy an ice cream break.

(middle, center) Team members play soccer on the beach with community members after a long week of work.

(middle, right) Sarah Gettings and Kelly Barb stand with the mold used to make concrete boxes for the filters. These boxes house the gravel, sand and biological layer that filter the water.

(bottom, left) A little helper lends a hand.

(bottom, center) Family members from the community stand with their new filter.

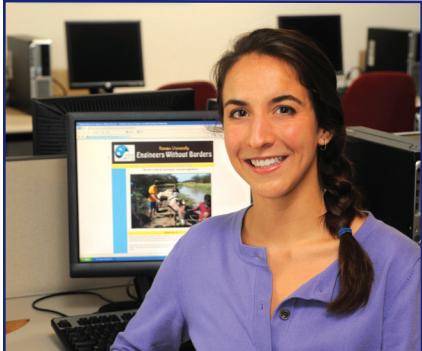
(bottom, right) Kelly Barb holds a local child, Ashley Catherine.



College of Engineering

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Among the best and brightest . . . Chemical engineering major Brighid Burgin is only one of Rowan Engineering's many exceptional students. After graduation this May, Burgin will begin a permanent position with ExxonMobil Research and Engineering in Paulsboro, N.J., where she spent two summers as an intern.

To learn more about Rowan's extraordinary engineering students, visit www.rowan.edu/engineering.

Programs ignite engineering excitement

These Rowan Engineering summer programs offer students and teachers first-hand engineering experiences:

Project Lead the Way

**Teacher Training,
July 8 to 20, 2012**

Select high school teachers learn to implement project-based, pre-engineering curricula in the classroom.

Boys' Engineering, Science & Technology (BEST) for Middle School Boys, July 11, 2012

Boys currently in sixth and seventh grade conduct hands-on, technology-related projects in the engineering labs during this one-day workshop.

Attracting Women Into Engineering (AWE) Workshop for Middle School Girls, July 17, 18 or 19, 2012

Girls currently in sixth and seventh grade

focus on hands-on experiments and professionalism during these one-day workshops.

Young Profs Summer Camp, July 23-27, 2012

This is a one-week camp for 11-14-year-olds with high-functioning autism and Asperger's syndrome. It offers a range of academic programs, including an engineering segment on July 23. Contact John Woodruff at woodruff@rowan.edu for details.

Rowan's Introduction for Students to Engineering (RISE) High School Engineering Workshop, July 24 to 26, 2012

High school students preview engineering through hands-on projects and labs and campus and industry tours.



Visit www.rowan.edu/engineering/k-12 to register and for additional information on programs.

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