INSIDE THIS ISSUE

Rowan University

Engineering News

ROWAN UNIVERSITY COLLEGE OF ENGINEERING

Dr. Stephanie Farrell and Dr. Kauser Jahan selected as Fulbright fellows. *See page 3*

SUMMER 2014

Dean's Message

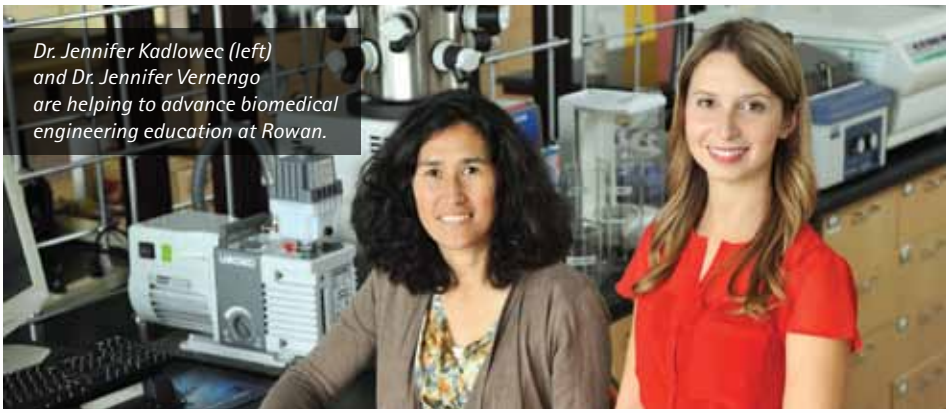
Dr. Anthony Lowman

These are exciting times in the Rowan University College of Engineering. Every day there is evidence of growth and transformation of our College from a national leader in undergraduate education into a comprehensive College that offers unlimited opportunities for education, research and innovation.

In this newsletter, we update you on our state-of-the art new facility, which will support our strategic vision for years to come. The new $76-million project will help us create an Engineering Campus with the current Henry M. Rowan Hall at its heart. The campus will allow us to continue growing, with the goal of doubling both our undergraduate population and faculty. We are already on our way, as a record 375 first-year students join us in fall 2014 along with eight new faculty members, including our founding chair of Biomedical Engineering, Dr. Mark Byrne.

The upcoming year also will mark a number of other new beginnings. One notable initiative is the launch of our new undergraduate program in biomedical engineering. The 40 students who comprise our inaugural class of biomedical engineering majors will pursue a real-world curriculum and learn from faculty members who are engaged in cutting-edge research. Additionally, we hope to launch our doctoral program soon with support from the Rowan Family Foundation.

Innovation and creativity in engineering education and research are fast becoming synonymous with Rowan. I hope that you share the sense of energy and excitement at the College as we continue to build on excellence.



Dr. Jennifer Kadlowec (left) and Dr. Jennifer Vernengo are helping to advance biomedical engineering education at Rowan.

Biomedical engineering seeking solutions to health issues

The dynamic field of biomedical engineering is aimed at transforming lives through the delivery of novel health care solutions. As this revolutionary discipline advances innovation in tissue therapy, medical implants and many other areas, Rowan University is breaking new ground in biomedical engineering research and education.

Representing the growth in biomedical engineering education at Rowan is the Rowan Bioengineering Scholars Program. Spearheaded by Dr. Jennifer Kadlowec, professor of mechanical engineering, and Dr. Thomas Merrill, associate professor of mechanical engineering, the program utilizes a five-year, $200,000 grant from the National Institutes of Health (NIH) to establish team-based projects that will cultivate students' biomedical design expertise.

The effort began during the 2013-14 school year and led to the summer immersion program at Cooper University Hospital in Camden, N.J. Seven College of Engineering scholars shadowed doctors at Cooper to help identify and analyze various medical problems. Also during the summer, they learned about intellectual property, regulations and various business-related topics.

This fall, they will begin to address the needs they have identified through bio-design projects in junior and senior engineering clinics and potentially in master's projects. Students in the program are Matthew S. Donow '15, Jethro D. Medina '16, Andrew R. Rupp '15, Matthew L. Short '15, Kathryn Wrinn '16 and graduate students Jonathan Gabriel and Tyler D. Gale.

Students looking to participate in the design of innovative health solutions find the work of Dr. Jennifer Vernengo, assistant professor of chemical engineering, equally rewarding. Vernengo's research focuses on the use of biomaterials in the development of new treatments for back pain. Her current efforts, supported by a $315,000 NIH grant, are focused on the use of hydrogels with bioadhesive properties for intervertebral disc repair. Collaborating with her are Kadlowec and Dr. Cristina Iftode, associate professor of biological sciences. Vernengo engages students in her projects through Rowan's engineering clinic program to help with mechanical testing and other aspects.

This fall the College of Engineering welcomes its inaugural class of biomedical engineering majors. They enter an environment that truly inspires creative thinking and new ideas.

"At Rowan Engineering, innovation is part of our DNA," said Merrill, CEO and co-founder of FocalCool LLC, based in the South Jersey Technology Park in Mantua Township, N.J. "Our new biomedical engineering program will draw upon the College's heritage of hands-on, real-world, project-based learning to help train the next generation of engineering innovators."

Two COE profs land prestigious Fulbrights

Two College of Engineering professors will take Rowan University engineering education models around the globe as Fulbright fellows during the 2014-2015 academic year.

This spring, the Fulbright U.S. Scholar Program awarded grants to Dr. Stephanie Farrell, professor of chemical engineering, and Dr. Kauser Jahan, professor of civil and environmental engineering.

The highly competitive program operates in 155 countries, serving to increase the mutual understanding between U.S. residents and residents of other countries, according to the organization. This year, the program selected 1,100 U.S. faculty and professionals to travel abroad during the 2014-2015 year.

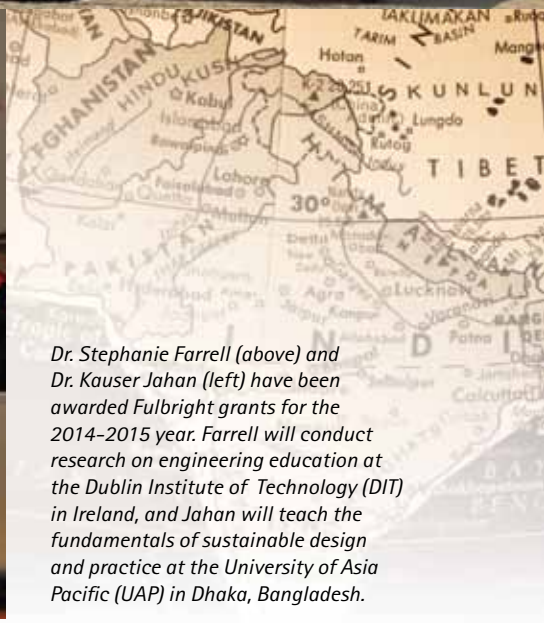
Farrell will conduct research on engineering education at the Dublin Institute of Technology (DIT) in Ireland. There she will study the development of professional identity and retention among engineering students as part of the only Fulbright awarded worldwide specifically for engineering education.

With experience conducting workshops on engineering education in such locations as Kazakhstan and India, Farrell hopes to support the integration of project-based learning into the Irish university's curriculum and develop research collaborations with colleagues at DIT that will continue after she returns to Rowan in fall 2015.

At the University of Asia Pacific (UAP) in Dhaka, Bangladesh, Jahan will teach the fundamentals of sustainable design and practice through a curriculum based on Rowan Engineering's hallmark project-based learning approach. She also will lead faculty workshops that introduce techniques in effective teaching and address the challenges educators face in developing countries. She will conduct extensive research projects on subjects important to Bangladesh, including the country's need for alternate energy and the use of algae as a food source to combat malnutrition.

She hopes that by integrating sustainable development teachings she can help develop a national model for her homeland.

"It is an honor to have such a prestigious organization select two of our professors in one year for such an award," said Rowan College of Engineering Dean Dr. Anthony Lowman. "This speaks to the quality of our faculty and their innovations in engineering education. We always have believed our engineering faculty members are among the best in the nation. These awards acknowledge just how exceptional they are."



Dr. Stephanie Farrell (above) and Dr. Kauser Jahan (left) have been awarded Fulbright grants for the 2014-2015 year. Farrell will conduct research on engineering education at the Dublin Institute of Technology (DIT) in Ireland, and Jahan will teach the fundamentals of sustainable design and practice at the University of Asia Pacific (UAP) in Dhaka, Bangladesh.

Rowan Family Foundation supports Ph.D. program, more

Once again the Henry M. Rowan family is transforming the face of engineering education at Rowan University and for New Jersey and beyond.

At the end of 2013, the Henry M. Rowan Family Foundation awarded $400,000 to the College of Engineering to launch a Ph.D. program and to further develop an already-prominent undergraduate program.

The gift provides $300,000 to establish the Henry Rowan Engineering Ph.D. Fellowship Program and $100,000 to initiate the Henry Rowan Engineering Globalization Fellowship Program for Undergraduates. The donation came two decades after New Jersey industrialist Henry Rowan and his late wife, Betty, gave $100 million to then-Glassboro State College in part to create the College of Engineering, which established a new model for undergraduate engineering education.

The College soon anticipates welcoming its first class of Ph.D. fellows, top academic students who exhibit strong research capabilities in the COE's five undergraduate disciplines—biomedical engineering, chemical engineering, civil and environmental engineering, electrical and computer engineering, and mechanical engineering. Thanks to the Foundation gift, the initial group of Ph.D. fellows will receive full stipend and tuition support, similar to what the first class of undergraduate students received in 1996.

According to Dr. Anthony Lowman, dean, the unique doctoral program will be modeled on the College's undergraduate Engineering Clinic format, placing a heavy emphasis on conducting applied research and developing new technologies while fostering

continued on page 6

Faculty expansion underscores COE growth

The Rowan College of Engineering welcomed five new full-time faculty members during the 2013-14 academic year. The new faculty members expand the breadth and depth of innovative research across numerous areas of engineering practice and better enable the College to support future increases in student enrollment.

New faces that came on board during the past year are:

Nidhal Bouaynaya, assistant professor, Electric and Computer Engineering

Nidhal Bouaynaya obtained her Ph.D. in electrical and computer engineering from the University of Illinois at Chicago in 2007. Prior to joining the Rowan faculty, she served as an associate professor in the Systems Engineering Department at the University of Arkansas, Little Rock from 2007-2013. Her research interests are in signal, image and video processing; genomic signal processing; and mathematical biology. She is a member of the Institute of Electrical and Electronic Engineers.

Kaitlin Mallouk, instructor, Mechanical Engineering

Kaitlin Mallouk holds a Master of Science degree in environmental engineering from the University of Illinois and a Bachelor of Science in chemical engineering from Cornell University. She currently is completing her Ph.D. in the environmental engineering program at the University of Illinois. Her doctoral research is supported by a National Science Foundation Graduate Research Fellowship and involves implementing and testing a novel air pollution control technology for organic gases that allows the captured organic gases to be recovered as liquids so that they can be recycled.

Jenahvive Morgan, instructor, Civil and Environmental Engineering

Jenahvive Morgan obtained her Ph.D. in environmental engineering from the University of Michigan in 2013. At Michigan, her teaching experience included work as a graduate student facilitator, engineering teaching consultant and graduate student instructor. Her research interests are in the areas of environmental science, hydrology, water quality, aquatic ecology, wetland restoration, GIS modeling and environmental compliance. She is a member of the American Society of Civil Engineers (ASCE) and is an ASCE ExCEEd Fellow, 2014.

Bernard Pietrucha, instructor, Electric and Computer Engineering

Bernard Pietrucha has served as an adjunct professor at the Rowan College of Engineering since 2001. His industrial experience includes employment at AT&T, Bell Labs and Lucent Technologies, where he worked on communications satellites, semiconductor device development and qualification, and cellular telephone base station development and manufacturing. He received his Ph.D. in electrical engineering from Rutgers University in 1986, specializing in the physics of semiconductor devices.

Joseph Stanzione, III, instructor, Chemical Engineering

Joseph Stanzione earned a Ph.D. in chemical engineering from the University of Delaware in 2013. He previously served as a chemical engineer civilian contractor for the United States Army, Department of Defense. His research interests are in the areas of alternative renewable chemicals, green chemistry and engineering, and bio-based polymers and composites.

Rowan Engineering breaks ground for second building

Students, alumni, faculty, staff, donors, friends, elected officials — approximately 700 strong they attended the ceremonial groundbreaking for the new Rowan College of Engineering building on Oct. 2, 2013.

Among those turning dirt for the new structure were New Jersey Gov. Chris Christie; State Senate President Steve Sweeney; and benefactor Henry Rowan, who in 1992 donated $100 million to then-Glassboro State College to in part create an innovative engineering program.

The new building, slated to be constructed on the parking lot across from and connected by a bridge to the original building, will help enable Rowan Engineering to double its enrollment to nearly 2,000 students. Presently, administrators are working with architects on plans for the facility, which is expected to be open in AY 2016-17.

Gov. Chris Christie addresses attendees at the groundbreaking for the new Rowan College of Engineering building.

Much of the funding for the building comes from the Building Our Future Bond Act, a referendum approved by New Jersey voters in 2012. The State awarded Rowan $117 million, which will be used in large part to construct the College of Engineering facility and a building for the Rohrer College of Business.

The new three-story, 90,500-square-foot College of Engineering structure will more than double classroom and lab space, housing students in five undergraduate majors, a master's program and a doctoral program that is anticipated to start shortly.

At the ceremony, the governor applauded Rowan President Dr. Ali Houshmand for his commitment and Henry M. Rowan for his generosity.

"Mr. Henry Rowan, I want to express my sincere appreciation for the enduring legacy you have created," the governor said. "The people of New Jersey are deeply indebted to you and your family."

Dean Dr. Anthony Lowman said, "Events like this happen once or twice in the life cycle of a college. We had that first experience 20 years ago, when Henry and Betty Rowan donated the $100 million that in part created our world-class, nationally recognized engineering college. The new building and the commitment by Dr. Houshmand and the University to double our faculty will allow us to build on our excellence and become one of the top engineering colleges in the country."

Dean Dr. Anthony Lowman, Henry Rowan, New Jersey Gov. Chris Christie, State Senate President Steve Sweeney, Rowan University President Dr. Ali Houshmand and Rowan Board of Trustees Chairman Linda Rohrer (left to right) break ground for the College's second building.

Lockheed Martin and Rowan expand strategic partnership

Lockheed Martin and Rowan University are taking their ongoing partnership to a new level, collaborating on the research and development of innovative technologies, while continuing to build the skills and experience of future engineering professionals.

The two organizations, which have worked closely together as part of the Rowan College of Engineering clinic program, will collaborate on the next generation of radar system products and services for Lockheed customers. To support research activities, Lockheed Martin and Rowan are planning a joint facility as part of a new second building at the South Jersey Technology Park at Rowan University in Mantua Township, N.J.

The facility also will provide dedicated space for the growing Rowan/Lockheed Martin junior and senior engineering clinics. Taught in cooperation with Lockheed personnel, the clinics build students' engineering experience and skills, while also providing Lockheed Martin with a pipeline of potential future employees. This past year, nine Rowan students who participated in the Lockheed Martin sponsored clinics went on to summer internships at the company's Moorestown, N.J., facility.

Another major thrust of the partnership is a planned Combat Systems Engineering Program, a professional certificate program tailored for systems engineers in the defense industry. The curriculum will encompass five online courses and is slated to begin in early 2015.

Carmen Valentino, vice president of Naval Radar and Future Systems at Lockheed Martin, Moorestown, N.J., said, "We are excited to prepare for this next step in our partnership with Rowan University to collaborate on the next generation of products and services for our customers. Together we can create the innovative and affordable technologies for our customers, while developing the talented individuals who will work on them for many years to come."

Dr. Anthony Lowman, dean of the College of Engineering, added, "The partnership with Lockheed Martin embodies our commitment to progressive, forward-thinking engineering education. By furthering our relationship with this world-class company, we enable our students and professors to contribute to vital industry needs, while also providing students the real-world skills that will be valued for decades to come."

Rowan Family Foundation supports Ph.D. program, more

continued from page 4

greater ties with Rowan's industry and government partners.

The Globalization Fellowship Program for Undergraduates will start in the fall, enabling select undergraduate students to study abroad at prominent universities and to complete internships at corporate sites around the world, including at subsidiaries of Mr. Rowan's Inductotherm Group. These opportunities will better prepare students for positions in the global marketplace. The College is finalizing educational and corporate partnerships in England, Scotland, Japan and Australia.

"The College of Engineering has proven itself to be an excellent steward of our family's gifts. These new Ph.D. and Globalization programs will provide more opportunities for students at all levels and will further distinguish Rowan Engineering as a leader in the field," said Virginia Rowan Smith, vice president of the Henry M. Rowan Family Foundation and a member of the Rowan University Board of Trustees.

Engineering News
Volume IX, Issue II • Summer 2014

Dr. Anthony Lowman	Dean
Dr. Steven Chin	Associate Dean
Melanie Basantis	Outreach Director
Maria Perez-Colon	Program Advisor
Patricia Quigley	Editor/Writer
Doug Clauson	Writer/Project Manager
Craig Terry	Photographer
Traci Belli-Downing	Graphic Designer

Engineering News is published three times a year by the College of Engineering to highlight the achievements of its faculty, staff and students. We welcome comments and suggestions. Send correspondence and inquiries to:

College of Engineering,
c/o Editor, ***Engineering News***
Rowan University
201 Mullica Hill Road
Glassboro, NJ 08028-1701

Contact:
856-256-5300
856-256-5350 (fax)
engineering@rowan.edu
www.rowan.edu/engineering

Rowan Engineering is a family tradition

For the Salvatore family, attendance at Rowan University's College of Engineering has become a family tradition. Jared and James Salvatore, 21-year twins from Hammonton, N.J., and seniors in the electrical and computer engineering program, are the latest siblings to call the College home.

Jared and James enrolled in the engineering program in 2010, following the path of their older brothers, Daryl Jr., 25, and Domenic, 24. Daryl works as a manufacturing engineer at O & S Research in Cinnaminson, N.J., leveraging his 2011 mechanical engineering degree. One year later, he was followed by Domenic, who earned the same degree in 2012 and currently works as a process engineer at the Derbyshire Machine & Tool Company in Philadelphia.

As one might expect from twin brothers, Jared and James describe themselves as having a very close relationship, working as a team to successfully complete the engineering program curriculum. Often, they can be spotted together in the same classes. Sibling rivalry is certainly not a factor with this duo.

"We came [to Rowan] because it was one of the best places to go, especially for engineering," says Jared. "We've been able to support each other along the way, mostly taking the same classes. This past semester, we were able to take three classes together."

The Salvatore family tradition at Rowan extends beyond Jared and James and their two brothers. Starting it all off was father Daryl Sr., who earned his bachelor's degree in business in 1984 at then-Glassboro State College. Like their father and brothers, Jared and James look forward to crossing the commencement stage next year and proudly accepting their Rowan diplomas.

All IN THE FAMILY: (left to right) James, Jared, Daryl and Domenic Salvatore

Rowan University
College of Engineering
201 Mullica Hill Road • Glassboro, NJ 08028

Nonprofit Org.
U.S. Postage
Paid
Bellmawr, NJ
Permit #1047

Alumni Profile: Crystal Leavey

With a plate of more than 20 environmental engineering projects awaiting her every day, Crystal Mattson Leavey relies heavily on the skills she developed at Rowan.

Leavey 32, is a project engineer in the Environmental Division at Pennoni Associates in Haddon Heights, N.J. Aside from her daily management of a voluminous range of complex projects, she is also charged with the coordination of investigation development and remediation strategies for the company's clients. To succeed in this challenging position, Leavey prizes her research, technical writing and time management capabilities–skills she honed as a Rowan engineering student.

A 2004 graduate of the College of Engineering's civil engineering program, Leavey specialized in environmental engineering. Leavey said she chose Rowan based on the University's small class sizes and affordable tuition, as well as the quality of the engineering program. Upon graduation, Leavey continued on in the College's engineering graduate program. While pursuing her master's degree, she got her start at Pennoni as a full-time graduate engineer.

"It was great that the things I learned in graduate school applied while I was working," she said. "Working full time and attending graduate school full time made me manage my time extremely efficiently."

Upon completing graduate school in May 2005, Leavey continued her career at Pennoni.

In January 2013, she became a New Jersey Licensed Site Remediation Professional (LSRP), and as such, she certifies that all state regulations are met in remediation sites where she functions as the LSRP of Record.

Leavey and her husband, Vince, a 2004 Rowan Health and Exercise Science alum, live in Pine Hill, N.J., with their 4-year-old son, Jack, and infant daughter, Allie.