

Message from the Interim Dean

Greetings from Robinson Hall!

After a busy first semester serving as the Interim Dean of the College of Science & Mathematics (CSM), it is wonderful to be able



to share the impressive activities and accomplishments from CSM. In all that we do, we keep in mind the four pillars that lay the foundation of Rowan's mission: Access, Affordability, Quality, and Economic Engine.

The enrollment at Rowan University has nearly doubled since 1989, when I first joined what was then called Glassboro State College. This rate of growth provides significant challenges, but together, with ingenuity in the short-term and new facilities in the long-term, we are addressing these challenges and moving forward to serve the higher education needs of New Jersey.

CSM continues to provide high quality programs that serve the economic engine of the state with affordability, accessibility, and quality in mind. This Fall we submitted over 100 curriculum proposals, including 63 new courses, eight new degree programs, and six new accelerated BS/MS dual-degree programs to

continued on page 2

CSM Department Listing

- Biological Sciences
- Chemistry & Biochemistry
- Computer Science
- Mathematics
- Nursing
- Physics & Astronomy
- Psychology

Two CSM Juniors Chosen as Governor's STEM Scholars

Rowan University juniors, and Bantivoglio Honors Concentration students in the College of Science & Mathematics (CSM), Olivia Fiebig and Rebecca Crowther are trailblazers in a new statewide program. They are two of only 10 college students chosen from a statewide field to participate in the first class of Governor's STEM Scholars.

The Governor's STEM Scholars Program brings together a diverse group of 50 student leaders, from high school to the post-secondary level, interested in pursuing careers in the fields of science, technology, engineering, or mathematics in New Jersey.

The program works with the Research and Development Council of New Jersey, Governor's Office, New Jersey Department of Education, and Secretary of Higher Education to pair professionals with New Jersey's most talented students. It serves as an initiative for the brightest STEM students to collaborate with leading research companies in the state, according to the organization.

As part of the year-long program, each of the 10 college scholars submit an experiment to the organization, then lead a group of participating high school students to conduct the experiment and present their results.

Fiebig's group is conducting an experiment that will test the amount of blue dye present in sports drinks. They have built a colorimeter, which uses LED light and photoresistors to measure the resistance of the substance and the amount of dye. Once complete, they will compare their hand-made equipment to the results of the same mixtures in a spectrometer, which measures the level of dye by absorption, rather than resistance. Once complete, they will create a presentation to share with a middle school science class.

"I wanted to do something educational that we could eventually teach in middle schools because I'm passionate about education," said Fiebig. "I feel that kids aren't exposed to chemistry and physics early enough. It took me until Advanced Placement Chemistry to fall in love with it — it shouldn't take that long to like it."

Crowther's group is studying the effectiveness of antacids. Each participant recreates stomach acid and then dissolves a different antacid in each solution.

continued on page 5



L to R: Olivia Fiebig, Jenna Weingarten, Sara Camelli, John Larkin

PROFtoberfest 2014

Homecoming 2014, "PROFtoberfest," is in the books and the College of Science & Mathematics' tent on College Row was a success! Every department presented fun and educational activities for alumni and their families.



Pictured, clockwise from top left: Brooke Logan demonstrates a hexaflexagon; President Ali Houshmand looks on as Lydia Hanna and Pavalli Chary cook up liquid nitrogen ice cream; Physics professor Philip La Porta "tricks" Interim Dean Karen Magee-Sauer and President Houshmand; WhoRU and Biology Club President, Paul D'Ortona.

Message from the Interim Dean

continued from page 1

ensure our curriculum adapts to the changing needs of our region.

In Fall 2014, we welcomed nine new tenure-track faculty to CSM. The level of talent and accomplishments of our new faculty will enhance our pursuit of building strong research programs and opportunities for our students. We have 11 active searches for new tenure-track faculty to join CSM in Fall 2015. Recruiting and attracting new talent is a top priority as we begin the Spring 2015 semester.

Rowan University is an exciting place to be right now. While our growth provides challenges, it also provides opportunities. The goal for CSM is to embrace change and face challenges with creativity. By doing this, we ensure we remain student-centered with a teaching, research, and learning environment that is dedicated to excellence.

Karen Magee-Sauer, Ph.D.
Interim Dean
College of Science & Mathematics

Software Students Create Interactive Mapping Tool for Mark Systems

Dr. Adrian Rusu and Computer Science students have worked closely with Mark Systems, a leading provider of enterprise-wide home builder software, to create a web-based interactive development mapping tool that allows builders to display realtime lot information and availability directly from their Integrated Homebuilding Management System (IHMS) database on a site map.

The students' project successfully simplified and provided a level of automation by directly communicating with the IHMS database. The tool allows an administrator to upload an image of a development site plan and associates that map with an existing development within the database. A utility allows each lot to be identified with a house record in IHMS.



Rowan University software students with Mark Systems Executives. Pictured L to R: (back row) Jerry Highberger, Director of Operations, Mark Systems; Dr. Adrian Rusu; Shaan Menon Student Team Leader; Joshua Dickinson; Jovaughn Chin; Scott Duman, Vice President, Mark Systems; Chris Joslin, Senior Software Engineer, Mark Systems; (front row) Richard Cerone, Daniel Read, Nicholas Mariani.

Once the initial setup is complete, a link is available on the home builder's website. Visitors are able to review any lot and receive realtime information on the availability, price, address, etc. This map also could be displayed in a sales office kiosk for prospects to interactively explore the location and status of the lots within the selected development. Such innovation is vital in this era of web marketing.

"Our team cannot wait to integrate the mapping project into the IHMS Internet ToolKit," says Vice President of Mark Systems, Scott Dunman. "This year, in addition to working with students on this project, we hired two Rowan University student interns and look forward to continuing these programs. We are very excited to be working with Rowan University and continuing to build our relationship even further."

Biology Students and Professors Present at Conference at Princeton University

The 51st annual meeting of the Animal Behavior Society was held on Princeton University's campus this summer and research conducted by members of the Department of Biological Sciences was well-represented with three faculty members and 13 students in attendance to present four different research posters.

Among the faculty presenting their work, Dr. Gerald Hough and his students presented their poster, "Old Birds Lose It: The Impact of Aging and Deterioration of Working Memory on Homing Pigeon Spatial Cognition." Dr. Svjetlana Vojvodic presented a poster entitled, "Effects of Parasites and Relatedness on Social Interactions in Acorn Ant Colonies." The work was completed in collaboration



Rowan University Biology students with the Princeton Tiger. Pictured L to R: (back row) Aneda Balakhan, Nicole Tawes, Carly Biondi, Jason Burke, Samantha Stein; (front row) Frank Shipley, Julie McMahon, Paul D'Ortona, (kneeling) Kevin Sather and Kevin Dennis.

with scientists from the University of Pennsylvania and the University of Arizona.

Dr. Matthew Bealor and his students presented two posters, "Tough Guys and Pretty Boys: Do Female Fighting Fish Show Preferences for Plakat or Veiltail Males?" and "Behavioral and Chemosensory Responses of Introduced Italian Wall Lizards to Snake Chemical Cues."

In addition to conducting behavioral studies on the Italian Wall Lizard, Dr. Bealor and his students have been conducting fieldwork in cooperation with biologists from the New Jersey Division of Fish & Wildlife to study how this exotic species may influence native New Jersey wildlife.

Dr. Ronald Harty Shares New Approach to Controlling Ebola



Dr. Ronald Harty, Associate Professor of Microbiology and Head of the Laboratory of Microbiology and Immunology in the School of Veterinary Medicine at University of Pennsylvania, recently visited Rowan University as part of the Dean's Distinguished Lecture Series. His presentation, "Controlling Ebola Virus Outbreaks: A New Strategy to Block Virus Transmission and Spread," drew a standing-room only crowd of more than 230 faculty and students.

Harty stressed that controlling Ebola, along with numerous other viruses, depends upon governments raising concern levels, allocating proper medical resources, and implementing new accommodations in established systems of society. He discussed different methods being developed to combat the virus and noted the uniqueness of his lab's research.

"A lot of different strategies are being implemented to come up with drugs and vaccines," he said. "Ours is unique and provides a host-oriented type of approach that will not allow the virus to develop a resistance. The broad nature of these drugs can hopefully also allow us to cure other viruses."

In response to the Western world's reaction to cases of the virus, Harty expressed that heightened concern is unwarranted. "The media has overblown it a bit. It isn't an easily transmitted virus, it involves bodily fluids...it's not airborne," he said. "I think one of the unfortunate occurrences was the misinformation that we got early on. It's new territory for us as a country — we've never had Ebola, so now we have to implement new policies and procedures."

Rowan Mathematics and Science Partnership

Education spans further than the classroom, and longer than four years in college. This phrase resonates with Dr. Karen Heinz, as she concludes her fall session of mathematics courses and prepares for her spring session of teaching - to both students and seasoned educators.

The \$367,700, Rowan Mathematics and Science Partnership project is a program among regional schools, ranging from K-8, with the aim of providing professional development to teachers and increasing student achievement in mathematics. Every three years, the New Jersey Department of Education distributes the federally-sponsored funds to state institutions that can best provide professional development to K-12 teachers of mathematics and science. The Rowan Mathematics and Science Partnership is an ongoing project, of which Heinz has been the principal investigator for two years, and an additional year of funding is anticipated.

This year the project has expanded to four, three-credit graduate courses. Heinz believes the new format will provide K-8 teachers with a broader understanding of the material.

"Teachers are thrilled at the opportunity," Heinz said. "The grant makes all the accommodations – paying for the courses, materials, and supplies."

Teachers are administered a test before and after their courses with Heinz, and their students' scores on state tests also are used as determinants on the efficacy of the program. Heinz's focus this year is K-8 and hopes that she will be able to continue the program in the future.

"Teaching my students at Rowan is important, and so is educating the generation that will come after them," Heinz said. "I believe that by teaching these teachers, we can open many opportunities to their students in the future."



Two CSM Juniors Chosen to Participate in New Statewide Initiative

continued from page 1

They continually measure the pH level in each solution as they incrementally add antacid to each solution, ultimately reaching a full dose as prescribed.

Once the pH levels for each solution have been recorded, they will create a presentation reporting their results of the most effective antacid in the study.

Kelly Szaniawski, a high school senior at Marine Academy of Technology and Environmental Science in Manahawkin, has always loved attending STEM programs.

“I loved going to STEM summer camps as a kid and always took advantage of any STEM programs I could find,” she said. “This one is really interesting, because we get to see what

New Jersey has to offer in the STEM fields and meet people who work in them.”

Crowther says of the STEM program, “I had always been planning to go Pre-med, but I fell in love with research while studying at Rowan. The STEM Scholars Program is a great way to learn how to incorporate research and STEM concentrations to further New Jersey as a whole.”

Though it is not a requirement of the program, both Crowther and Fiebig believe it is important to give high school students an opportunity to conduct their work on a college campus as part of the experience. All seven students were impressed with Rowan’s offerings, and most especially, the laboratories and amenities.

One student, Kristian Catarcio from Cape May County Technical High School, says of his inaugural Science Hall experience, “I was already considering applying to Rowan and now that I’ve been on campus and worked in one of the labs, I’m really excited to apply here!”

Once all participants’ projects are complete, they will be reviewed, and the winning group will attend the Thomas Edison Patent Awards. Each year, the Research and Development Council of New Jersey recognizes

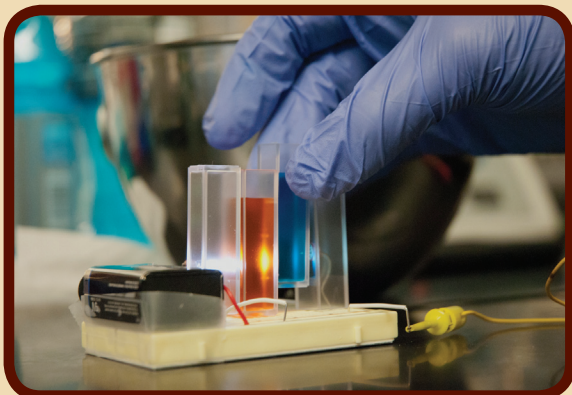


L to R: Kelly Szaniawski and Rebecca Crowther

inventors, universities, and companies whose contributions cultivate and advance research and development in New Jersey.

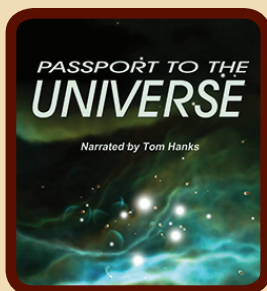
“We like the competition, but teaching is what’s most important. The whole point of this program is to pass education along [to younger generations],” says Biotechnology High School senior, John Larkin.

CSM Interim Dean, Dr. Karen Magee-Sauer says, “We are proud that Rebecca and Olivia are instilling the importance of research and teaching to the high school students partnering with them. This work ethic and insight will work to their advantage as they move forward in STEM-related fields.”



Colorimeter created by Olivia Fiebig's STEM Scholar Team

The Fredric and Jean Edelman Planetarium



Sundays at 3 p.m.
January 18 -
March 15



Family Show
Sunday, February 1
2 p.m.

Spring semester at CSM

April 13
Dean’s Senior Recognition Ceremony

April 23
41st Annual Psychology Research Conference

April 24
Science, Technology, Engineering, & Mathematics
(STEM) Student Research Symposium

May 12
CSM Commencement

Faculty Accomplishments



Dr. Bethany Raiff, Assistant Professor of Psychology, is the 2015 recipient of the B. F. Skinner New Researcher Award for Applied Research from Division 25 of the American Psychological Association. This award recognizes her innovative and significant research

in Behavior Analysis conducted within the first seven years of receiving a doctorate.

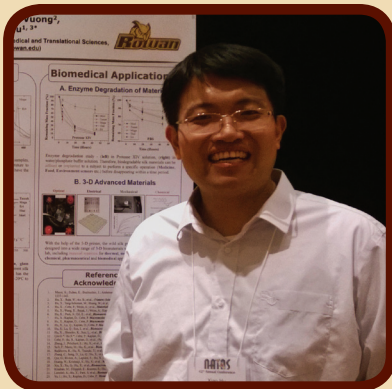
Dr. Raiff also was recently recognized by The Journal of Applied Behavioral Analysis. "Internet-based Contingency Management to Promote Smoking Cessation: A Randomized Controlled Study," an article Raiff co-authored with University of Florida professor Jesse Dallery and product development company Red Group, was named best article of 2013.



Dr. Luke Holbrook, Professor of Biological Sciences, collaborated with Dr. Ken Rose, a Professor of Functional Anatomy and Evolution at the Johns Hopkins University School of Medicine. He and other researchers tracked the evolution of a group of animals via fossils that indicate the ancestor of today's horses, rhinos, and tapirs originated in India while it was still an

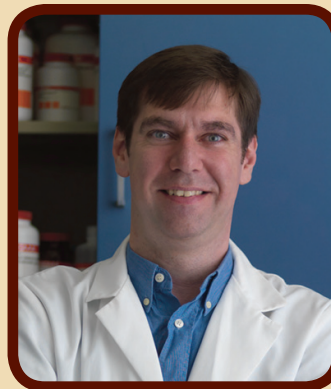
island. Their work was presented recently in the online journal Nature Communications.

This study was funded by the National Geographic Society (grants 6868-00, 7938-05, 8356-07, 8710-09, 8958-11 and 9240-12), the Belgian Science Policy Office (project BR/121/A3/PALEURAFRICA), the National Science Foundation (grant number DEB-0211976, awarded to Holbrook in 2002), and the Wadia Institute of Himalayan Geology.



Dr. Xiao Hu, Assistant Professor of Physics & Astronomy, and his team recently received "The Best Poster" award during the General Poster Session of the 42nd Annual Conference of the North American

Thermal Analysis Society in Santa Fe, New Mexico. The poster, "Comparative Studies of Regenerated Wild Silk Biomaterials," is a collaborative effort with Dr. Fang Wang, (senior visiting scientist), Nathan Wolf ('16), Eva-Marie Rocks ('16), and Trinh Vuong ('15). The Best Poster award is presented to the researcher who delivers the best overall presentation in the general poster session of the annual conference. The winner is determined by ballot of all symposia chairpersons during the event.



Dr. Claude Krumenacher, Assistant Professor with appointments in the Department of Biological Science as well as the Department of Biomedical and Translational Sciences in the School of Biomedical Science & Health Professions, recently published an article in the Journal of Virology. The paper, "Entry mechanisms of Herpes

Simplex Virus Type 1 into Murine Epidermis: Involvement of Nectin-1 and HVEM as Cellular Receptors," is a collaborative work conducted with colleagues from Germany and the United Kingdom.

Herpes simplex virus (HSV) can cause a range of diseases in humans from uncomplicated mucocutaneous lesions to life-threatening infections. Advances in understanding the involvement of receptors in tissue are essential preconditions for unravelling HSV invasion of the skin, which, in turn, could allow for the development of antiviral reagents.

Faculty News and Publications - Fall 2014

- Richard Haas (Psychology) published an article in the Association for Psychological Science's Observer.
- Meredith Joppa (Psychology) co-authored an article in Children and Youth Services Review.
- MaryLou Kerwin (Psychology) co-authored an article for the Journal of Social Work Practice in Addictions.
- Carl Lunk (Physics), Samuel Lofland (Physics), and Jeffrey Hettinger (Physics) co-authored an article in Vacuum.
- Amos Mugweru (Chemistry), Kandalam Ramanujachary (Chemistry), and Timothy Vaden (Chemistry & Biochemistry) co-authored an article in Applied Catalysis A: General.
- Nathaniel Nucci (Physics & Astronomy) co-authored an article in the National Academy of Sciences.
- Thomas Osler (Mathematics) co-authored three papers published in the November 2014 issue of Mathematical Gazette.
- Adrian Rusu (Computer Science), Matthew Bealor (Biology), and Hector Lopez (CMSRU) co-authored an article for the 44th Annual ASEE/IEEE Frontiers in Education Conference.
- Dawn Specht (Nursing) was the Keynote Speaker at a research conference at Cooper University Hospital titled Overcoming the Barriers to Nursing Research.
- Dayalan Srinivasan (Bioinformatics) published an article in PLOS ONE.
- Fang Wang (Physics & Astronomy), Catherine Yang (Chemistry & Biochemistry), Xiao Hu (Physics & Astronomy) wrote a book chapter in Lightweight Materials from Biopolymers and Biofibers, ACS Symposium Series.
- Catherine Yang (Biochemistry) and Gregory Caputo (Biochemistry) co-authored Experiments in Biochemistry and Biotechnology.

This is a sample of faculty accomplishments. Updates on faculty can be found on the CSM website.

Sabbatical Takes Dr. Ling to Harvard University and University of California, Santa Barbara

Dr. Hong Ling (Physics & Astronomy), currently on sabbatical, spent Fall 2014 in Cambridge, MA at the invitation of the Institute for Theoretical Atomic, Molecular, and Optical Physics Harvard-Smithsonian Center for Astrophysics.

In Spring 2015 he will continue his sabbatical at The Kavli Institute for Theoretical Physics at the University of California, Santa Barbara.



Dr. Hong Ling on the Harvard University campus

Mole Day

The Rowan University Chapter of the American Chemical Society hosted its second annual Mole Day, in honor of the accomplishments of Amedeo Avogadro, the scientist who discovered the chemical principle of 6.02×10^{23} atoms to a molecule. This year's festivities featured a new attraction, pie-a-professor, to support the Rowan American Chemical Society's partnership with the Glassboro Boys and Girls Club.

Of the eight nominated professors, Dr. Lark Perez, Dr. Mark Hickman, and Dr. Gregory Caputo were ultimately pied; Perez stepped in for Dr. Gustavo Moura-Letts who was one of the top three professors who received the most donations but was unable to attend.



Dr. Gregory Caputo, Chemistry & Biochemistry Department Chair

CSM student scholarships and program initiatives are made possible by the generosity of individuals and corporations. Please consider a gift and join us in delivering the highest quality education to our students.

www.rowan.edu/csm/giving

Student Spotlight

by **Lindsay Carfagno, Psychology '15**

Last winter, I was interested in a new opportunity to enhance my Rowan learning experience in the Psychology field. I began searching through Prof Jobs and came across Voices in the Family, a radio show at WHYY. Imagine my delight when I was notified that I had been awarded the only coveted position at the station.

During the six-month internship, I brainstormed program ideas and collaborated with my WHYY co-workers to develop programs. I also had the incredible opportunity to produce my own show. I was responsible for scheduling and pre-interviewing guests, generating questions, and conducting extensive research. Although a little stage fright crept in, the show turned out better than I could have imagined!

Along the way, I have gained hands-on knowledge that is useful to my Rowan career and beyond. I have networked with distinguished psychologists and made many friendships, specifically with the host, Dr. Dan Gottlieb. His close friendship and outlook has changed my philosophy on life and opened many new doors. Recently, he presented a talk at Rowan for disability awareness week, and I was honored to introduce him. This experience has taught me how to be a working professional, solve problems creatively and collaboratively, and has increased my love for Psychology.



Lindsay Carfagno and Dr. Dan Gottlieb

The Scope

Fall 2014

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