

### Message from the Dean

“As July approaches, CSM celebrates the end of a successful and transformative inaugural year. And what a year it has been! Here’s just a sampling of recent initiatives and accomplishments:



- Development and implementation of an internationalization program with the goal of attracting international students to undergraduate and graduate programs as well as developing research partnerships with scholars from international institutions.
- Collaborations with both internal and external partners on research projects dealing with environmental sustainability, biomedical applications, drug delivery, patient information analysis and others.
- Continued emphasis on undergraduate student research as demonstrated in a record number of presentations at our annual STEM Symposium.

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### CSM Department Listing

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

### Innovative Software Enhances Learning, Teaching Experience

Intricate swirls of color — a patient’s blood, a sample of tissue — magnified under microscopes help students at Cooper Medical School of Rowan University (CMSRU) learn some important fundamentals in the histopathology and diagnosis of diseases.

That’s probably not a big revelation for anyone involved in medical education, but there is a difference at CMSRU: the students soon will have a chance to use a computer-based virtual microscope instead of one crafted of metal.

The virtual microscope springs from a partnership between a CMSRU physician-professor and a professor and students in the Computer Science Department at Rowan University, one of CMSRU’s founding partners.

Dr. Adrian Rusu, a professor of computer science from Rowan’s main campus, worked on the project with Dr. Hector Lopez, a CMSRU associate professor in the Department of Biomedical Sciences.

“I was interested in pursuing scholarly activities and thinking of working on computer-based modules for the medical students,” Lopez said. “Those will be interactive learning tools for students to learn in their own time.”

Rusu had reached out to the medical school last fall to see if professors there had any projects they wanted to pursue. Lopez replied with his project and became a real-world customer for Rusu’s students.

Five of Rusu’s students developed the virtual microscope last fall in his Software Engineering course, in which students take a project from beginning until a final, usable version. They spent extensive time interviewing and working with Lopez.

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*Students recognized with appreciation awards signed by Dr. Lopez (L to R) James Clark, Donald Auñero, Anastazia Ghassemi-Lamola, David Galos, and Brian Jerome. Also pictured is Dr. Adrian Rusu and Dr. Charlene Williams, Professor of Biomedical Sciences at CMSRU*

# Simulator a Match.com for Fish

The Biology and Computer Science departments at CSM joined together to develop a Betta Fish Simulator to study the female Betta's reaction to male displays and bubble nest size.

Under the supervision of animal behaviorist and Biological Sciences Assistant Professor,

Dr. Matthew Bealor, Biology major Megan Mondelli conducted her research on mating preferences in Bettas.



*Red betta fish meets blue digi-fish*

Previous studies have shown that females prefer brightly colored males over dark-colored males. In this species, males build bubble nests and then display to females to entice them to approach the bubble nest and mate. Mondelli's research tested the hypothesis that, in addition to male color, the size and quality of the bubble nest could

be an important factor in terms of females choosing which male to mate with.

Because live males proved difficult to test the theory, the Betta

simulator was developed by Computer Science undergraduates under the guidance of their professor, Dr. Adrian Rusu. The students met with Dr. Bealor and developed the on-line simulator that allows the researchers to easily input the desired color of males, as well as to change nest size and shape. Females, enclosed in tanks, were placed in between two laptop screens displaying the two male "digi-fish" differing color and nest size as the females watched "TV."

The team of students then recorded which male the female Betta chose based on the amount of time she spent probing each animated male's nest.

Last summer, Mondelli presented the study at the National Meeting of the Animal Behavioral Society held at University of New Mexico with plans to present at University of Colorado in Boulder this summer.

## Inaugural Signature Event Celebrates Alumni, Friends and CSM

To celebrate the end of a significant and successful first year, the College held its premiere signature event at Auletto Caterers in Deptford. The wine tasting social welcomed alumni, friends and industry partners to enjoy conversations with fellow guests, meet representatives from the College, and sample an array of wines from around the world.

The special event provided an intimate setting for guests to learn about the College's transformative first year and the direction it's headed in the future. During the welcome remarks, the dean acknowledged special guests, including Dr. Richard Meagher, who initiated the pre-med program in the college.

Alumni guests Stephen Sharp (Biological Sciences, '72) and his wife, Nancy ('80) remarked, "We enjoyed a long conversation

with Dr. Ansari about the courses in the science and math departments and how they'll potentially relate to the global community."

Another attendee, Brian Stein (Mathematics, '78) commented, "As a math major, I was glad to meet the current head of mathematics department, Dr. Dexter Whittinghill and the Dean. It was fun for me to relate where my mathematics education had taken me and to hear how far things had progressed since my time as a student at what was then Glassboro State College. It was also very gratifying to hear that some of my former professors were still teaching."



*Biological Sciences alum Stephen Sharp ('72) and his wife Nancy ('80) enjoy conversation with Dean Ansari at the College's premiere Signature Event*

As part of the Partners In Industry initiative, the dean invited Stein, a systems engineer at Lockheed Martin Corporation, to visit the campus to speak to students about his real world experiences in industry and how his mathematics education has served him there.

"This was an excellent opportunity to meet the college alumni and friends, talk about the University, and introduce many

exciting new initiatives and changes within the college," said Dean Ansari.

The College is enthusiastic to host this event annually after noting its success in its inaugural year.

## Pre-Med Students gets hands-on at CMSRU

The College of Science and Mathematics continues to push the levels of education higher by creating new opportunities to enhance the students' interest in the pre-medical fields.

In February, Rowan's pre-med students attended a well-guided tour of Cooper Medical School of Rowan University, organized by the Pre-Health Society and CSM's Office of Health Professions. The tour showcased the new advancements and technology that makes CMRSU unique.

As part of the tour, students attended an information session and interacted with admissions, administration and current students, including CSM biology alumni and first year medical students, Michael Coletta and Sherry English.

They held a special session with the students explaining their experiences and answered any arising questions, knowing what it was like to be in their position a few years back.

"The tour helps expose students to their interests and provides a more personal, hands-on experience," said Tomas Varela, health professions advisor. "It allows students to walk about the campus and helps to put an end-goal in their mindset, a more tangible result."

Varela and the student-run Pre-

Health Society plans many other valuable workshops and events throughout the year. "With the success from this tour, we plan to continue offering this opportunity to students in the future," Varela said.



Office of Health Professions and Pre-health Society send pre-med students to attend a seminar and tour of CMSRU

## Summer Spent in Labs Provide Great Opportunities

The department of physics and astronomy proudly announces seven of its students who have received amazing opportunities for summer internships at various collegiate programs. The different summer programs offer hands on experience in their chosen field of science and provide the students with new researching skills and techniques.

Physics majors include:

**Chris Rotella**, *National Science Foundation Research Experience for Undergraduates (REU) at Penn State.*

**Bill Rieger**, *Los Alamos National Lab*

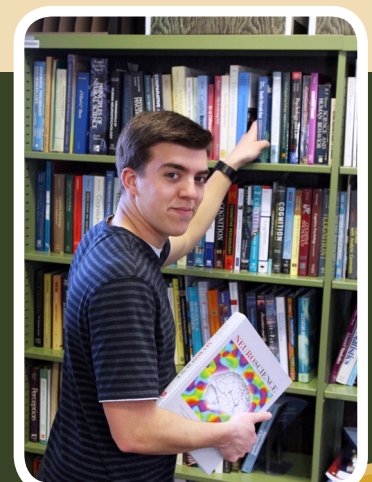
**Sean Hoyt**, *NASA Goddard Astrobiology Institute*

**Chris Kassner and Troy Smith**, *National Institute of Standards and Technology (NIST) in Gaithersburg, Maryland*

**Eric Kaiser**, *Science Undergraduate Laboratory Internship (SULI) program at the Princeton Plasma Physics Laboratory*

**Jaime Richards**, *Polymer Research Experience at University of Akron*

These summer programs accept only a selected number of students from hundreds that apply. For example, Kassner and Smith will be among 190 students out of 600 applicants to attend the 11-week NIST summer program. All of the students' hard work and dedication to their major allows them this amazing opportunity to gain knowledge and practice from experienced professionals and fellow students.



Psychology major, Jeff Luery interning at UPenn this summer

## Neuroscience Research leads to Summer Internship Across the Bridge

Junior Psychology major, Jeff Luery, accepted an internship with the University of Pennsylvania's Summer Undergraduate Internship Program, where he will spend 10 weeks of his summer participating in an ongoing research project in the field of neuroscience, while under the supervision of a faculty mentor.

At the conclusion of the program, he will join his fellow interns in presenting at the Leadership Alliance National Symposium in Old Greenwich, Connecticut.

Each year, the program reviews a large selection of applicants from across the country. Jeff was one of only 30 college students chosen to participate.

# CSM Faculty Honored for Excellence at Rowan's Award Ceremony

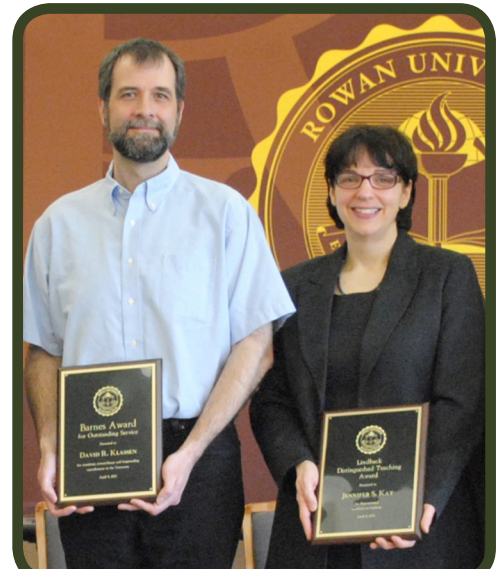
The College of Science and Mathematics is pleased to have a multitude of outstanding faculty members honored this year:

**Jennifer Kay**, Professor of Computer Science, received the Lindback Distinguished Teaching Award - the highest teaching honors at the University. The award was presented at the 2013 Celebrating Excellence Awards Ceremony in April recognizing a faculty member who has demonstrated outstanding teaching and leadership.

Kay teaches courses across Rowan's Computer Science curriculum, from general education and honors classes for non-majors, to classes at all levels of the B.S. and M.S. in computer science. She has incorporated several novel approaches to teaching introductory programming to non-majors. In one general education class she introduces students to programming using a multi-media context, teaching them to write their own tools that perform Photoshop-like techniques on images as well as similar techniques to manipulate sound files. In another, she teaches the same introductory programming concepts in a completely different context – robot programming.

Also recognized at the same ceremony was Astronomy Professor **David Klassen** from the Department of Physics and Astronomy. Klassen received the Barnes Award for providing consistent, extraordinary, and longstanding contributions to the University. The award honors the memory of Joseph Barnes, who served the University for 23 years as a professional staff member and tenured librarian.

"It is an honor to be recognized with this award, especially as I recall the names of all the previous recipients. It's a distinguished group and I'm proud to be counted among them," said Klassen. "Service is usually defined as things done for the benefit of others, and helping out where and when I can is something I enjoy. That others appreciated that work is really its own reward, so to be recognized in this way is really just icing on the cake," he continued.



*Professor David Klassen (Physics and Astronomy) and Professor Jennifer Kay (Computer Science)*

## Rowan Physics Professor named KITP Scholar

**Hong Ling**, professor in the Department of Physics & Astronomy at Rowan University, has been named a 2013 – 2015 KITP Scholar by the Kavli Institute for Theoretical Physics (KITP) at the University of California, Santa Barbara. KITP is one of the most prestigious international institutes for theoretical physics research.

Ling is among a select group of only eight professors that are chosen each year from non-major research institutions nationwide.

The award will support Ling's travels to California as a visiting researcher during his three-year appointment.

"The scholar program will provide me with the opportunity to interact and collaborate with physicists outside Rowan, attending seminars and meetings that will keep me abreast of the latest developments in the fields of my interest," said Dr. Ling. "It will also motivate me to continue pursuing my research, which helps me increase my ability to simplify classroom materials, benefiting all students attending my classes," he added.

Launched in 1979, KITP is the first scientific research facility where theorists in physics



*KITP Scholar and physics professor, Dr. Hong Ling*

gather together to work on problems arising from investigations at the leading edge of science. Over the past thirty years it has become one of the most distinguished international centers for theoretical physics research.

# CSM Welcomes the Following Full-Time Faculty Starting at the College in Fall 2013

## Matthew T. Bealor

**Instructor, Biological Sciences**

Ph.D. in Ecology & Evolutionary Biology  
University of Colorado

## Mara E. Robu

**Instructor, Biological Sciences**

Ph.D. in Biochemistry  
University of Wisconsin-Madison

## Gustavo Moura-Letts

**Assistant Professor, Chemistry & Biochemistry**

Ph.D. in Chemistry  
University of Pittsburgh

## Behrooz Nazer

**Instructor, Chemistry & Biochemistry**

Ph.D. in Organic Chemistry  
Drexel University

## Chun Wu

**Assistant Professor, Chemistry & Biochemistry**

Ph.D. in Computational Biophysical Chemistry  
University of Delaware

## Nasrine Bendjilali

**Assistant Professor, Mathematics**

Ph.D. in Applied Mathematics  
Lehigh University

## Bethany B. Gummo

**Instructor, Mathematics**

M.S. in Applied Statistics  
Villanova University

## Ik Jae Lee

**Instructor, Mathematics**

Ph.D. in Mathematics  
Kansas State University

## Anthony Angelow

**Instructor, Nursing**

Ph.D. in Nursing Education  
University of Northern Colorado

## Kelly M. Trevino

**Assistant Professor, Psychology**

Ph.D. in Clinical Psychology  
Bowling Green State University

## Eve M. Sledjeski

**Instructor, Psychology**

Ph.D. in Experimental Health Psychology  
Kent State University

## Michael Tolocka

**Associate Professor, Chemistry & Biochemistry**

Ph.D. in Physical Chemistry  
George Washington University

## Dawn Specht

**Assistant Professor, Nursing**

Ph.D. in Nursing  
Widener University

## Summer Grant Goes Up and Out

In the tradition of celebrating scholarly activities within CSM, the College was proud to host the fourth annual Summer Grant Awards to honor faculty for their outstanding interdisciplinary collaborative research projects.

The Summer Grant program began in 2010 as a vehicle to increase students' interest in research and involvement on campus and over the last three years has generated 19 funding proposals requesting over \$3 million in external funding. This year, the recipients will receive more than \$35,000 in funding from CSM to enhance their interdisciplinary collaborative projects that begin this summer.

To keep the program competitive and motivating, the "seed" money was boosted up to \$8,000 each and co-investigators were added to take part in the research to enhance

collaborative relationships outside departments, the College as well as the industry. The Co-Pi's included researchers from University of Washington, Princeton and the Center for Family Services.

"The move to require collaborative projects with multiple PIs reflects the trends in both federal funding agencies and industry," said Dr. Greg Caputo, Assistant Dean for Research and Grants for CSM.

"As the lines between traditional disciplines blur, the need for multiple types of expertise on research endeavors is even more critical. This type of interdisciplinarity can be seen in growing fields like bioinformatics, translational biosciences, and biomedical engineering and the collaborative aspect of the CSM summer grant mechanism follows this trend," continued Caputo.



*Congratulations to the following recipients: MaryLou Kerwin (Professor/Psychology), D.J. Angelone (Associate Professor/Psychology), Mark Hickman (Assistant Professor/Chemistry & Biochemistry and Biological Sciences), Lark Perez (Assistant Professor/Chemistry & Biochemistry), and Yang Yang (Assistant Professor/Chemistry & Biochemistry) not pictured.*

# Innovative Software Enhances Learning, Teaching Experience

*continued from page 1*

What they developed, Lopez and Rusu said, is a tool that features software that enables first- and second-year medical students to navigate through a series of digital slides of tissue from the human body, whether stomach, liver or blood.

Students can visit the virtual microscope website to study tissues their professors have uploaded — and labeled as desired — studying the material during lab exercises or on their own time.

Faculty can add questions to the slides with arrows pointing, for instance, to a spot on a liver cell that students need to evaluate. And, Rusu's team developed tools where students can self-assess their findings and email their analysis to their professors for review. Professors can constantly upload new slides or remove existing ones.

"This provides more flexibility for the study of histology," Lopez said.

Lopez said similar, but not exact, products exist, but they are very expensive. The Rowan virtual microscope offers added features over most, he added. This semester the Rowan-CMSRU team is tweaking the system, adding some features and modifying assessment tools before using it with medical school students. Eventually, they may try to market the virtual microscope.

"It's very good. It's incredible," said Lopez. "It's something with a few touches will be a very powerful tool to identify and learn histological sections, both normal and abnormal."

Rusu said the virtual microscope also represents an important collaboration between Rowan and CMSRU personnel that benefits both computer science and medical students.

"It is much more useful for computer science students to work on a real-world project rather than a class project," said Rusu, who has previously initiated innovative collaborations with industry, government, academia and high schools. "I am not aware of any other example where we have professors from different disciplines helping each other like this. Plus, this project helps students in both places. I think that's quite unusual," Rusu said.

## Psychology Conference

The 39th annual Psychology Research Conference was held on April 18 followed by an awards ceremony and Psi Chi inductions. The conference allows students from our undergraduate and graduate programs to showcase the results of the research they have been conducting over the course of the academic year.

Students presented their research findings in a professional context and the topics closely followed the research interests of faculty members thus highlighting the breadth and depth of the Psychology Department faculty.

## First Class Seats for Graduates

Commencement is defined as "a beginning or start." And it couldn't be more fitting for the Class of 2013, as they carried the distinction of being the first graduating class of the College of Science and Mathematics. Also, making its debut was the college gonfalon revealing the College's new symbol and motto "Sapere Aude" which translates "Dare to be Wise."



Dean Ansari addressed the massive sea of ebony caps as he described their time on campus as a circle of transformation where Rowan helped to transform their lives and our students helped Rowan and CSM take their shape and form.

The Dean, administration and faculty wish all of our graduates the best in their endeavors and welcomes them as newly inducted Rowan Alumni, joining over 82,000 members since 1923.



Sable Smith, psychology major, was one of over 40 academically talented students inducted into this year's Psi Chi Honor Society after the conference. Presenting the awards is Psi Chi Advisor and Assistant Professor of Psychology, Dr. Valerie Lamastra.

## Three Times a Charm for Professor and Google

Google, Inc. recently awarded Computer Science professor Dr. Jennifer Kay, a \$34,000 grant. This is Kay's third grant from Google under their international CS4HS program.

According to Google's website, the objectives of CS4HS

(Computer Science for High School) include promoting computer science and computational thinking in high school and middle school courses. Rowan joins the likes of other universities benefiting from CS4HS including Stanford, Harvard, Virginia Tech, and University of California Berkley.



Kay's ultimate goal, aligned with those of CS4HS, is to get more K-12 students interested in computer science. For the last two years, Kay has used the generous awards from

Google to support the development and implementation of 3-day on-campus workshops for middle school teachers that introduced them to LEGO robot

programming. This year, Kay is taking it up a notch, developing an on-line version of her LEGO robot programming workshop that will be available for free to interested teachers around the world.

## Faculty Learn to Flip

This spring, more than 30 faculty members from CSM as well as other colleges at Rowan University attended the workshop, "An Introduction to the Flipped Classroom and Peer Instruction 2.0," presented by Dr. Julie Schell, a senior educational researcher within the Mazur Group of the School of Engineering and Applied Sciences at Harvard University.

In the interactive and informative session, faculty were introduced to various ways to diversify teaching, including peer instruction and the flipped classroom. Peer instruction actively engages students in the learning process. The flipped classroom technique familiarizes students with concepts prior to class. Once in the classroom, the students then interact with their professors to apply and practice the concept, removing the traditional lecture as the first moment of exposure to new material.

"Students and teachers want the same thing - we want them to engage and they want to be engaged," Schell

stated. "The flipped classroom is a benefit as it can improve the teacher student relationship inside the classroom."

Schell is also an instructional designer at the Center for Teaching and Learning at the University of Texas in Austin and co-founder of Peer Instruction Network, a global social network connecting innovative educators.

The workshop was hosted by the College of Science and Mathematics as part of its ongoing faculty development series.



*Dr. Julie Schell of the School of Engineering and Applied Sciences at Harvard University interacts with Rowan faculty during workshop*

## 2013 Wall of Fame

The **Wall of Fame** awards are given each year by Rowan University at a recognition Banquet and Awards Ceremony in May, held in honor of the Professors and Professional Staff members who have been nominated by graduates from the previous year for their excellence in teaching and/or advising.

### 2013 Wall of Fame Excellence in Teaching Awards

**John Barnard**

*Psychology*

**Greg Caputo**

*Chemistry & Biochemistry*

**James Haugh**

*Psychology*

**Subash Jonnalagadda**

*Chemistry & Biochemistry*

**Keiko Stoeckig**

*Psychology*

### 2013 Wall of Fame Excellence in Advising Awards

**Greg Caputo**

*Chemistry & Biochemistry*

**Valerie Davis-LaMastro**

*Psychology*

**Tiffany Fortunato**

*Nursing*

**Michelle Soreth**

*Psychology*

**Maria Tahamont**

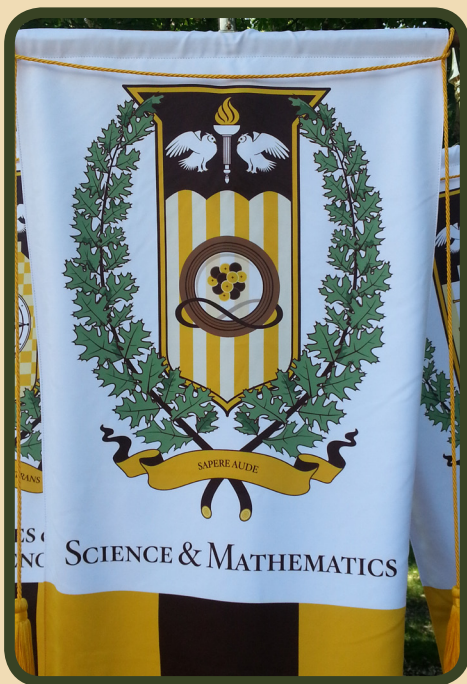
*Biological Sciences*

**Tomas Varela**

*Health Professions*

## New CSM Gonfalon

The motto of the College of Science and Mathematics is “Sapere aude!” which means “Dare to be wise!” or “Dare to know!” We take this call for learning from the Age of Enlightenment, the era in which modern science, universal education and the questioning of traditional forms of authority emerged. The motto charges our College of Science & Mathematics students and faculty to use reason and intellect for selfliberation through pursuit of knowledge and truth. Our gonfalon includes circles that evoke a tree trunk, lenses, symmetry, and other concepts in the sciences; the infinity symbol that represents a quantity without limit in mathematics; and the carbon nucleus representing the search for fundamental components and how they constitute the universe.



## Top Seniors Celebrated for Excellence

May is a month of celebration for graduating students. Kicking off the month was the annual celebration recognizing distinguished seniors at the Dean’s Senior Recognition Awards Ceremony on May 3.

Each year, seniors with distinct academic, research and professional performances

are selected by their department for this top award. At the ceremony, the admirable students were celebrated by being introduced by his or her faculty mentor, as Dean Ansari presented them the awards in front of a delighted crowd of parents, department chairs and university guests.



(L to R) Cory Wright (Mathematics), Michael Yanakas (Physics & Astronomy), Kathleen Twomey (Chemistry & Biochemistry), Katelynn Toomer (Biological Sciences), Dean Ansari, Thomas Renn (Computer Science), Lyle Zanca (Psychology), Malikah Taylor (Nursing) and Joy Hanke (Liberal Studies: Math/Science)

## Recent Outcomes of our International Efforts

- In fall 2013, 11 international students have been accepted into CSM including 2 graduate students and 9 undergraduate students.
- These students will come from 6 different countries including Bolivia, China, Eritrea, India, Nigeria, and Saudi Arabia.
- CSM established a permanent International Education Team which promotes international education and evaluates curricula of foreign partner institutions for credit transfer.
- CSM prepared a list of faculty’s research projects that was shared with partner institutions with students seeking study abroad experience at Rowan.
- Research collaborations established with international companies resulting in increased external funding and postdoctoral researchers in the Department of Chemistry and Biochemistry.



# New Degree Programs

New academic programs approved this year in anticipation of the enactment of the Restructuring Act legislation on July 1, 2013 include the following:

## MS in Nursing

The Master of Science in Nursing (MSN) program was established to provide Registered Nurses with the skills to assume leadership roles in their respective organizations. This program was designed according to the American Association of Colleges of Nursing (AACN) definition of the Clinical Nurse Leader (CNL) as someone who oversees the care coordination of a distinct group of patients and actively provides direct patient care in complex situations.

## MS in Pharmaceutical Science

Pharmaceutical sciences involve an understanding of the physical and chemical basis for the pharmacological effects of drugs inside the body. This is a highly interdisciplinary field that integrates concepts from organic chemistry, biochemistry, physiology, pharmacology, and molecular biology for the design and synthesis of drugs as well as for understanding the mechanism of drug action.

## BS in Bioinformatics & MS in Bioinformatics

Bioinformatics is a multidisciplinary field of study that uses computational and informational tools to identify salient results from high-throughput data that are relevant to questions in basic and applied research. The specific applications of a degree in bioinformatics range from evolutionary relationships in organisms to the structural dynamics of cellular components to the analysis of clinical data.

## Biochemistry Major to Represent Rowan at SURE

**B**iochemistry student, Lydia Hanna, will represent Rowan in the Summer Research Experience (SURE) program this July, sponsored by the Graduate School of Biomedical Sciences at the University of Medicine and Dentistry of New Jersey School of Osteopathic Medicine (UMDNJ-SOM). SURE offers students from across the country a paid 10-week summer research internship to acquire the basic skills needed to contribute to research at SOM.

“It’s an honor to represent Rowan at SOM, especially during the July transition period,” said Hanna, referring to the merger of Rowan and SOM on July 1. “I’m also excited to be at the forefront of Rowan’s academic expansion and am grateful for this opportunity.”

Hanna will work under the guidance of Dr. Salvatore Caradonna, professor and chair of GSBS’s molecular biology department at SOM. “I will have the opportunity to learn new concepts and techniques that I would not normally

be exposed to during my undergraduate years,” Hanna stated. “And I intend to make the most of my time at SOM and gain a deeper understanding of what scientific research entails.”

Hanna, a sophomore currently maintaining a 4.0 GPA, is president of Rowan Students for Community Outreach, a volunteer program she founded in 2012. A volunteer at the Children’s Hospital of Philadelphia, Hanna also participates in the Academic Associate Program at Cooper University Hospital where she assists in conducting four medical research studies in the emergency room.

The SURE program plans to recruit more talented undergraduate students from the Rowan community in the future. With the University now having two medical schools, Rowan students will have opportunities in the field of biomedical sciences unlike those at other universities.



*Biochemistry major Lydia Hanna with Dr. Caradonna at this year’s STEM Symposium.*

## Leading Research on Allergy Vaccines at CSM

**D**r. Cathy Yang, Chair and Professor of the Department of Chemistry and Biochemistry at Rowan University, is a highly accomplished research in the area of anti-cancer drug discovery and is widely recognized for her distinguished research. Among many and varied projects, she has been also working on the development of new allergy vaccines. Her collaborator on vaccine developments is Dr. Robert Coifman, an allergy clinician who runs two clinical sites in South Jersey and the South Jersey Allergy and Asthma Education Foundation. They have been collaborating since 2009 on development of a poison ivy vaccine and Dr. Coifman and his wife Wilma have generously sponsored the research since 2010. This collaboration has been applied to clinical trials and it is resulted in a provisional patent and a pending US patent. The successful clinical results from the poison ivy vaccine prompted the development of a peanut allergy vaccine with a similar immunological approach.



*Biochemistry seniors Ellen Watkins (left), Lauren Leonard (right) and Courtney Courter (front center) are shown at the STEM Symposium in front of their allergy vaccine research poster along with Dr. Yang, Dean Ansari, Dr. Coifman and his wife Wilma*

## Computer Science hosts Programming Contest

**T**he Computer Science department hosted the 27th annual Rowan University Programming Contest in April. Competitors from 16 high schools worked to write programs that choose the best move in the strategy/guessing game “Battleship.”

Dr. Darren Provine, contest director and professor for the department, said “We try to create a problem every year which reflects something most people have done, or seen a computer do, but never really thought about how it works. But for any technology to exist, somebody has to think about how it

works. And if you’re going to write programs, that somebody is you.”

Several past competitors at the Programming Contest are now CSM students, some of whom helped run this year’s contest. This year’s guest speaker, Dr. Keith O’Hara of Bard College, is a Rowan Computer Science graduate and was a competitor at the contest in 1997.



*(L to R) Dr. Steve Hartley, CS Department Chair, first place winners Jonathan Tang and Justin Parratt and their teacher Keith Voss, from Lawrenceville School.*

## Department's First Visiting Ph.D. Student

The Mathematics Department welcomed visiting Ph.D. student Hunduma Legesse Geleta. He joined the department for February through May from the Mathematics Department at Addis Ababa University (AAU) in Ethiopia, where he is a lecturer and also one of the first mathematics Ph.D. students. He is conducting doctoral research related to the hypergeometric zeta function under the supervision of both Dr. Seid Mohammed at AAU and Dr. Abdulkadir Hassen here at Rowan. Hunduma also worked with Dr. Hieu Nguyen and attended departmental colloquia while he

visited. He gave a colloquium presentation on March 6 entitled, "Some Results Involving Series Representation of the Second Order Hypergeometric Zeta Function." Hunduma also had the opportunity to give a poster presentation on this same topic at the "Combinatorics, Multiple Dirichlet Series and Analytic Number Theory" workshop held at Brown University in April 2013. (Laura Schultz)



Rowan welcomes Hunduma Geleta from Ethiopia's Ababa University.

## Nursing Students Host Health Fair at the Shore

With the aftermath and destruction of Hurricane Sandy still impacting New Jersey residents, Assistant Professor Patricia Price from the CSM Department of Nursing saw an opportunity for her students to not only help, but also learn. Through a grant sponsored by Office of Service Learning, Volunteerism and Community Engagement (SLVCE), Price was awarded the Rowan Relief Fund's Hurricane Sandy Service-Learning Grant to help hurricane victims.

With this funding, Price and her community health nursing students held a Community Health Fair at the Ocean City Community Center in Ocean City, New Jersey in April.

By applying their knowledge and skills related to disaster nursing care, community health and disaster planning, students assisted individuals, families and groups in dealing with community concerns and educate Jersey Shore residents

regarding the impact the storm had on their overall health. In addition, students provided information to the residents that will better assist in planning for and responding to future disaster events.

"Students developed the health fair themselves and sought the assistance from healthcare providers, emergency management officials, and private sector partnerships to provide the best experience available for both the survivors and the students," said Price. "The incorporation of a health fair will provide the students with an opportunity to assist individuals, families and groups in dealing with personal and

community resilience," Price added.

Rowan's SLVCE works collaboratively with University faculty and community partners to design a range of curricular and co-curricular service-learning opportunities. Students who engage with service learning, volunteerism and community engagement at Rowan will



CSM Nursing students at their display during the health fair in Ocean City (left to right: Kimberly Servis, Pam Kristeller and Margaret Crescenzo)

reflect on meaningful volunteer experiences as they develop a lifelong commitment to their communities.

## Pathway to Classroom Shortened for Future Educators

Rowan University created a solution to New Jersey's shortage of science teachers, while saving students time and money preparing them for an in-demand position teaching high school physics or chemistry. Beginning next fall, Rowan undergraduate physics and chemistry students are offered a chance to earn their Bachelor of Arts (B.A.) degree and a Master of Science in Teaching (M.S.T) in just 4.5 half years.

"This new path will make scheduling easier," said Dr. Karen Magee-Sauer, chair of the Department of Physics & Astronomy within the College of Science and Mathematics, "enabling students to focus completely on the B.A. in physics or chemistry for the first three years and then pursue their M.S.T upon completion of their science coursework."

Depending on a student's career plan, he or she has the option to pursue a Bachelor of Science or Bachelor of Arts in Chemistry and Physics. The B.A. is desirable for students aspiring to teach high school chemistry or physics because it provides a well-rounded undergraduate curriculum with more electives to better prepare them for the diverse classroom challenges he or she may face.

## Psychology Students Present in NYC

Faculty and student representatives from the Psychology Department attended the 84th annual Eastern Psychology Association (EPA) Conference in March held at the Marriot Marquis in New York. Senior psychology major Tiffany Marcantonio presented a project focused on the Study Abroad population. CSM psychology professors D.J. and Bonnie Angelone, James Haugh, and Thomas Dinzeo were also present.

Marcantonio, a commuter student from Voorhees, NJ, is the Phi Chi Liaison for the Psychology Alliance e-board, the Membership and Volunteer Committee Co-chair for EPAGS, and a research assistant to Dr. D.J. Angelone. While balancing her schoolwork and committed involvement in the Psychology department, Marcantonio plans to attend Rowan's Master's Program in Clinical and Mental Health Counseling to pursue her Ph.D. and eventually become a professor at a university. She credits her dedicated mentors she has worked with as

her inspiration to continue on this path.

Rowan has been attending EPA since 1987. The conference is extremely student-oriented with a friendly yet professional atmosphere. Each year, the conference takes on a theme and invites professional guest speakers specializing in that topic of psychology. This year's theme was Healthy Eating – the psychology of what you eat and how it makes you feel. Psychology faculty feel the conference plays a pivotal part in the student's research experience.

Rowan's Psychology department offers research opportunities in labs to students who want to become heavily involved in the Psychology field. These labs are composed of graduate and undergraduate students working on different projects



*Psychology students enjoying their time in NYC at the 84th annual EPA*

relating to the faculty's interest. EPA and similar conferences become an education and prideful time for students, allowing them to present research at a national level and network with individuals in the field.

## Rowan Student Research a Prominent Aspect at Saint Joseph's University Symposium

On April 19, 2013, research by Rowan University students was well represented at Saint Joseph's University's 24th Annual Sigma Xi Student Research Symposium in Philadelphia. There were nine different posters presented by Rowan students, including six presentations by members of the College of Science and Mathematics (four in Biology and two in Physics and Astronomy).

Sigma Xi is a national scientific research society started in 1886 to promote excellence in scientific research as well as communication and interaction

# Message from the Dean

*continued from page 1*

- Development of innovative degree programs such as MS in Pharmaceutical Sciences, and MS and BS in Bioinformatics.
- Establishment of the Hollybush Institute which brings together interdisciplinary faculty from throughout the University to promote research and teaching on the impact of science and technology on public policy, international conflicts and politics.
- Evolution of contacts between research faculty at CSM and School of Osteopathic Medicine in Stratford.

None of this could have been possible without the dedication of our highly talented faculty members who are both internationally known scholars and top-notch teachers. They bring their research findings to the classrooms thus exposing our students to cutting edge scholarship. They also train students to take active part in research projects thus preparing students to use advanced techniques. Our faculty's commitment to

excellence remains the hallmark of our College.

Moreover, this year we successfully recruited 7 new research and 6 new full time teaching faculty members who come to us with doctoral degrees and postdoctoral research experiences from such highly reputable institutions as (just to mention a few) University of Wisconsin-Madison, MIT, Kansas State University, the Ohio State University, City University of New York, University of Colorado, University of California San Francisco and Santa Barbara, University of Pittsburgh, University of North Carolina, Kent State University and Thomas Jefferson University. Their choice to join us and build their careers here is a confirmation that we, as a College, are on the right path with many new challenges and achievements to look forward to.

## Parviz Ansari, Ph.D.

Dean, College of Science and Mathematics

among scientists. The symposium included keynote speaker Dr. Irene Pepperberg, a research associate at Harvard University, who discussed number sense in parrots, as well as two poster sessions during which students answered questions about their research. The symposium concluded with a banquet and social mixer during which students and faculty from many different colleges and universities discussed research ideas and socialized.



*Biology students mix it up at Saint Joseph's (from left to right: Drew Garcia, Megan Mondelli, Marisa Cusumano, Allison Belli, Aneda Balakhan and Stacy Kichline)*

# STEM Award Winners

Chemistry major Lucas Solano, and biochemistry majors Steven Fishbein and Pallavi Chary took home first place honors at this year's STEM Symposium as lead investigators for their presentation, Development of Betulin Conjugates as Anti-Cancer Agents. Their faculty sponsor was Dr. Subash Jonnalagadda of the department of Chemistry and Biochemistry.

Biochemistry major Kelsey Coolahan was also recognized at the symposium as an outstanding member of the Pre-Health Society. Coolahan's post graduation plans include attending medical school.



*Kelsey Coolahan with Pre-Health Advisor Tomas Varela*

The College of Science and Mathematics and the Pre-Health Society sponsor the awards which is presented annually to outstanding students in the field of research.



*(L to R) STEM winners Lucas Solano, Steven Fishbein, and Pallavi Chary with their faculty sponsor, Dr. Subash Jonnalagadda.*

# Higgs Boson Draws Mass-ive Audience

This spring, Dr. Sarah Eno from the University of Maryland presented “In Search of the Higgs Boson: The LHC and Results from the Energy Frontier” as part of the College of Science and Mathematics Dean’s Distinguished Speaker Series.

The intriguing presentation answered the questions, “What’s a Higgs boson?” (the particle that gives all matter mass). “Why have we been looking for it so long?” (it could affect the expansion rate of the universe). And the biggest answer revealed...“Did we find it?”(99.9% sure!)

Last summer, several experiments discovered the existence of particles from

the Higgs boson using a Large Hadron Colliders (LHC), which is a proton-proton collider worth over \$3 billion located in Switzerland. In operation since 2008, the LHC provides the highest center of mass energy in the world. Discovery of the Higgs boson will help to complete one of the last pieces of the puzzle of the Standard Model on how the universe works.

In its third season, the dean’s lecture series continues to showcase prominent scholarly presenters to enlighten students, faculty and the general public on interesting and timely topics.



*Dr. Sarah Eno of University of Maryland presents her lecture on the search of the Higgs boson to a large audience of faculty and students*

## What on Earth is Happening?

Now you can find out with daily updates from space via the new video exhibit ViewSpace installed outside the Edelman Planetarium last summer. ViewSpace is an internet-fed, self-updating, permanent video exhibit from the Space Telescope Science Institute, home of NASA’s Hubble Space Telescope and its successor, the James Webb Space Telescope. “It transforms a small corner of the Science Hall atrium into an ever-changing kaleidoscope of inspiring and educational presentations of the latest and most beautiful in astronomy and space-based earth science,” said Dr. Keith Johnson, planetarium director.

“New content is downloaded every night from the Institute, so the exhibit never goes out of date,” Johnson said. “Every day, for example, you can see the latest ‘Astronomical Picture of the Day,’

a service of NASA that many people view on their desktop computers.” Some sequences deal with observation of the Earth from space, including global weather, climate and volcanoes.



*New video exhibit, ViewSpace, displayed outside the Edelman Planetarium*

Other display sequences take us out into space, and explain the details of the colorful images that have been produced by the Hubble Telescope over the past 20+ years, including gaseous nebulae, planets, distant galaxies, and even black holes.

More information about Edelman Planetarium can be found at [www.rowan.edu/planetarium](http://www.rowan.edu/planetarium).

# Student Research Symposium draws biggest crowd ever

Enthusiasm, interest and professionalism filled the room at the 16th STEM Symposium on April 26. Students from the fab four -- science, technology, engineering and mathematics -- displayed their research accomplishments to a record-breaking crowd of over 180 attendees.

The Perez Group, named after their mentor Dr. Lark Perez, stood out dressed in monogrammed white lab coats and were among the over 110 presentations – another record-breaking number. Their research focused on developing small-molecule inhibitors of virulence. “It makes a molecule possess features needed to inhibit an infection for people with weakened immune systems,”

junior biochemistry major Kevin O’Brien, of Washington Township, explained.

Another intriguing and successful presentation demonstrated the coating of titanium implants, such as teeth, with silver to prevent infection. This research was presented by partners Fallon

Waechter, 22, senior biochemistry major and Clarence Medina, senior engineering & chemistry dual major.

“People are getting infections from these titanium implants,” Waechter said. “We are looking at new ways to stop infection by coating titanium implants with silver.”

Various students worked on this project for the past three years and not until recently did it finally become successful. Better yet, the Department of Defense found interest in this, and is now patent protected. The group also applied for federal/national funding for continuing research. “It’s fulfilling to see that it worked and can be used for wide application,” Waechter stated.



*The Perez Group's presentation was among over 110 abstracts that were accepted at this year's STEM Symposium*

## CSM First Ever Telescope Workshop a Success

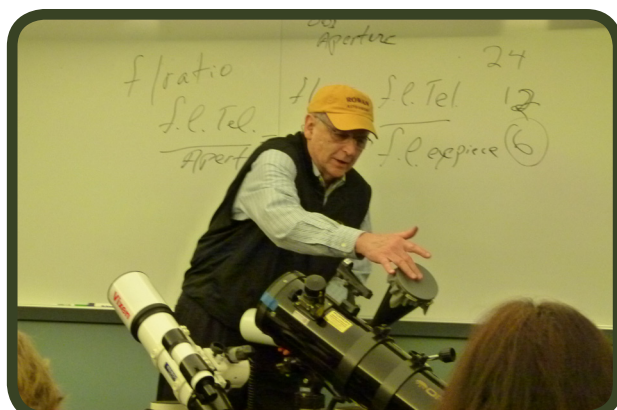
College of Science and Mathematics hosted its first ever Telescope Seminar in the Edelman Planetarium. The popular event was directed by astronomy professor Dr. Donald Farnelli and included four speakers, planetarium director Keith Johnson, and astronomy professors Eddie Guerra, Lloyd Black, and Steve Simmerman, all from the department of Physics and Astronomy.

The seminar introduced workshop goers to the celestial sphere, instructed how to locate bright stars, and use stars to align a telescope. The seminar also demonstrated various types of telescopes and their optics, and included a brief history of the telescope from the

beginnings by Galileo and Newton to the modern innovations that make telescopes accessible to all.

“We heard only praises and positive comments from visitors about the workshop,” said Farnelli. “We received many questions about when we are going to hold another telescope workshop. It was definitely a very successful event.”

Visit [www.rowan.edu/planetarium](http://www.rowan.edu/planetarium) for future dates.



*Astronomy Instructor Dr. Steve Simmerman describes equipment needed for safe solar observing*



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## Alumni Spotlight



*By Leonard McMullen, '85*

I graduated from Rowan in May of 1985 with a BS in Chemistry and having greatly benefitted from the patience and mentoring of several faculty members of the Chemistry department, most notably Drs. Charles Schultz, Robert Newland and George Leder. Shortly after graduating, I headed south on Interstate 95 to the University of Maryland where I earned a Ph.D. in Organic Chemistry in 1990, followed by a Postdoctoral study at MIT in Boston. Finally, in 1991 it was time to move from academic life to the corporate world. My first job was with the pharmaceutical company Sterling Winthrop (now Sanofi

Aventis) where I worked as a research chemist, fulfilling a dream that began as an undergraduate at Rowan.

My education at Rowan prepared me extremely well for graduate school, where I was among the best of the best students from all around the world. I was fortunate to walk through the doors of the University of Maryland with the advantage of a Rowan education. My years at Rowan put in place a rock solid foundation, which I have built upon my entire life. I consider myself to be a lifelong learner. So in 2003 I went back to school by taking a short break to attend the Harvard Business School Advance Management Program, which provided me with the tools I needed to progress further in my career.

For the past 19 years, I have worked for FMC Corporation, a fortune 500 Chemical company with its headquarters located in center city Philadelphia. My career has taken me down paths I could have never anticipated as a student at Rowan. I have traveled to the world and have had the opportunity to live in Hong Kong for four years with my wife and daughter. Today I lead the global purchasing activities for the chemical materials we use to make our products at FMC. My team is located in China, India, Australia, USA and the UK, while my office is in Philadelphia. Although my days of doing bench chemistry are long behind me, I use my knowledge of chemistry, business, and cultural diversity to create value for FMC. This all began with that educational foundation I built at Rowan.

### The Scope

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