

CSAM NEWSLETTER

COLLEGE OF SCIENCE AND MATHEMATICS: A SPECTRUM OF POSSIBILITIES

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In With The New . . . Again

By Jinan Jaber, Dean's Office

MSU faculty members and many alumni may remember classes and science laboratories in what once was one of the most modern buildings on campus - Mallory Hall. Mallory opened in the early 60s at a time when many campuses across the country were experiencing a boom in enrollment and were rushing to erect buildings to accommodate this growth.



Mallory Hall Currently

Many buildings of that era reflected function and economy over construction ornamental designs such as columns and arches. These building were simple with iconic flat roofs. That era is soon to end at Montclair State.

At her opening address for the new academic year, President Cole announced that "work will begin this year on the next major facilities project, ... the complete renovation of Mallory Hall." She noted that this "half-century old, 34,400-GSF building will be renovated into a state-of -the-art, 43,800-GSF instructional and research facility for the computer science department.

es." The project will add a fourth floor to the building and will repurpose the existing space to house classrooms for the thousands of students taking courses or pursuing degrees in Computer Science and Information Technology, as well as for a wide range of highly specialized instructional spaces and research laboratories, in areas such as Cyber Security, Forensics, Data Ana-

lytics, Image Processing, Parallel Computing, Computational Sensing, and Imaging and Optics. The facility will also house two Biology research laboratories, our Health Careers program, CSAM Career Services, Upward Bound, and CSAM Advising services. The

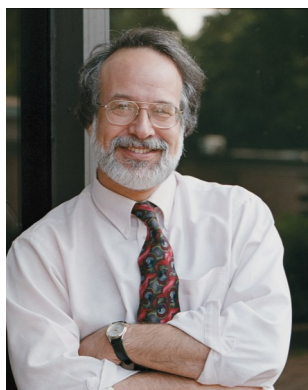
building will be fully life-cycle renovated with new heating, cooling, plumbing, electrical and life safety systems, plus [while we are all sure to miss those lovely orange panels) a new exterior facade and roof system. The project will be funded in part by \$7 million in phase-two state bond funds received by the University."

Rendering of the "new" Mallory Hall



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From Dean Prezant



Not that you could have possibly missed it, but next month we'll be electing a new President of the United States. During this remarkably long and loud campaign season there has been a great deal of discussion from all candidates about almost all things relevant to our future. I say almost all things because there has been next to nothing in the campaign

that deeply focuses on science. I would argue that this gap is a major dilemma for us as voters as almost everything in and for our future is dependent on science. So why so quiet? Efforts to balance energy production and climate change can be a dangerous line to walk for a politician. Balancing the need to insure appropriate food for a growing populace and while dealing with perceived issues of GMOs seems to be a difficult conversation to have with the public. And seeking votes among deeply religious individuals while protecting constitutionally approved reproductive rights can create verbal jousting with little progress on either side. These are just a few issues that are mostly being avoided in the public realm of public dis-

course by these candidates. But, good news. ScienceDebate.org, a nonprofit advocacy group, was able to get Hillary Clinton, Donald Trump, Jill Stein and Gary Johnson (or their surrogates) to answer 20 relevant STEM questions. The questions cover biodiversity, research funding, the internet, public health, space, STEM education and several other critical issues in the realm of science and technology. I urge you to take a look at: <http://sciencedebate.org/20answers> The questions are highly relevant and the answers are highly informative...and isn't it information, facts, depth of understanding and solid plans that should drive our vote. As Americans lag globally in science knowledge among citizens of "developed nations", it threatens the very core of our democracy as well as our competitive abilities. The answers from our candidates offer us insight into their depth of knowledge and how much they have thought about issues that, literally, will determine our collective future. If you want to know what others think about the answers offered by these Presidential candidates, you might want to sneak a look at the "grading" from Scientific American for all responses to the 20 questions: <http://www.scientificamerican.com/article/grading-the-presidential-candidates-on-science/> ... but please, be a good teacher and do your own grading and evaluation first! ♦

CSAM Alumni Career Series

by Gennae Hinson, Career Services

With the culmination of years of academic rigor actualized by degree conferral, often-time students, who suddenly become alumni, are faced with a familiar question, "What are your career plans now?" Many fret over those six words and are unsure how to get their career started after graduation. We understand these concerns.

This summer, CSAM Career Services and the MSU Center for Career Services offered its inaugural Alumni Career Service Series. The series included four career-directed work-

shops: Resume and Cover Letters, Utilizing Networking and Social Media for Your Next Job Search, The Job Search Process, and Interviewing Skills. Each workshop was designed to build skills and career necessary



Recent CSAM Alumni at one of the workshop

tools to assist alumni with their career search. Tips such as understanding the application tracking system (ATS), behavior-based interview questions, writing the elevator pitch, creating a resume for science specific careers and more was discussed during the sessions.

The series was developed to give alumni additional career support as they transition into the world of work. CSAM Career Services and the MSU Center for Career Services will continue to program throughout the academic year. ♦

Calendar of Events:

Below is a select list of upcoming workshops presented by CSAM Career Services. For a full list go to: <http://www.montclair.edu/csam/career-services/workshops-events/>

October 26 at 3:00 PM: Marketing in the Pharmaceutical Industry with

Ogilvy CommonHealth Worldwide

November 2 at 10:30 AM: Employer Resume Critiques

November 2 at 3:00 PM : Professionals Science Series- Dr. Michel Bitritto

November 8 at 3:00 PM: Staffing for

Science, Engineering, and Preclinical Professions

November 10 at 5:00 PM: Interviewing Success for Graduate Students

December 5 at 5:00 PM: Optimize Social Media and LinkedIn for Your Job Search

Advisory Council – Member Profile

The College of Science and Mathematics welcomes its newest Advisory Council member, Mr. Josh Weston of Montclair.

Mr. Weston began his professional career at ADP, Automatic Data Processing, in 1955, leading the company in a variety of capacities before being named CEO in 1982. ADP, the largest payroll and tax filing processor in the world, had over 160 consecutive quarters of double-digit growth under his leadership. Josh served as CEO until his official retirement in 1998. He remains Honorary Chairman.



Mr. Weston has served on the J. Crew Board as well as many other boards for major corporations and charities. He is an active pro bono member of numerous local, national, and international boards, with various leadership roles within the Committee for Economic Development (CED), Business Executives for National Security (BENS), the United Nations Association (UNA), the International Rescue Committee (IRC), and the Energy Security Leadership Council (ESLC). He also served on the

President's Task Force to Improve Veteran's Health Care and the National Commission to Restructure the IRS, and is vice chair at Liberty Science Center.

Mr. Weston and his wife Judy are active members of the community. They provide generous support to many arts and education organizations, and participate in humanitarian efforts. Of note, the Westons have long had a primary focus on education. They are

sponsors of the Josh and Judy Weston Awards for Excellence in Teaching, the Weston Robotics and Engineering team, and CSAM's own Student Science Scholars program, in partnership with Montclair High School.

Mr. Weston holds a B.S. in economics from the City College of New York and a master's in economics from the University of New Zealand (as a Fulbright scholar). He holds several honorary doctorate degrees, including one from Montclair State University. ♦

Visit CSAM at www.montclair.edu/csam/

"Science in Action"

Homecoming is a national institution among our American colleges and universities. At its inception, Homecoming has traditionally centered on football games. It has evolved into an annual event and a great occasion for alumni to return to campus for a day or a weekend. Homecoming programs usually include activities for alumni (and current students) such as cultural and art events, campus tours, a carnival, a parade and of course a football game. Montclair State University has maintained this tradition and on Saturday, October 22, the 2016 Homecoming Day activities will take place throughout the campus.

This year the College of Science and Mathematics will present special and participatory demonstrations that will arouse the scientist in all of us. Attendees will be able to participate in hand-on events that showcase "science in action" and answer such questions as:

- ♦ Just what does an octopus feel like?
- ♦ Can someone else take over my body movement through their electrical currents?
- ♦ Just what does it take to eject over a thousand ping-pong balls over 10 meters in the air...and just how loud is that explosion? (with prizes for those able to find specially marked ping pong balls after the explosion)!

These events will be held from 11:00 a.m. to 1:00 p.m. at the Center for Environmental and Life Sciences. Refreshments will also be served.

In addition, photos from our STEM (Science, Technology, Engineering and Mathematics) students' photo competition will be on display for all to view. And, CSAM Student Ambassadors will be on hand to provide building tours and point out key features of our newest science facility. After this event, be sure to visit the Campus Carnival, Beer Garden and football game! Check out the full schedule of events at <https://www.montclair.edu/alumni/get-involved/homecoming/> to see all of the activities for the day! ♦

- ♦ Can we generate electricity in a sustainable manner (and make a delicious fruit smoothie at the same time)?

ISS Green Teams

By Rohan Padhye, PSEG Institute for Sustainability Studies

In May 2016, the PSEG Institute for Sustainability Studies (PSEG ISS) launched its pilot Green Team Program partnering students with seven different corporations located throughout New Jersey.

During a ten week program, 35 students representing all of CSAM's majors as well as majors in Business Administration, Communications, English, French, Finance, Fine Arts, and Nutrition, were placed in teams of five and assigned a company to work with for the summer. Teams worked directly with their assigned company to develop solutions for a variety of different sustainability challenges. A detailed summary of Green Team deliverables are listed below:

For *BMS*, the team developed an employee survey designed to provide BMS with insight into understanding and improving employee engagement with its sustainability program, conducted a focus group to understand factors that would motivate younger employees to engage with BMS' current sustainability initiatives and proposed a redesign of BMS' internal "Go Green Sharepoint" site to better promote the company's sustainability initiatives amongst employees.

Cox Printers asked the team to calculate its carbon footprint and provided an analysis of how it compares to similar businesses in its region. After conducting a cost analysis, the team recommended utilizing biodegradable shrink wrap as a new packaging solution which was immediately instituted. The Team also developed two separate "Green Roof" proposals designed to reduce heating/cooling costs and overall carbon emissions.

The *Greener by Design* team wrote a whitepaper comparing Leadership in Energy and Environmental Design (LEED™) certified buildings to those constructed using a

LEED™ approach and provided a map simulation of under-utilized and closed properties for potential redevelopment of these sites while also creating an inventory of those properties in the region and researched how a microgrid can incorporate existing renewable, or newly distribute energy in order to reduce emissions.

A team created a proprietary carbon calculator for *NJM* to calculate the annual carbon footprint and identify opportunities to reduce CO2 emissions, conducted ROI analyses on installing hand dryers, solar panels, and LED lighting at NJM's West Trenton campus, created infographics highlighting NJM's current sustainability efforts, as well educational infographics designed to reduce employee waste and increase recycling.

The *PGIM* team developed a GRI reporting for template identifying "core" (non-industry specific) and real estate specific indicators that would allow PGIM to report to the GRI G4 Standards, wrote a 30+ page "Get Green Guide" document identifying best practices in waste management and recycling and designed posters and other infographics to be displayed at PGIM managed properties that educate employees on the best ways to reduce waste and increase recycling.

The *PSEG* team also created an excel tool identifying "core" non-industry specific and utility specific indicators that allowed PSEG to report its progress towards meeting GRI standards on the company's website, created a competitor analysis identifying sustainability best practices and opportunities for PSEG to expand upon its current sustainability initiatives and filmed a public service announcement (PSA) to increase employee engagement with the company's sustainability initiatives.

The *Sabert* team conducted analyses of processing sugarcane bagasse, the environmental benefits and drawbacks of using bagasse sheets vs. bagasse slurry, the overall carbon footprint of the Green Collection supply chain—from its production in Asia to its storage in the United States and the disposal of Green Collection items, specifically disposal of in landfills vs. disposal through composting.

While working on their deliverables, students also attended several professional development trainings



Summer 2016 ISS Green Teams with ISS Director, Dr. A. Tuininga (center)

Continued on page 6

Certified Water Quality Testing Now Available

By Kevin Olsen, Chemistry and Biochemistry

The Passaic River Institute was awarded water-testing certification by the New Jersey Department of Environmental Protection in August. The certification will allow the Institute to pursue research opportunities outside of the university as well as provide better quality research support to faculty and students. Mei Yin Wu, Ayuni Yussof, Lee H. Lee, Rosemary Lipala, and Kevin Olsen worked with graduate student Alessandra Rossi for more than eight months to achieve the certification.

Certified laboratories perform routine testing according with chemical or microbial methods that have been approved by state regulators, must periodically analyze proficiency samples, adhere to quality control standards, and are regularly inspected by the DEP. Laboratory certification insures that accurate, precise, and le-

gally defensible data is provided by the environmental laboratories. In many instances certified laboratory data is used to document compliance with federal and state laws. The documentation and record keeping procedures used by certified laboratories were designed so that all data generated would be admissible in court.

The Passaic River Institute's microbiological certification entitles it to test for total coliforms and E. Coli in drinking water and E. coli and enterococcus in surface waters. The laboratory is also certified for a set of basic water chemistry parameters including conductivity / salinity, dissolved oxygen, pH, total suspended solids, and turbidity.

The Passaic River Institute has been working with a number of local governments and environmental advoca-

cy organizations on a range of water quality issues. The DEP certification allows the institute to meet the needs of a wider range of organizations. The laboratory's first two clients for certified microbial analysis are the Musconetcong Watershed Association and the Township of Montclair.

The Passaic River Institute invites the entire university community to suggest possible clients and collaborators. Municipal governments and environmental commissions, residential lake associations, residential well water users, utilities, and environmental NGOs are just some of the organizations that can use the laboratory's services. For more information contact the Passaic River Institute, 973-655-5423 or pri@mail.montclair.edu. ♦

Mark your calendar

Emerging Science Lecture

March 20th, 2017 - 8:00 PM, University Hall Conference Center

With John Crowley, Chairman and CEO, Amicus Therapeutics

John Crowley is a biotechnology executive and entrepreneur. Two of his children were diagnosed with a severe neuromuscular disorder, glycogen storage disease type II, also called Pompe's disease. Frustrated with the slow pace of research on Pompe's disease, he left a large pharmaceutical company to take a leadership role at another company where they were working on new experimental treatments for the disease. He is best known as the founder of several biotech companies devoted to curing genetic diseases. His family's story is featured in a 2006 book by Geeta Anand, *The Cure: How a Father Raised \$100 Million – And Bucked the Medical Establishment – In a Quest to Save His Children*, which was later made into a film starring Brenden Fraser as John Crowley and also starring and reduced by Harrison Ford, *Extraordinary Measures*. Crowley also wrote a personal memoir entitled *Chasing Miracles: The Crowley Family Journey of Strength, Hope and Joy*, coauthored with Ken Kurson.

Crowley, a native of Oradell NJ, received his B.S. in Foreign Service from Georgetown University, a J.D. from the University of Notre Dame Law School and an M.B.A from Harvard University.

Continued from page 1 - In With the New

Building mitigation will soon begin with construction slated for December 2016. By Summer 2018 a new Mallory Hall will emerge joining Science Hall, Richardson Hall, CELS, and portions of Schmitt and Blanton Halls as CSAM continues to grow and thrive.

CSAM Career Services, Academic Advising and the Health Careers and Upward Bound Programs will be temporarily located on the third floor of Schmitt Hall and will return to newly renovated space upon the completion of Mallory Hall. When the dust finally clears (and we then set our sites on Richardson Hall), we hope to have a remarkable new facility that will further the outstanding work already done by all the programs housed in our new Mallory Hall. ♦

New Faculty/Staff Join CSAM

Dr. **Rajesh Kumar Gautam** joined the Centre for Quantitative Obesity Research as a postdoctoral research fellow. He will be working under supervision of Dr. Golnabi over the next year on the problem of weight gain during holidays. Dr. Gautam is an Assistant Professor in the Department of Anthropology at Dr. Harisingh Gour Vishwavidyalaya, India. His main research area is in nutritional anthropology, human growth, population, and tribal studies. His publications on nutritional assessment of Indian population and growth studies of Indian children have widely attracting the scholars around the world. This year, he was one of the recipients of the Raman Post-Doctoral Fellowship, which enables Indian scholars to work with renowned and established scholars at different American universities. This competitive fellowship is given by the Government of India after the completion of a rigorous four-tiered selection process.

Dr. **Glen D. O'Neil** joins the Dept. of Chemistry as Assistant Professor from Columbia University, where he was a Postdoctoral Research Scientist in the Department of Chemical Engineering. Prior to Columbia, he was a Postdoctoral Fellow at the Electrochemistry and Interfaces Group at the University of Warwick in the UK. His areas of expertise are in



electrochemistry, chemical sensing, and electrochemical imaging. At MSU his research will focus on electrochemical imaging of semiconducting electrode materials for applications in chemical sensing and energy storage. He earned a B.S. from the University of Delaware and a Ph.D. from Tufts University.

Continued from page 5 - ISS Green Teams

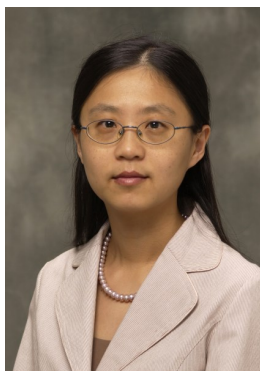
on topics such as Leadership in Energy & Environmental Design (LEED) certification and writing Global Reporting Initiative (GRI) sustainability reports, as well as a variety of academic trainings.

These trainings were designed to increase their understanding of specific environmental sustainability issues and improve their research, analytical, and presentation skills.

On August 4th, PSEG ISS hosted an end-of-program event where students shared their final results to over 70 attendees from participating companies, local and multinational corporations, and academic institutions. Several companies that did not host a team in 2016 indicated interest in hosting one in 2017.

Mr. **Rohan Padhye** joined the PSEG Institute for Sustainability Studies as Assistant Director bringing with him years of experience in corporate social responsibility, social supply chain management, and project management. Prior to joining the PSEG Institute, he worked as a product manager and account manager for Intertek, assisting multinational corporations in understanding and addressing human rights and environmental risks in their supply chain. Rohan has also spent several years working for Sustainalytics as a Sustainability Analyst, researching and reporting on corporate social responsibility in the pharmaceutical, healthcare, and telecommunications sectors. He holds a B.A. from The College of New Jersey and a M.Sc. From the London School of Economics

Dr. **Michelle Zhu** joined the department of Computer Science as an associate professor from Southern Illinois University Carbondale, where she was



a tenured associate professor and director of undergraduate program in the department of Computer Science. Prior to that, she completed her dissertation in the Computer Science and Mathematics division of Oak Ridge National Laboratories (ORNL). Her research areas focus on parallel and distributed computing and big data system. She has published about 100 peer-reviewed articles in various journals and conferences.

She received a total of over one million research and education grants from various agencies such as DOE, ORNL, NSF, Illinois State Board of Education and NVidia company. She earned a B.S. from Zhejiang University, and a M.S. and Ph.D. from Louisiana State University, Baton Rouge. ♦

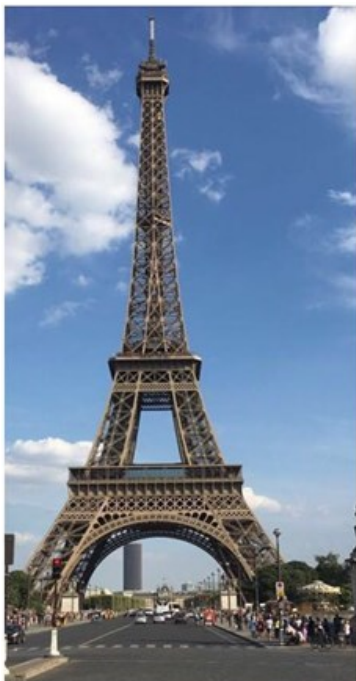
Overall, the work of the Green Team's was very well received by all participating companies; many of which expressed a strong intent to use their team's work when working on existing sustainability projects or developing future initiatives. BMS specifically asked their Green Team to present their deliverables to senior management during the fall semester. A few Green Team students were also placed into internships for the fall semester as a direct result of their work. PSEG ISS hopes to expand the program to include more corporations, and more students with the help of the new PSEG ISS Assistant Director, Mr. Rohan Padhye. In the coming year, PSEG ISS will focus on building out faculty research opportunities as a component of the Academic-Corporate-Community partnerships in its strategic plan with the assistance of the new PSEG ISS Associate Director, Dr. Pankaj Lal. ♦

Summer in Paris

By Pralhad Burli, Doctoral Candidate Environmental Management

During April 2016, I came across an advertisement for a highly competitive internship at the Organization for Economic Cooperation and Development (OECD). The position was located at the OECD headquarters in Paris, France. I immediately discussed the specifics of the position with my doctoral advisor Dr. Pankaj Lal, and he was extremely supportive of my decision to apply for this internship. We felt that this would be a great opportunity to get some experience in the policy realm and it would allow me to build a broader network of colleagues in my field of work. I prepared my application documents and applied for the position on the same day.

Growing up in India, I was always amazed by European backpackers who would traverse the length and breadth of India soaking in the culture while combating soaring temperatures and spicy food. Although it is relatively easy to get by in most parts of India if one can speak English, translocating yourself into a region that is so vastly different is a challenge and perhaps a life altering experience for most. I always wanted to experience living in Europe and although my primary ob-



jective to apply for this internship was to build my repertoire as a researcher, I was equally excited about living in France over the summer.

My interview took place shortly after my application, and a week later, I was offered the position. Thus began frantic weeks that involved applying for a work visa, obtaining insurance, apartment hunting, and numerous other nuanced preparations for living abroad, much of which would have been exceedingly difficult without priceless help from the new recruits' onboarding team at the OECD.

At the OECD, I was appointed jointly in the Directorate of Financial and Enterprise Affairs in their Investment Division and the Climate, Biodiversity and Water Division of the Environment Directorate to work on interdisciplinary projects. I primarily contributed to econometric analyses for two projects dealing with investment and innovation in the low-carbon transition. My tasks included composing

new variables, collecting data and enhancing existing databases. In addition, I contributed by performing data analysis on an electricity sector competition index and reviewing methodological aspects for the econometric models used in the project. This research will be published as an OECD methodological working paper for which I will be a co-author.

My experience working at the OECD was exemplary. My co-workers were nationals of numerous countries, including Germany, France, the United Kingdom and the United

States, and the work environment was both multicultural and extremely collegial. I benefitted from the experience of participating in the OECD Workshop on "Optimizing global value chains in environmental goods and services" and attending several talks and brown-bag meetings that introduced me to current research topics and tools, both in my field of research and beyond.

Though not of an academic nature, I was extremely lucky that my visit coincided with the Euro Cup 2016, which allowed me to soak in the football (read soccer)



atmosphere in the city. When France played Portugal in the final, it was difficult to stay away from the action; however, a Portuguese victory meant that the French celebrations were relatively low-key. I also witnessed the last leg of the Tour de France and it was indeed a spectacle. No trip to Paris would be complete without a visit to its monuments, museums, bakeries, and cafes. Furthermore, the widespread use of electric cars, bicycles, and an exceptional public transportation network underscores France's commitment to reducing air pollution. I certainly developed a liking for the French way of life.

I would like to thank Montclair State University for providing me with excellent training that helped me attain such a competitive position and execute my responsibilities effectively. I would particularly like to thank my advisor, Dr. Pankaj Lal, for supporting me in achieving my academic and research goals. ♦

Third Annual TechLaunch

By Jinan Jaber, Dean's Office

Do you sometimes find talks and presentations not in your discipline or field of study boring or even difficult to follow and understand? Then, the TechLaunch Future Scientist Student Competition is a dynamite forum for you to hear our students present their work in terms we can all understand.

TechLaunch Future Scientists program, inaugurated in 2014, is a competition for our undergraduate students to present their research with the objective of succinctly and effectively communicating their topic, findings and impact to a largely non-scientific lay audience and simultaneously honing invaluable presentation skills and access to coaching from highly-placed corporate executives and entrepreneurs.

Eleven College of Science and Mathematics students selected by their academic department competed on April 21, 2016 for First Place (\$1,000), Second Place (\$600) and Third Place (\$300) awards

Christina Verhagen from the department of Earth and Environmental Studies received First Place for "Analysis of Pliocene core DVDP-11 for evidence of a vegetated Antarctic coastline" (Mentor: Dr. Sandra Passchier). Mathematics student Alexa Aucoin took Second Place for her work on "The Ping-Pong Effect: Extinction Dynamics in

Stochastic Populations with Migration" (Mentor: Dr. Eric Forgoston). And, Physics student Blake Moore placed Third for "Gravitational Waves from Eccentric Binaries" (Mentor: Dr. Marc Favata).

Other student presenters were Liz Pudlak (Biology, Mentor: Dr. Paul Bologna) "Quantifying Impacts of Invasive Species in the Caribbean." Bianca Sanabria (Biology, Mentor: Dr. Sandra Adams) "In Vitro Synergistic Antiviral Activity of Epigallocatechin Gallate-Stearate and Acyclovir on Herpes Simplex Virus Type 1 and 2." Nandini Surendranathan (Biology, Mentor: Dr. Quinn Vega) "Expression and Purification of the bacteriophage protein Lysin A and Lysin B." Pamela Jumbo Cueva (Chemistry, Mentor: Dr. Yvonne Gindt) "Understanding How a Potential Drug May Help Control the Human Body's Molecular Clock." Danielle Le Roux (Chemistry and Biochemistry, Mentor: Dr. Nina Goodey) "Contaminant Loads and Enzymatic Function in Liberty State Park Soils." Jeffrey Adamski, Jefferson Garcia, Sebastian Kufel and Tyler Sookdeo (Computer Science, Mentor: Dr. Chris Leberknight) "An Adaptive and Personalized Learning System." Eric Svitok (Computer Science, Mentor: Dr. George Antoniou) "Arcade Style Game Development." Walter Ullon (Mathematics, Mentor: Dr. Eric Forgoston) "Early-Warning Signals Predictors of Extinction Events in Dynamical Models."

Rich Bagger, Executive VP Celgene Corp; Michel Bitritto, Chair CSAM Advisory Council; Mario Casabona, Founder & Managing Partner TechLaunch, LLC; Murali Kaundinya, Director Merck & Co., Inc.; Tom Lewis, President The Louis Berger Group; Josh Weston, Honorary Chairman, ADP; and Ni'Kita Wilson, VP of Sales & Innovation Aware Products served as this year's judges.



1st place winner C. Verhagen with CSAM Dean R. Prezant (l.) and TechLaunch CEO M. Casabono (r.)

A. Aucoin placed 2nd



3rd place B. Moore presenting his research



This event would not have been possible without the support of M. Casabona (above right) TechLaunch, LLC and Josh Weston (above left). ♦

CSAM Students Take the Cup

By Jinan Jaber, Dean's Office

Before students take to their classes and find a quiet place to study, the first day of the fall semester always kicks off with Red Hawk Day for incoming students. The day welcomes the incoming class with a fun-filled day of food, fun, music and other activities. The evening of September 6 began with a University Olympics at the Recreation Center. More than 250 students participated, representing the 5 colleges and school. Before the official competition began, each college/school dean had a chance to rouse their respective teams. CSAM Dean Prezant made sure our team recognized their advantage in using science and math to "think their way to victory".

During the semi-final round, the competition became tense and exciting as all teams competed for the championship title. Spectators gathered along

the sidelines cheering loudly, especially during the final three and deciding competition rounds in dodgeball, indoor soccer and volleyball.

The Undeclared (UND) student team won the dodgeball competition, while the School of Business (SBUS) team won in volleyball, and the College of Science and Mathematics (CSAM)

won the indoor soccer. As the final scores were tallied, the CSAM team (pictured below) emerged as the overall champion with a total of 50 points followed by SBUS winning second place and UND third place. We have "Yet another reason to be proud of our students...in the classroom, lab, field...or sports arena!" says CSAM Dean Robert Prezant. ♦



A few of incoming CSAM students competing in University Olympics 2016

Other Student News

Graduate student **Roomy Perez-Abraham**, along with **K. Garabiles Sanchez**, **M. Alfonso**, U. Gubler, J.J. Siekierka and N.M. Goodey published "Expression, purification and enzymatic characterization of *Brugia malayi* dihydrofolate reductase." *Protein Expression and Purification*, 128, 81–85.



(L to R: J. Villagomez, K. Grant, Dr. B. Bassle, Yale University, and K. Udit.

Undergraduate students **Kailyn Grant** and **Kaide Udit**, with Molecular Biology Masters student **Jose Villagomez**, attended the Howard Hughes Medical Institute (HHMI) Science Education Alliance – Phage Hunters Advancing Genomics and Evolutionary Science (SEA-PHAGES) 8th Annual Symposium held at Janelia Farm Research Campus this June. Jose, an instructor for the BIOL 112 SEA Phages laboratory course, also participated in the faculty workshops. Kailyn and Kaide presented the research completed by MSU's fifth cohort of the SEA-PHAGES program. Ten lytic Arthrobacteriophage and three lytic Mycobacteriophages were isolated this year and two Abidatro and LifeSavor were sequenced and annotated. The annotated genomes will be submitted to GenBank with the students in the BIOL 112/113 SEA-PHAGES course as authors. MSU's SEA PHAGES program is coordinated by Dr. Sandra Adams and Dr. Kirsten Monsen-Collar of the Department of Biology.

Jean Camacho, senior Biology major, has been selected as the Student Government Association (SGA) Director of Educational Funding and as the student representative to the University Senate. As director of educational funding, Jean will be the liaison between the SGA and the university community with respect to educational funding. Jean will also be working with MSU's executive director of budget and planning and will participate in Board of Trustee meetings.

Congratulations to **Chinweude Okani** and **Giancarlo Labruna** for capturing the "Outstanding Poster Award" at the 8th Annual GS-LSAMP & NNJ-B2B STEM Research Conference. ♦

Rotella Named ACS Fellow

Congratulations to Dr. David Rotella, professor of Chemistry and Biochemistry and Margaret and Herman Sokol Chair of Chemistry on being named one of 57 new 2016 Fellows by the American Chemical Society, ACS.

David Rotella is Sokol Professor of Chemistry in the Department of Chemistry and Biochemistry at Montclair State University. He earned a PhD in medicinal chemistry from Ohio State University and carried out postdoctoral research in organic chemistry at Penn State University. Dr. Rotella joined the faculty at Montclair State University in 2011 after a successful 20-year career in the pharmaceutical industry. His research is focused on discovering new lead compounds for use in parasitic, central nervous system and

is a \$2.5 million, five-year contract from the Defense Threat Reduction Agency (DTRA) to help develop inhibitors of the botulinum toxin, which causes botulism,



a life threatening illness characterized by paralysis and respiratory failure. Dr. Rotella has authored almost 50 scientific publications, holds seven patents and has presented at more than 30 invited lectures at U.S. universities since 1991 on drug discovery topics.

The Fellows Program was created by the ACS Board of Directors in December 2008 to recognize members of the society for outstanding achievements in and contributions to science, the profession, and the Society. It is a highly selective process with stringent criteria. Documented evidence must be provided of exceptional accomplishments, professional attainment, and impact in both the science, the profession, education, and/or management, and in volunteer service in the ACS community. Fellows are selected by a broadly representative Selection Committee of the American Chemical Society. Members retain the designation as an ACS Fellow, ACSF, for life. ♦

Faculty News

Huan Feng was invited to visit East China Normal University and Xiamen University in June and July. These two universities are highly reputable and famous higher education institutions in China. During his visit, Dr. Feng gave a talk entitled “(Sub)Micro-scale Investigation of Metal Distributions and Role of Fe Plaque in Metal Transport in Salt Marsh Root Systems” in East China Normal University, and a talk entitled “Metal Pollution in Estuarine and Coastal Environment” in Xiamen University.

Steven Greenstein was named an Associate Editor of The Journal of Mathematical Behavior, one of the top journals in mathematics education.

Between April and June 2016, **Nicole Panorkou** gave 5 papers: (1) “Unlocking the power of student’s thinking on geometric measurement” at the (New)³ Conference, a joint con-

ference of the Association of Mathematics Teachers of NEW York, the Association of Mathematics Teachers of NEW Jersey, and the Association of Teachers of Mathematics in New England at Iona College; (2) “Designing a clinical interview experience for pre-service elementary teachers” co-authored with **Eliza Leszczynski** at the Tenth Annual Conference of the New Jersey Association of Mathematics Teacher Educator in Trenton; (3) “Enhancing teachers’ formative assessment practices: Using learning trajectories in professional development” at the 13th International Congress on Mathematical Education (ICME), Hamburg, Germany; (4) “Designing professional development to support teachers in learning trajectory-based instruction” at the annual research conference of the National Council of the Teachers of Mathematics (NCTM), San Francisco; and (5) “Designing professional development around learning tra-

jectory-based instruction” at the annual conference of the American Educational Research Association (AERA), in Washington DC. The last three papers were co-authored by J. Korbrin.

Yang Deng was a Keynote Speaker at 252nd American Chemical Society (ACS) National Meeting & Exposition in Philadelphia. He delivered a presentation entitled “Reevaluation of ferrate(VI) decomposition in water with and without natural organic matter (NOM)”. At the same conference, he delivered a paper entitled “Net-zero water management: implementation of sustainable energy-positive water supply”, which has been recently highlighted by *Environmental Science: Water Research & Technology*. This paper provides a new approach to support a more sustainable water supply system. ♦

Kudos

Editor's note: Below is a list of grants awarded to CSAM faculty between January and September 2016 totaling over \$2,800,000.

Paul Bologna: Department of Environmental Protection \$56,791 "Assessing the biological control of Sea Nettles (*Chrysaora quinquecirrha*) by Nudi-branches."

Yang Deng: US Department of Agriculture (USDA) \$75,000 "Low-cost adsorbent coated (LAC) wood mulches for mitigation of New Jersey agricultural stormwater pollution" and US Environmental Protection Agency \$15,000 "Toward sustainable urban stormwater management with new, green low-cost active coating (LAC) wood mulch."

Huan Feng (PI) and (Co-PIs) **R.P. Prezant**, W. Zhang, C. Tong and L. Yu: The State Key Laboratory of Estuarine and Coastal Research, East China Normal University ¥120,000 "Multidisciplinary study of macrobenthos community response to sediment metal contamination in Yangtze River Delta Intertidal Zone."

Nina Goodey: National Science Foundation \$553,152 "Opening pathways, engaging, and networking in Chemistry in Northern New Jersey (OPEN-NJ)" with **K. Herbert**, **J. Siekierka**, **M. Kasner** and **J. Krumins** as Co-PIs.

Jennifer Krumins and **Nina Goodey:** National Science Foundation \$320,180 "RUI: SusChEM: Increasing soil enzymatic function with targeted microbial inocula."

Pankaj Lal: CAREER: National Science Foundation \$97,542 "Geographic suitability, socioeconomic uncertainty, and environmental consequences: Exploring place-based opportunities for bioenergy sustainability - Year 3."

Xianoa Li: National Science Foundation \$168,245 "MRI: Acquisition of an inductively coupled plasma-M mass spectrometry (ICP MS) for elemental concentration and speciation analysis at Montclair State University."

Jorge Lorenzo Trueba: National Oceanic & Atmospheric Administration - Subaward from NJ Sea Grant Consortium \$35,000 "Managing for biodiversity and blue carbon in the face of sea-level rise and barrier-island migration."

Robert Meredith: National Science Foundation \$136,451 "Advancing bayesian phylogenetic methods for synthesizing paleontological and neontological data."

Mika Munakata and **Ashwin Vaidya** National Science Foundation's Improving Undergraduate STEM Education (IUSE) program \$299,701 "Engaged learning through creativity in mathe-

atics.

Jing Peng with **A. Feldman:** US Department of Defense \$145,170 "Dynamic data-driven fusion and scene understanding for real time queries over live streaming video."

Robert Prezant and **Carlos Molina:** National Science Foundation (Rutgers University) \$72,252 "Garden State LSAMP Phase II."

Stefan Robila with **D. Trubatch**, **C. Du:** National Science Foundation \$497,057 "MRI: Acquisition of a high performance computing environment for advancement of computational science research and education."

David Trubatch: National Science Foundation \$98,248 "Collaborative Research: RUI: Three-dimensional multiphysics simulation of multi-phase flows with magnetic fluids."

Dirk Vanderklein with **N. Goodey**, **J. Dalley**, **J. Galster:** National Science Foundation \$300,000 "STEM Pioneers: A 3-year pilot study to increase science literacy and STEM enrollment among first-year first-generation students."

Danlin Yu: Morris County Park Commission \$7,200 "GIS and mapping service for the project "Connect to Walk—Year 1."

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