

CSAM NEWSLETTER

COLLEGE OF SCIENCE AND MATHEMATICS: A SPECTRUM OF POSSIBILITIES

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Back issues are available at: <http://csam.montclair.edu/newsarchive.php>

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CELS Official Groundbreaking

A long awaited state of the art instructional and research College of Science and Mathematics building is finally taking shape with an official groundbreaking ceremony held in September and construction moving at a brisk pace on the former sight of McEachren Hall. The most recent building for the College of Science and Mathematics to be constructed was Science Hall, opened in

life sciences. The ground floor will be devoted to our electron microscopy suite, a geographic imaging information systems laboratory, the facility's primary lecture hall, and a large seminar room. The ground floor atrium and lobby will house hands-on displays created in partnership between CSAM and the Liberty Science Center, exhibit space and high level video capabilities allowing visitors



1999. Since then the College's enrollment has increased by 45%, to 2,700 students and our fulltime tenured and tenure track faculty to 107. In fiscal year 2012-13 external research grants, excluding funds raised from private industry, was about \$3.7 million, or 41% of the total dollars and 52% of the total awards of the entire University. And, since the start of this fiscal year, 2013-14, in a mere 4 months, CSAM has already generated over \$7M in external funds.

The 100,000 square foot building—the Center for Environmental and Life Sciences (CELS)—will cost \$55 million to construct and will house the Department of Earth and Environmental Studies offices, classroom and laboratories. It will also be home to the Passaic River Institute, the PSEG Institute for Sustainable Studies and the Sokol Institute for Pharmaceutical Life Sciences. The building will comprise a comprehensive array of laboratories, seminar rooms, classrooms, and other facilities that will enable collaborative transdisciplinary research in the environmental and pharmaceutical

to share in the excitement of ongoing research - often live-time from our research laboratories. The second floor has four major teaching laboratories adjacent to two seminar rooms and administrative offices. The environmental research la-

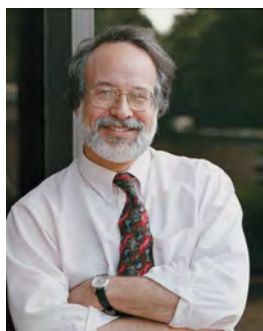


CSAM Dean Robert Prezant is surrounded by students at the official groundbreaking ceremony for the new Center for Environmental and Life Sciences.

boratories will be concentrated on the building's third floor consisting of four major research laboratories connected by open support areas designed to house shared equipment. To support the transdisciplinary focus, a computational research laboratory will be adjacent to the

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From Dean Prezant



Recently, productivity in the Dean's Office, unlike the rest of our College that lacks our visual vantage point, has decidedly dropped! The problem is the construction site for our new facility, the Center for Environmental and Life Sciences. CELS rises in full view just outside of our windows on the south side of Richardson Hall and with every whirl of a cement truck or pound of a pile driver or growl of a front loader...we're at the window! I've written about CELS before and the lead article in this current issue of our CSAM Newsletter reviews the recent official groundbreaking, but I wanted to extend a few words in this column to remind everyone about the "why" of the new building. Of course there will be new cutting edge laboratories in CELS; of course CELS will hold a beautiful atrium; and of course we'll have the essentials and more when it comes to equipment. But CELS is not about the "bricks and mortar". CELS is about our students and the parallel of our new science building rising from its foundation and our students' from their education foundations is not lost. CELS represents future generations of students who will be tomorrow's leaders in science discovery, will be tomorrow's science and math educators, and will be leaders of science related industries.

The Center for Environmental and Life Sciences was grown from the vision, imagination and scholarly and pedagogical needs of our faculty but represents the hopes, aspirations and goals of our students. As I sit in my office listening to the steel and cement coming together, I imagine the same congealing of our student's ideas, the formulation of their questions, their search for answers and their dreams of what is to come. CELS will offer our students and faculty an outstanding infrastructure to pursue their research and education, a site to pursue answers to questions, including questions yet to be asked and critical to our state and nation, and it will offer New Jersey a venue to grow the next many cohorts of scientists so critical to our economic, health and environmental security. The wisdom of our New Jersey citizen, through approval of the Building Our Future Bond Act, has allowed us to insure that this building will be available to our students. That act, however, only made 75% of the total cost available. To fully bring this dream for our students to fruition we remain confident that the people, foundations and industries of New Jersey will again see the wisdom of committing to tomorrow's scientists through continued contributions. You can learn more about CELS and about what you can do to help complete this critical next step for our students at: <http://www.montclair.edu/csam/center-environmental-sciences/>. ♦

Dr. Coutras Joins CS as Chair

Dr. Constantine Coutras joined CSAM on September 1, 2013 as Professor and Chair of the Department of Computer Science. The following is an excerpt from an interview recently conducted with Dr. Coutras.

Q: You came to MSU from Pace University as chair of the Computer Science department. Why the change?

A: *After 13 years at Pace, I felt the need for a new challenge.*

Q: What attracted you to the MSU position?

A: *A lot of things. Great leadership at the top levels, promoting growth and expansion even during the worst recession in recent years. The challenge to lead a CS department with great faculty to the "next level," and of course the opportunity to work close to home.*

Q: What is your professional background?

A: *I started as a senior software engineer at Motorola's Cellular Infrastructure Group, GSM Products Division in Arlington Heights (near Chicago) while I was still a PhD student. During my last year as a PhD student I spent a year as a visiting faculty member at DePaul University in Chicago before moving to the tri-state area and to Pace*

University where I stayed for 13 years. My area of expertise is in Computer Networking and more recently in Network Security.

Q: What are your plans/goals for the department?

A: *My main goal for the department is to increase its visibility, its status among other CS departments in the area. This will be achieved with more enrollment in existing and new degrees and attracting more talented faculty. I believe the department should also strongly consider offering a PhD degree.*

Q: What do you think the department excels at or what do you see is (are) the department's strength(s)?

A: *The department has great faculty, among them some renowned researchers and excellent teachers. All areas of computer science are covered, some stronger than others. I have also met smart and talented students pursuing their degree at MSU. And given the support for growth from the College and the University this department can only grow stronger.*

Dr. Coutras is located in Richardson 304 and can be reached at coutrasc@mail.montclair.edu or 973-655-7239 ♦

ISS Interim Directors Named

Dean Robert Prezant named Drs. William Thomas and Joshua Galster as interim director and associate director of the PSEG Institute for Sustainability Studies, respectively, as the College conducts a nation-wide search for a director. Drs. Thomas and Galster have established three main goals for the Institute for Sustainability Studies (ISS). The first two pertain to this year and maintain momentum by keeping the ISS active and relevant in the region, while the third builds and strengthens relationships within MSU and CSAM to ensure a vibrant and dynamic future.

First, this fall they will host a one day workshop to build partnerships with the DEP. Specifically, they will build on existing relationships with the DEP's Endangered Species Program (ENSP) to find common research interests, collaborative possibilities, and opportunities for our students to work closely with ENSP staff, either through internships or independent studies. This workshop was held on November 1 at the School of Conservation and attended by

interested faculty and staff.

Hosting a conference in the spring is their second goal. This conference will bring together people to think about the future of New Jersey and the region, and is tentatively titled "Sustainable Jersey: Ensuring Resilient Natural and Human Communities into the Future". An exact date is to be determined, but is imagined to be in late May or early June.

Lastly, they want to reach out to various people within the MSU community who have an interest in sustainability. Individually and in small groups, they want to facilitate conversations about what people see as the potential role for the ISS to play within CSAM, MSU, and beyond. An institute such as the ISS could serve many roles, and their goal is to identify some of the key areas that the ISS can contribute to in the future. These discussions also will help bring people together with common interests that fall under the broad umbrella of "sustainability." ♦

Unraveling the Economics of Environmental and Energy Issues

by Pankaj Lal, Earth and Environmental Studies

Under the aegis of a three year \$349,963 USDA funded project, I am leading a study to assess the impacts of forest based biofuel industry development and potential consequences for the poor and minority dominated counties in the southern US. The overall goal of this project is to generate regional-scale estimates of the socioeconomic impacts of forest biofuel development on rural communities and the region's capacity to produce forest biomass feedstocks.

industry that has not established itself yet.

The study will further our understanding of the short and long-term impacts of woody biofuel expansion in U.S. South and the ensuing socioeconomic impacts on rural landowners, minorities, and other rural groups. The study results will also assist scientists, and land managers at local, state, regional, and national levels in making evidence based decisions. This infor-

mation will also aid national and state policymakers who establish renewable energy goals and formulate subsidies, credits, trade tariffs, and other biomass initiatives in their decision making process. Research results will help generate public awareness, and develop education and outreach programs.

As co-director of a US-India Joint Clean Energy Research and Development Center, one of three consortia funded by a \$6.25-million grant from the U.S. Department of Energy, the Center has assembled a team of scientists ranging from economists and energy analysts, agronomists, soil scientists, geneticists, biochemical conversion specialists, and market

The preliminary results from the stakeholder meetings conducted in the states of Alabama, Virginia, and Texas indicate that forestland owners are mostly aware of bioenergy production but were unsure about the price they expect to receive. The landowners who expressed their price preference tend to expect higher price for supplying their forest biomass for bioenergy to account for inconvenience and assumed risks from engaging in an



Lal, standing, at stakeholder meeting at Appomattox, Virginia

ing analysts to lay the groundwork for advanced biofuel production from switch grass, a perennial warm season native grass,

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Advisory Council — Member Profile

Debbie Hart, President and CEO of BioNJ, worked alongside New Jersey's biotechnology industry leaders to establish BioNJ in 1994. BioNJ seeks to promote a business and public policy environment in New Jersey, Washington, D.C. and beyond that advances the growth and prosperity of New Jersey's biotechnology companies. She served on the transition teams of two former New Jersey governors and was recently appointed by Gov. Christie to the Council on Innovation. She is a member of the New Jersey Economic Development Authority's Technology Advisory Board and is a member and former Chair of its Technology Centre Advisory Board and was appointed by two Governors to the New Jersey Israel Commission. Past government support activities include the Prosperity New Jersey Pharmaceutical and Biotechnology Cluster Study, the Jobs Growth and Economic Development Commission and the Task Force on Higher Education Quality and Competitiveness of the State. She also served on the Business Task Force established in 2011 by the Legislature.

Ms. Hart is a board member of the Rutgers University Blanche and Irwin Lerner Center for the Study of Pharmaceutical Management Issues and the Rothman Institute of Entrepreneurship at Fairleigh Dickinson University's Sil

berman College of Business and the Science Advisory Board at Rider University. She also serves on advisory boards for the New Jersey Institute of Technology Biomedical Engineering Program, Monmouth University's School of Science, Technology and Engineering, the New Jersey Healthcare Businesswomen's Association and is a Director of Liberty Science Center's Women's Leadership Council. She served on the advisory board that guided and supported the establishment of the nationally recognized Monmouth County Biotechnology High School.



As an advocate for the industry, Ms. Hart has spoken before State and federal legislative committees. She is also a frequent speaker at industry events. She has been honored by the Women's Fund of New Jersey and by NJIT with a New Jersey Inventors Hall of Fame Award. She was named in 2011 and 2012 to the NJBIZ Power 100 and is a NJBIZ New Jersey's Best 50 Women in Business honoree. Ms. Hart holds an M.S. from the S. I. Newhouse School at Syracuse University where she graduated cum laude and a B.A. from Trenton State College, now The College of New Jersey, where she graduated magna cum laude. ♦

Teaching in Graz

by Mika Munakata, Mathematical Sciences

At many universities around the world, faculty are becoming increasingly involved in international collaborations. In non-English speaking countries, there has been a shift towards teaching content and research using English as the primary language. As these initiatives develop, universities across Asia and Europe are looking for programs that prepare university faculty to present, publish, and teach in English. The Global Education Center at MSU has been coordinating such programs for faculty abroad for the last several years.

Over three weeks in July, six faculty from Montclair State University taught a Teaching in English Summer Institute at Graz University of Technology (TUGraz) in Austria. The team consisted of Professors Susan Kerner (College of the Arts), Jim Nash, David Galef, Greg Waters, and Terry Waters (College of Humanities and Social Sciences), and Mika Munakata (CSAM). The team taught

over 30 TUGraz faculty participants from fields ranging from mechanical engineering to music education. Each participant took Teaching Methodologies, Writing for Research, and Spoken English each day during the intensive summer institute:.

The program offered both MSU and TUGraz faculty rich experiences. The courses had participants refining their skills in English, especially as they pertained to publishing in English-language journals and presenting to international audiences. In the Teaching Methodology course, participants were asked to consider various inquiry-based approaches to teaching.



In addition to interactions with MSU faculty, the TUGraz faculty had the opportunity to meet and work with faculty from other disciplines. The cross-disciplinary relationships formed during the institute are one of the many benefits for the host faculty members.

For the MSU team, the three weeks were eye-opening. The team learned about higher education in Austria and was challenged to consider appropriate techniques for preparing university faculty (many of whom were already fluent in English) to refine their skills. In fact, though the program is called Teaching in English, the discussions and conversations were often not about the use of the language, but were more often about the nature of research and teaching in international settings. All in all, the program was mutually beneficial to the TUGraz and MSU teams and will undoubtedly lead to further collaborations and opportunities. ♦

CSAM Offers Courses in Ho Chi Minh City

by Robert Taylor, Earth and Environmental Studies

I was awarded a VEF grant to teach a course, "Current Issues in Sustainability Science: Technologies and Strategies for Climate Change Adaptation in Cities" from February to July 2013 at Ho Chi Minh City University of Natural Resources & Environment (HCMUNRE). HCMUNRE is one of two national universities that are under the national Ministry of Natural Resources & Environment, the governmental agency in Vietnam responsible for regulating and managing the natural environment. I arrived in Vietnam on December 13, to deliver a research paper, "Urban Rooftop Hydroponics for Sustainable Cities in the Tropics," at their First Conference on Science & Technology.

My main responsibility was to offer the course. I taught the course in English to student with a command of the language. The course produced a global classroom between graduate students at MSU and my graduate students (mostly professors teaching at local universities) at HCMUNRE. My host university acted as a Facilitator to organize and administer the course on their campus. Students were enrolled in an on-line graduate course at MSU entitled "Current Issues in Sustainability Science" which was linked to the face-to-face class offered at HCMUNRE. The two courses covered the same theme; i.e., projects, strategies and technologies that can be used to adapt to the future impacts of extreme weather. Students in the U.S. concentrated on issues

pertinent to the New York-Northern New Jersey Metropolitan Region while students in Vietnam investigated problems caused by extreme weather in Ho Chi Minh City. For many sessions, the two classrooms were linked through video conferencing using Blackboard Collaborate and Skype.

Students were separated into six research teams with the goal of developing a Pilot Project or practical solution to an important issue relating to climate change adaptation in their metropolitan region. The research areas were the same but the projects were, of course, much different. The MSU research team areas were: Land Use planning and engineering for Climate Change Adaptation; Green Building Technologies for Climate Change Adaptation; Community-Based Computer Information Systems for Climate Change Adaptation; Transportation Infrastructure Technologies for Climate Change Adaptation; Green Infrastructure Technologies for Climate Change Adaptation; and Urban and Site Design Technologies and Strategies for Climate Change Adaptation. The Vietnam teams researched and presented on: Flooding Reduction Plan along East-West Avenue in HCMC, Caravelle Hotel Greenhouse Gas Inventory and Sustainability Plan, Establishing a Computerized Information System for Green Building in HCMC, Integrating Metro Line 2 into local Land Use and Transportation, Green Infrastructure

Plan for Areas along the Rach Lo Com Canal, Nhieu Loc Canal as a Design Model for Climate Change Adaptation.

A second major activity undertaken was to present 5 training workshops to governmental officials, academics and other professionals based on the basic themes of the course. These workshops were designed to spread the information and technologies related to the course to a broader audience. Each workshop was attended by 50 people, the established limit imposed by HCMUNRE. To accommodate those with a limited level of English language proficiency, an interpreter was utilized during the workshops. I shared presentations with professionals from all over the world, including D. Robbins of RTI on wastewater management systems and Dr. Carandang of the Philippines for urban hydroponics. Two others made presentations through Skype on LEED projects in the U.S. and on green infrastructure projects in NJ.

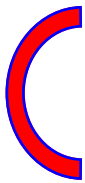
Over the course of five months I was able to connect with research groups in Ho Chi Minh City interested in developing the capacity of utilizing urban rooftops for agriculture which would allow for urban food security and reduce the urban carbon footprint. At present, I am working with city planners and other professionals in Ho Chi Minh City to develop an urban agricultural plan for food security for metropolitan region. ♦

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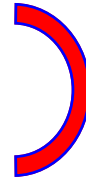
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CENTER FOR ENVIRONMENTAL AND LIFE SCIENCES



WHERE

Now Under Construction

DISCOVERY



Site Preparation
AUGUST 2013

Excavation
AUG-SEPT 2013



AND



Laying the
Foundation
SEPT-OCT 2013



Steel in the
Ground
NOV 2013

INNOVATION



Floors taking shape
mid-Nov 2013

MEET

AND, IN 2015



Construction photos by R. S. Prezant

Continued from page 1—CELS Groundbreaking

"wet labs" and will focus on informatics, genomics, and modeling. Life sciences and pharmaceutical science laboratories will be concentrated on the fourth floor and mirror the third floor's plan of four major research laboratories connected by open support areas designed to enhance shared studies. There will also be additional research space for incubators. The building will have a "green roof" above the second floor that will be used as a study site and retreat. The building is being partially funded by the State of New Jersey, and will boost both the state and local economies by creating 1,500 construction and support jobs. In April, the University was awarded State bond funding from the \$750-million "Building Our Future" Bond Act that was approved by New Jersey voters in November 2012.

The official groundbreaking for the Center for Environmental and Life Sciences (CELS) and 143,000 square foot School of Business building took place on sunny and bright September 25. The ceremony was presided over by President Susan A. Cole with state legislators, construction officials, local dignitaries and hundreds of members of the University community in attendance. The ceremony concluded with remarks from the legislators and Student Government Association President G Juzdan, speaking on behalf of the entire MSU student body, followed by College of Science and Mathematics Dean Robert Prezant and School of Business Dean E. LaBrent Chrite circling their students-clad in white and red t-shirts, respectively—in front of a pair of front end loaders representing the two

new buildings. The vehicles raised their earth-filled buckets to mark the start of construction and set off a rousing ovation from all in attendance.

Faculty, invited guests, and select students joined the university administration at a formal luncheon where both deans delivered their vision of the building, its long awaited reality and its importance in educating and preparing our majors. Ms. Padmini Das, a doctoral candidate in Environmental Management (pictured right), spoke on behalf of all CSAM students of the need and planned use of the building.



Even though the ceremony marked the official start of construction on the two buildings, work had actually been ongoing since August. (see photos on page 6). Dean Robert Prezant points out that the job of paying for the projects isn't yet finished. "We remain in fundraising mode," he says. "This funding doesn't cover the total cost of the projects. When that shovel went into the ground, this mission of ours to grow the college will become true in a very real way. It will help the students and faculty, and will play a big part in helping us find new ways to grow our relationships with the corporate partners who have been so supportive of our programs to this point." ♦

New Degree Programs Launched in Sustainability Sciences

The Department of Earth and Environmental Studies is pleased to announce new baccalaureate (BS) and master (MS) degree programs in Sustainability Science, a combined BS/MS dual degree program, and a Professional Science Masters (PSM) in Applied Sustainability Science. Our programs focus on the intersection of science and public policy and explore the ways and means of supporting healthy and vibrant human societies in concordance with planet Earth's natural systems and environmental carrying capacity.

Our combined BS/MS program is one of a kind in the State of New Jersey,

allowing students to complete two degrees in 5 years while participating in cutting-edge research. Our program in Applied Sustainability Science is affiliated with the Professional Science Masters (PSM) National Office, and provides a new type of graduate degree in which students pursue advanced training in a science, technology, engineering, and mathematics (STEM) discipline along with program components that foster professional development and workplace skills.

Our Sustainability Science programs are housed in the Department of Earth and Environmental Studies, with participating faculty in the

Departments of Biology and Molecular Biology, Anthropology, and the School of Business. Our research-active faculty provide opportunities for advanced research and professional development in fields as diverse as bioenergy technologies, sustainability planning and management of cities, modeling and analysis of forest and agricultural markets and urban housing markets, climate change adaptation, flood prevention, bioremediation, and ecosystem restoration and management.

Please contact Dr. Robert Taylor <taylorr@mail.montclair.edu> for more information. ♦

Grasslands, Deserts and Electrical Bikes

China has a population that is more than four times that of the United States and is facing some serious environmental problems in both its urban centers and the extensive landscapes that support them. For example Beijing's infamous winter 2012 "Airpocalypse" - when the air quality index (AQI) on a scale of 0-500 reached a historic 755 - was owing as much to soot sources outside the city as to traffic congestion (that is currently the worst in the world). The way that China deals with these problems will have global significance: since the late 1980s its economy has been fueled by vast manufacturing and export sectors that are largely supported by highly polluting coal-fired power. In 2007 I and Xiaoming Qi, a Chinese geographer, published research on the expansion of urban areas in the Yellow River zone of Inner Mongolia Autonomous region in northern China. They used a series of U.S. satellite night-time lights images for the period 1992-2003 that showed the emergence of a semi-continuous lit zone extending along the River, driven by urbanization, an expansion of manufacturing, and the ready availability of abundant coal in the nearby Ordos region.

Can China convert to a less polluting, low-carbon economy even as it modernizes rapidly and meets the greatly raised expectations of its citizens? The answer is currently unknowable but it is clear that tangible efforts are being made. During a recent visit to the provincial capital Huhehaote, I witnessed large investments in renewables with mile upon mile of wind turbines over grazing lands; solar thermal water heaters visible on the rooftops of many houses and apartment complexes, and photovoltaic panels used with small wind turbines to power street lighting. It also became clear that

although many Chinese citizens are now driving cars (including Cadillacs, Audis, Mercedes, and Porsches), for a good proportion of city dwellers electric-powered bicycles or scooters are the main transportation modes, with fewer using human-powered bikes. The good news is that electric bikes are extremely efficient in terms of their energy use: only 25 kWh per 100 miles per person (including production) vs. 55 kWh for the same trip by bus and 300 kWh by small sedan car. The bad news is that China has followed the West into an unsustainable automobile-based culture that results in suburbanization, ghettoization, traffic congestion, and off-the-chart AQI values. It remains to be seen whether it will be able to make important advances towards a truly sustainable future, or whether it will continue to run its economy on coal and oil.

Outside the capital, I made field visits to the Xilingol grasslands that are important to China's livestock industry, a region I first visited 20 years ago; and to the Kubuqi Desert in the Ordos region where extensive afforestation efforts have been made with the goal of stabilizing desert soils. The Xilingol trip provided evidence of improvements in the condition of these semi-arid grasslands, possibly as a result of compensated set-aside/seasonal grazing programs and restrictions on the numbers of sheep and goats (more destructive than cattle because they nibble plants right down to the soil). The Xilingol grasslands have suffered widespread overgrazing over the last 50 years, with reductions in grass cover leading to the spread of invasive plants and soil erosion. However, the new management strategies of set-aside/seasonal grazing and restricting sheep and

goat densities seem to be resulting in a recovery, though monitoring over a longer period is needed to be sure that this is not a temporary change owing to favorable rainfall over the last few years.

The trip to the Kubuqi Desert revealed extensive afforestation and other stabilization efforts along the margins of hundreds of kilometers of newly-constructed interstate-type highways in and around the Kubuqi Desert, and further afield, contributing to broader efforts across arid and semi-arid N. China under the "Three-Norths Shelter Forest Program". However, the use of trees is controversial because their deeper roots take what little moisture is available, lowering the water table; and trees do not survive easily in deserts (areas where rainfall is lower than 250 mm, or 10 inches, annually). Another stabilization method witnessed is the insertion of sticks into the sand with ~25 cm left sticking out, forming a grid with an interval of about 1 meter. This is a remarkable thing to see at scale - it must take many millions of man-hours to cover even 50 km of roadway on both sides - but such inter-



Straw grid laid to stabilize the dunes, together with shrubs and forbs in the interstices.

ventions do help to prevent sand from covering highways and other important infrastructure. Stabilization grids may prove better options than trees, especially where native shrubs with lower water requirements are planted inside the grid.

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TechLaunch Future Scientists Competition

In conjunction with the University's annual Student Research Symposium, the College of Science and Mathematics (CSAM) hosted its first TechLaunch Future Scientist Award competition on April 20, 2013. The purpose, according to CSAM's Dean Robert Prezant, "is to motivate high potential undergraduate science students to demonstrate their skills at explaining their research projects to an audience outside of academia and the sciences."

Each of the five CSAM department chairs selected two or three students with high quality research projects in the following disciplines: biology and molecular biology, chemistry and biochemistry, earth and environmental studies, and computer science and information technology for a total of twelve posters and presentations.

Twelve professionals from industry judged the students' poster presentation style and most importantly their

ability to make their research understandable and interesting.

Mr. Mario Casabona, CEO of TechLaunch, New Jersey's investor-led technology accelerator, presented Nadia Shaikh with \$1,000 first prize for her poster presentation, "Potential usage of tea polyphenols in controlling endospore germination in *Bacillus cereus*, *B. megaterium* and *B. subtilis*," co-authored with Umme Habiba, Nozrin Laskar and MeyLyn Vasquez and guided by Dr. Lee Lee.



L to R: Casabona, Shaikh, Prezant, Chalet, Burke

In addition to the TechLaunch award, two of the judges offered \$500 each so that two more excellent presenters-



GeorgeMarie Chalet and William Burke -- could be recognized—Chalet for her poster on "Investigation of substrate length and the thermodynamics of substrate binding for the DMNA repair enzyme, Photolyse," (Dr. Yvonne Gindt, advisor) and Burke for "Relationships and properties of product and sum connectivity indices of certain graphs," (Dr. Aihua Li, advisor). ♦



Continued from page 3—Unraveling the Economics

in the US and sorghum, pearl millet, and bamboo in India.

We are working towards identification of sustainability indicators and certification protocols for woody bioenergy, life cycle analyses for effectiveness in improving environmental impact of energy use, and developing economic models to assess policy designs that foster sustainable energy development and associated tradeoffs with other industries and environmental objectives. This collaborative effort between institutions and researchers in the US and in India addresses the second generation biofuel R&D priority area of the US – India Joint Clean Energy Center emphasizing sustainable feedstock cultivation and supply, biochemical conversion technologies for production of switchgrass based butanol with minimal environmental and socio-economic impacts. The project aims to improve feedstock production potential and quality using genomics and breeding tools and identify locally adapted cultivars and their optimization for large-scale production without

food vs. fuel trade-offs. The study will also develop biocatalysts for production of switchgrass based biofuels and optimize pretreatment and fermentation processes, develop products and applications from biorefinery waste streams that minimize environmental impact of biorefinery operations and maximize revenues. This project presents an excellent opportunity for complementary research between the United States and Indian universities as well as other government, private and non-profit organizations. Activities like seminars, webinars and scholar exchange activities are encouraging exchange of ideas and technologies focused on implementation of advanced biofuel production both in India and US. The joint effort from this project will lay foundation for a biofuels industry that will make and market butanol from switchgrass and at prices competitive with fossil fuels such as gasoline and diesel. When complete, the project will provide a working model for advanced biofuel production from this new source of renewable energy. ♦

Science and Writing—A combined Course

by Bob Reiss, Visiting Professor

Marlene was interested in “breast flattening”, a laying of hot rocks on the breasts of young West African girls, allegedly to keep them from becoming sexually alluring. Hakim worried about the effects of prescription drugs on students. Chris, a truck driver and Montclair Senior, was obsessed with an asteroid that may strike earth one day. Cory worried about head injuries to high school athletes, and Aleks, a veteran, chose therapy dogs and combat veterans. Each student picked a different subject, one that meant something to them.

Passion was the starting point for two classes I taught last spring on writing about science, nature and the environment. The purpose was to teach students to translate their interests into professional quality writing – articles for lay readers - not scientists or academics, but people who buy books at Barnes and Noble, or magazines in an airport, or who subscribe to National Geographic, or who learn about science or the environment by picking up Smithsonian or Outside Magazine.

We spent weeks figuring out exactly what each student was interested in doing. We role played, with students pretending to be editors, publishers and agents, analyzing each other's ideas. We read articles in collections of the best science, nature and environmental writing. We learned the

commercial marketplace, rejected bad ideas, improved good ones, and collectively, with guidance, finally gave each student the okay to go ahead.

Next step, research. The class was required to interview people, find federal reports, legislation, scientific studies and high quality experts. But since the eventual articles would contain more than just facts, students also had to dig up an entertaining story. So Cory found a student who'd been killed by a high school football injury. Hakim shared a tough personal family tale. Marlene, via Skype, tracked down and interviewed people in West Africa. Aleks spoke to veterans who'd had horrible experiences, and difficulties adjusting to civilian life, and finally, were helped by the love of a dog. And Paul, whose mom died of cancer during the semester, went after his enemy in an essay. “I know you,” it began.

I come from the world of professional writing. What I know is that in 2013,



the art of writing is in danger everywhere, not just at schools. Throw in TV, internet, texting, and general all around attention deficit disorder, and many students believe that the need to write well is not as important as it used to be. So what to do? How to get them interested? How to encourage the art? I hoped that their own passion would be the gate, and that the courses we shared last spring would be a test.

In the end the difference between early and late drafts was profound. The writing got better, and several students indicated that they planned to keep pursuing their subjects once the semester was through. By learning how to appeal to a general audience they got in touch more closely with their own latent interests.

I know that my world expanded after reading their work. Now because of Chris's writing I wonder about that asteroid. Because of Kathy's, I'm aware of the world of 3-D printers. Thanks to Matt, I think more about steroid use among college athletes. All of my students, through their beginning attempts to reach a mass audience – some good, some bad, but all improving - reached me. Perhaps one day you'll see one of their bylines in a magazine. Perhaps you'll see a Montclair student's name in big letters on the cover of a book. ♦

Continued from page 8—Grasslands, Deserts and Electrical Bikes

The changes in China's urban and rural landscapes over the last few decades have been truly remarkable



Global Positioning System reading near trees and shrubs in the Kubuqi Desert, Ordos region.

and present many challenges for effective environmental management, not least because of the scale involved. The Xilingol grasslands and Ordos deserts cover very large areas: Xilingol alone covers about the same area as ten New Jerseys. This means that satellite remote sensing and geographic information systems (GIS) technologies are essential tools for mapping, monitoring, and measuring, since “you can-

not manage what you do not measure.” These tools allow us to track the condition of grasslands and afforested desert areas over large areas and through time; and high resolution imaging coupled with socioeconomic data in GIS databases allows us to see how and why cities and industries are expanding, not just that they are. More information and detailed article video available at <https://vimeo.com> ♦

Research in Barcelona

by Felix Dailey Sterling, BS'14

Over the summer of 2103, I was granted the opportunity to be one of ten undergraduate students selected to conduct neurology research abroad. This opportunity was made possible through the Minority and Health Disparities International Research Training (MHIRT) Program at New York College at Old Westbury. The MHIRT Program is a component of a long term strategy to establish a cadre of biomedical, behavioral, and social science researchers working to reduce the disparate health burdens among underserved populations in the United States and ultimately eliminate those disparities. Traveling to Barcelona, Spain, I had the opportunity to work with Drs. Cristina Suñol, Director of the Instituto De Investigaciones Biomedicas, and Mathieu Lichtenstein. Dr. Lichtenstein served as my mentor as we investigated the effects of methyl mercury, endosulfan and dieldrin on astrocytes and neurons.

Methyl mercury is an organic metal neurotoxin found in fish and Dieldrin and endosulfan are organochlorides found in pesticides. Using the data gathered from various different assays, I was able to write a research paper about my findings. The MHIRT program lasted for two months and during that time I explored the city of Barcelona and traveled to Italy and France, met many amazing friends and experienced an amazing summer that I will not soon forget. ♦



Felix, second right, with lab mates

Student News

Biology and Molecular Biology students **L. Araya**, **P. Dolcemascolo** and **T. Snyder** presented "Population study of pond turtles using mark-recapture methods" (co-authored with Drs. L. Hazard and K. Monsen-Collar at New Jersey Academy of Science Annual Meeting, South Orange, NJ.

Center for Quantitative Obesity Research students, **Yasmin Begum**, **Tasnia Aftab**, **Sharmin Uddin**, **Yuna Maeda** (Biology), **Kaitlyn Marshall** (Nutrition), and **Mirna Halawani** (Mathematics) presented two posters titled "Comparison of dynamic model predicted and actual weight gain during overfeeding: An energy balance analysis" and "The relationship between exercise type, exercise dose, and body roundness" at Experimental Biology 2013, Boston Massachusetts.

A.M. Calichio delivered a group-prepared presentation (with R.L. Burke, and L.C. Hazard) titled "Analysis of diamondback terrapin (*Malaclemys terrapin*) hatchling adaptations to marine and terrestrial habitats" at the Northeast Partners in Reptile and Amphibian Conservation Annual Meeting, Branchville, NJ.

Computer Science student **Zill Christian** won the Best Machine Learning

Application Award at the 2013 Hackathon at MIT (HackMIT). Zill developed a WebRTC to differentiate between objects in front of the webcam using skills learned in Dr. Aparna Varde's CSIT440 class.



Dr. AnnMarie DiLorenzo (above center) informally gathered her past, present and future research students to plan for future projects to learn more about the effects of World Trade Center dust on human lung cells in culture.

Paola Dolcemascolo, was recently awarded an Executive Women of New Jersey PSEG Graduate Merit Award for \$5000. Ms. Dolcemascolo is completing her Ph.D. research in Environmental Management in Dr. K. Monsen-Collar's lab on the population and conservation genetics of northeastern herpetofauna including diamond back terrapins and green tree frogs. She recently completed teaching a highly successful herpetology

workshop at the New Jersey School of Conservation.

Melissa Harclerode (PhD student in Environmental Management), under the supervision of Dr. P. Lal, gave oral presentation at the Battelle Bioremediation and Sustainable Remedial Technologies Conference titled "Estimating societal impacts of a Remediation Project's life cycle using Environmental Footprint Evaluation Tools."

Megan Elizabeth Helse took First Place Undergraduate Award from Society of Women Environmental Professionals. Megan is a senior majoring in Biology.

Pricila Iranah (PhD student in Environmental Management), under the supervision of Dr. P. Lal, made two poster presentations at the 26th International Congress for Conservation Biology and at American Museum of Natural History Biodiversity and Conservation Science Symposium on Understanding Ecological and Social Resilience in Island Systems outlining her research that entails bridging gaps in biodiversity conservation policy and action through a case analysis of Mauritius.

Continued on next page

This summer the New Jersey School of Conservation and Stokes State Forest teamed up as part of a new initiative to offer joint programs for campers. AmeriCorps volunteers teamed with visitors service assistants from the state park to lead groups of campers in programs that include seminars on stream ecology (Critters in the Stream), the black bear, canoeing, as well as an evening story time around the campfire. The program's aim is to promote environmental awareness among schoolchildren.

One of the most popular sessions has been a hands-on water ecology session at Flatbrook Creek. Here the chil-

dren and adults were given sifters and encouraged to explore the area. While the class focuses primarily on macro invertebrates and invertebrates, participants usually collect a good cross-section of the creek's biodiversity. In one day, dragonflies, caddis fly larva, damselfly nymphs, crayfish, a freshwater clam and two turtle eggs were collected.

The sessions have become popular and were covered by the New Jersey Herald in a June 14 article. The following excerpt sums up the program perfectly:

Wen-Ling Lai was among the parents who brought her two children, Anna

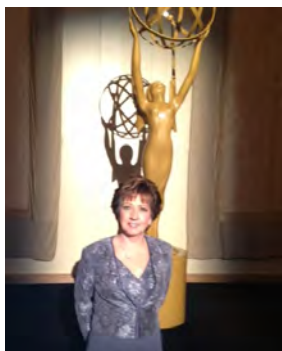
Tillisch and Geoffrey Tillisch, ages 10 and 7, to the seminar. Lai said she appreciated the proximity of the forest, and that her children love the outdoors and digging into the dirt. It's important to let the community know about these types of programs," she said. There's no better way to connect with the environment." ♦



NJSOC AmeriCorps member, Bobby DeMarinis, instructing campers on how to safely paddle a canoe.

Dr. Ives: Emmy Nominee

The National Academy of Television Arts & Sciences (NATAS) announced the 40th Annual Daytime Emmy Awards to be held in June. This year, Get the Math was nominated for "Outstanding New Approaches – Original Daytime Program." Montclair State University Visiting Assistant Professor and Coordinator for Math Education Student Teachers, Deborah Ives, Ed.D., received the nomination as Lead Content Advisor, along with Jill Peters, Executive Producer, and Michelle Chen, Producer, two directors and an editor from



PBS/WNET. Dr. Ives attended the Awards Reception and Ceremony on June 13-14 in California.

The overall goals of Get the Math are to help students integrate, connect, and apply skills, concepts, and mathematical practices of both the Common Core Standards for Algebra and deeper learning competencies, including Standards for Mathematical Practice with a focus on reasoning and sense-making. Get the Math combines

video and web interactivity to help middle and high school students develop algebraic thinking skills for solving real-world problems. Drawing on conventions of popular reality TV shows, video segments begin with profiles of young professionals, who then pose challenges connected to their jobs to two teams of teens. Viewers are encouraged to try the challenges themselves using teams' solutions. Students can the same, as well as extended algebraic concepts through additional interactive challenges on the website. ♦

Continued from page 11—Student News

Gin Dean Sanchez (PhD student in Environmental Management), under the supervision of Dr. P. Lal, gave an oral presentation at the New Jersey Academy of Science Annual Meeting titled "Economic and environmental analysis of solid waste management in Dominican Republic."

Environmental Management doctoral student **Natalie Sherwood** received a \$5000 award from NJ Water Resource Research Institute.

Masters student **Kelly Triece** received \$2000 for First Place Graduate Award from NJ Society of Women Environmental Professionals.

Casey Schuckers (left with CSAM Career Services Director Hinson) was the recipient of the MSU Career Services & Cooperative Education Student of the Year Awards 2013. She interned as Athletic Trainer at Morris Catholic H.S. as a physical rehabilitation and nutritionist for game meals.

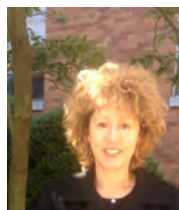


T.J. Snyder presented "Habitat use and population demographics of two aquatic turtles species in a temperate forest lake," co-authored with P. Dolcemascolo, L.V. Araya-Jara, L. Hazard, and K.J. Monsen at the Society for Integrative and Comparative Biology Annual Meeting. ♦

CSAM Welcomes New Hires



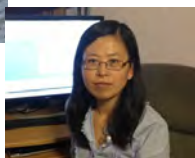
Constantine Coutras – Professor and Chair,
Department of Computer Science
B.S. University of Patras, Greece.
M.S. Rochester Institute of Technology
Ph.D. Illinois Institute of Technology



Shari Ferguson Murtha, Academic Advisor, Dean's Office
B.A. Rowan University
M.Ed. The Pennsylvania State University



Christopher Leberknight – Associate Professor,
Department of Computer Science
B.S. Rutgers University
M.S., Ph.D. New Jersey Institute of Technology, Newark



Xianna Li – Analytical Instrumentation Specialist,
Department of Earth and Environmental Studies
B.S., M.S. Ocean University of China
Ph.D. Stony Brook University



Nicole Panorkou – Assistant Professor,
Department of Mathematical Sciences
B.S. University of Cyprus
M.S. University of Warwick (UK)
Ph.D. Institute of Education, University of London (UK)



Adam Parker, Laboratory Equipment Technician,
Department of Biology and Molecular Biology
B.S. Anglia Ruskin Univ. Cambridge UK



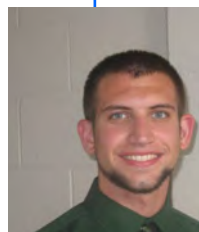
Angela Pena – Department Administrator,
Department of Computer Science
B. S. The Andes Peruvian University, Peru
M.S. Montclair State University



Diane Prince – **Administrative Assistant**, Dean's Office
A.A., Katharine Gibbs School, Boston MA



Petra van 't Slot - Instructional Specialist,
Department of Chemistry and Biochemistry
BSc - Wageningen University, The Netherlands
MSc - Wageningen University, The Netherlands



Andrew Wiese, Web Manager, Dean's Office
B.S. Montclair State University

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Seven Faculty Receive Promotion

The College of Science and Mathematics congratulates the following faculty on their well deserved promotions effective September 2013:

- ***Charles Du**, Biology and Molecular Biology, to Professor
- ***Stefanie Brachfeld**, Earth and Environmental Studies, to Professor
- ***Shifeng Hou**, Chemistry and Biochemistry, to Associate Professor
- ***David Konas**, Chemistry and Biochemistry, to Associate Professor
- ***Mika Munakata**, Mathematical Sciences, to Professor
- ***Elena Petroff**, Biology and Molecular Biology, to Associate Professor
- ***Aparna Varde**, Computer Science, to Associate Professor

Kudos

Montclair State University has received two awards from the NSF Robert Noyce Teacher Scholarship Program. The first is \$1,447,272 to provide scholarships, stipends, and programmatic support to recruit and prepare STEM majors and professionals to become K-12 teachers with Drs. **Sandra Adams** (P.I. CSAM) and Doug Larken (Co-P.I. CEHS). The second is to 'Prepare the Effective Elementary Math Teacher' for \$225,803 with Drs. **Steven Greenstein** (P.I. CSAM), **Erin Krupa** (CSAM) and Jennifer Robinson (CEHS).

PIs Drs. **Katherine Herbert**, Donald MacVeigh, Thomas Marlowe, **Emily Hill**, and **Jerry Fails** received a NSF S-STEM \$624,540 (2013-2018) grant for "Networking and Engaging in Computer Science and Technology in Northern New Jersey Program."

PSEG Institute for Sustainability Studies received \$30,000 for the project titled "Towards a Mobile Exploratory Research and Data Analytics Platform for Environmental & Ecological Sustainability Studies," with Drs. **Emily Hill** and **Katherine Herbert** as co-PIs.

Dr. **Pankaj Lal** received \$51,246 subaward from the US Department of Energy and the University of Florida for the first year of "US-India Consortium for Sustainable Advanced Biofuels System."

Dr. **Sandra Passchier** is PI on a three-year NSF-OPP award, "The Stratigraphic Expression of the Onset of Glaciation in Eocene-Oligocene Successions on the Antarctic Continental Margin," for \$118,937. She was invited to become one of a twelve-member US Advisory Committee for Scientific Ocean Drilling (USAC), the national advisory committee for US participation in the International Ocean Discovery Program (IODP). As a 2013-2014 Distinguished Lecturer for the International Ocean Discovery Program, Dr. Passchier will provide lectures at seven U.S. universities and an aquarium.

Dr. **John Siekierka** received a renewal grant of \$208,000.00 Celgene Drug Optimization program, and a \$166,475 NSF TUES Type 1 award (with Drs. **Nina Goodey** and **Jim Dyer**) for "Incorporation of research skills into the for the modern research environment."

The New Jersey Conserve Wildlife Matching Funds Grant awarded Drs. **Kirsten Monsen** and **Lisa Hazard** a \$3,500 grant to study the "Prevalence of the *Batrachochytrium* and *Ranavirus* pathogens among New Jersey amphibian populations."

Dr. **Marc Favata** was awarded a \$126,000 NSF grant, as PI, for "RUI: Issues in modeling gravitational-wave sources" for FY2013-2016.

Dr. **Yvonne Gindt** is co-PI on a funded NASA grant (with PI R. Stanley, Temple University) to study DNA repair under extreme conditions.

Dr. **Diana Thomas** received an award from The Mathematical Sciences in Obesity Research to fund an annual week-long (2013-2018) short course that brings together investigators from the mathematical sciences and obesity research to encourage and train graduate and postdoctoral students to collaborate across disciplines.

The Defense Threat Reduction Agency and the Department of Defense awarded Dr. **David Rotella** \$2.5 million project, "Multicenter Program for Developing Treatments for Botulinum Neurotoxin Intoxication," a collaborative drug discovery program that will be carried out by researchers at Montclair State, the US Army Research Institute for Chemical Defense, Brookhaven National Laboratory, Naval Research Laboratory, University of Massachusetts and Ossianix Inc.

Dr. **David Rotella** is the recipient of two grants: "Protein

Continued on Page 17

Faculty News

Dr. **Marc Favata** signed a MOU with LIGO Scientific Collaboration (LSC) to form the Montclair Gravitational Wave Group. As group PI, he was appointed to the LSC Council which governs membership and other decisions of the LSC. Dr. Favata presented an invited colloquium at Seoul National University and contributed talks at American Physical Society Meeting, the annual dinner of the Rockland Astronomy Club; and 1st grade class at the Bradford School.

Dr. **Nina Goody** presented hands on Chemistry Magic workshops at Pleasantdale Elementary School and at the GK-12 STEM Math and Science Day.

Dr. **Steven Greenstein** presented "Adapting a STEM teacher preparation program for context and cultural resonance" at the 7th Annual UTeach Conference in Austin.

Dr. **L.C. Hazard** and K. Jamieson presented "Surviving salt: Impact of road de-icers on New Jersey amphibian species" at NJ Chapter of The Wildlife Society annual meeting and at the Society for Integrative and Comparative Biology Annual Meeting, "Integration of physiology and conservation: lessons from the Nagy lab" at a special session honoring Ken Nagy, and "Do ecological factors drive physiological control of a unique ion-secreting tissue, the lizard salt gland?" at the World Congress of Herpetology, Vancouver, B.C. Dr. Hazard continues her professional service serving on the Board of Directors (2013-2016) - Society for the Study of Amphibians and Reptiles, as Nominating Committee member - Society for the Study of Amphibians and Reptiles, and as Judge, Student Presentations/Posters for the Herpetologists' League Graduate Awards 2012 annual meeting. She is journal referee for the *Physiological and Biochemical Zoology*, *Comparative Biochemistry and Physiology* and *Functional Ecology*. The Bergen Record

featured Dr. L. Hazard in an article in March on *Road salt alters ecosystems - Can the wood frog survive?*

Dr. **Pankaj Lal** presented his paper "Economic and environmental analysis of biofuels in Southern United States" at the Association of American Geographers Annual Meeting. He gave an invited talk at NJIT on "Economic implications of expanded forest biomass-based energy production in Southern United States". He also partook in a discussion at Second Regional Economics Network Meeting held at the Bloustein School of Planning and Public Policy, Rutgers University.

Dr. **Evan Maletsky** ('53, '54 MA), long time faculty in the Department of Mathematical Sciences, received the Distinguished Alumni Award at the 2013 CSAM Convocation.

Dr. **K.J. Monsen** presented a paper titled "A *Ranavirus*-related mortality event and the first report of *Ranavirus* in New Jersey", co-authored with Dr. L. Hazard and P. Dolcemasclo, at the Second International *Ranavirus* Symposium, Knoxville, TN.

Dr. **Meiyin Wu**, Director The Passaic River Institute, provided environmental outreach activities at: Liberty State Park, Ridgewood Middle School Super Science Saturday, Lafayette Street School, Sussex Street School, Cedar Grove Middle School, and Ocean Fun Day at Sandy Hook.

Dr. **Sandra Passchier** accepted a 2-year term as member of the Curatorial Advisory Board of the Polar Rock Repository at The Ohio State University. She gave invited talks at the MARUM-Center for Marine Environmental Sciences, University of Bremen, Germany, and the Institute for Marine and Atmospheric research Utrecht, at Utrecht University. And, she gave an invited talk at the Department of Earth and Planetary Sciences,

Rutgers University.

Dr. **Elena Petroff** delivered an invited talk on the "Effects of synthetic peptides on glial proliferation" at the Experimental Biology annual meeting. She mentored Dominic Brown, a Weston Scholar student who won the first prize at the New Jersey Academy of Sciences annual meeting for his presentation "Glial proliferation: The effect of ASIC channels and peptides" and was invited to present at the American Junior Academy of Sciences national meeting in Boston. This is the second student from Dr. Petroff's lab to achieve this honor.

Dr. **David Rotella** co-edited *Analogue-based Drug Discovery*, volume 3, Wiley VCH, 2012.

Dr. **Dibs Sarkar** professional society activities: included President of the Hudson-Delaware Chapter of the Society of Environmental Toxicology and Chemistry (2012-13), Chair, Student Scholarship Committee, International Conference on Medical Geology, Chair, Travel Awards Committee, MEDGEO 2013, Technical Editor, International Journal of Environmental Science and Technology, Associate Editor, Soil Science Society of America Journal, Associate Editor, Geosphere, Associate Editor, Environmental Geosciences, Editorial Board Member, Environmental Pollution, and Editorial Board Member, British Journal of Environment and Climate Change.

Dr. **Vladislav Snitsarev** presented "Neuro protective effects of EGCG on H₂O₂- and MPTP-stressed PC12 cells" and "Detecting structural similarity between binding domains on iberiotoxin (IBTx) and ASIC at different pH" at the. Experimental Biology Annual Meeting and "Solubility of sirolimus in aqueous solutions" at the GS-LSAMP 4th Annual Stem Conference, Rutgers University. He

Continued on next page

gave an invited presentation on the “Direct effects of glucose and fructose on proliferation and activation of Jurkat T-Lymphocytes” at the College of Medicine, University of Iowa. Dr. Snitsarev judged posters for the 45th Annual Fall MACUB Conference and reviewed Grants-In-Aid (GIA) for the NJAC Junior Division.

Dr. **Danlin Yu** was awarded the “Tianshan Scholar” Lecture Professorship by the Xinjiang Uyghur Autonomous Region, China on behalf of

School of Resources and Environment, Xinjiang University. Dr. Yu is to connect MSU with Xinjiang University for academic collaboration and students’ co-mentorship.

Dr. **Meiyin Wu** coordinated panel discussions “Challenges of climate change and building resilient communities” for the Somerset County Environmental Education Center, “Hurricane Sandy: Reflections and visions” at MSU and the MSU Passaic River Symposium V, “Today’s Status,

Tomorrow’s Perspective.”

Postdoctoral Researcher **Yingkai Xu**, presented a poster titled “Assignment of the vibrational normal modes of the isotope-labeled riboflavin neutral radical in riboflavin binding protein by resonance raman spectroscopy and computational chemistry” at the 244th National Meeting of the American Chemical Society. ♦

LSAMP Update

CSAM is proud to be a member of the Garden State LSAMP Alliance, an NSF-funded multi-institutional program that promotes academic success and the improvement of graduation rates for students underrepresented in the sciences. Prof. Carlos Molina has recently succeeded Prof. Quinn Vega as Director of the MSU Louis Stokes Alliance for Minority Participation program (LSAMP). Now in its 5th year at MSU, the LSAMP program has helped the university build a strong academic support system between students and faculty and between fellow students. Through the development of a peer network, upper division students who have been successful academically are chosen to meet with and provide academic support for struggling students and lower division students who are new to the college. Faculty members in the various departments and a graduate assistant supplement these peer networks by answering academic and career questions. Students also learn about research and career opportunities in the

sciences and mathematics through a mixture of peer and faculty presentations. LSAMP students are encouraged to take part in undergraduate research, either through summer research programs across the country and internationally and/or with CSAM faculty members.

A research symposium for the LSAMP program was held at Rutgers-New Brunswick this October. MSU LSAMP students captured two of the poster awards at this symposium.

The awardees (pictured below) were Christian Brutofsky and Mariam Abdulsalam for their poster entitled, “A Computational Study of Substituted Cyclohexanes and Tetrahydro-2H-pyrans to Evaluate the Steric and Stereo-electronic Contributions to the Conformational Energies,” and Kaba Tandjigora for the poster entitled, “Oxidation of DNA by high-valent metal-oxo porphyrins Mn-TMPyP and Fe-TMPyP.” ♦



MOU Signed with ECEC

A new Memorandum of Understanding was recently completed between Montclair State University’s Passaic River Institute and the Essex County Environmental Center (ECEC). Located in the western section of Essex County at West Essex Park in Roseland, ECEC stretches along six miles of the Passaic River, starting at Bloomfield Avenue in Fair-

field, and ending just beyond South Orange Avenue in Livingston. West Essex Park is 1,360 acres of wetlands preserve which remains almost entirely undeveloped. The PRI and ECEC have mutual interests in creating awareness, understanding, and appreciation of the Passaic River and the local New Jersey environment. This initial agreement will allow MSU stu-

dents access to the Passaic for studies that will include water quality and benthic organisms. Students may also work with ECEC to further its educational mission. ♦

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Continued from page 14—Kudos

Kinase Inhibitors for Parasitic Diseases” for \$100,000 from Celgene Corporation and \$100,000, as co-PI with Dr. Vladimir Snitsarev, from MSU Sokol Faculty Award Fund for purchase of essential research equipment.

Dr. **Vladislav Snitsarev** received a \$4,000 Proposal Development Award, with Dr. D. Rotella, from CSAM for work on the “Effects of EGCG and its derivatives on dopaminergic cell survival in Parkinson’s disease model.”

Jill Sisson-Quinn (M.A. Environmental Studies) has been named one of six 2013 recipients of the Rona Jaffe Foundation Writers Award (the only national literary award program of its kind devoted exclusively to women). Ms. Sisson-Quinn is a high school English teacher in Stephens point, WI.

The Passaic River institute (PI Meiyin Wu) received \$10,000 from the Hyde and Watson Foundation, \$10,000 from TD Bank Charitable Foundation, \$17,000 from the Landsberger Foundation, \$5,000 from Covanta Essex Company, \$5,000 from Investors Bank Charitable Foundation, and \$12,500 from the Victoria Foundation for the 2013 Passaic River Basin Eco-Explorers Program in Ecology, Environmental Science and Computer Technology. ♦

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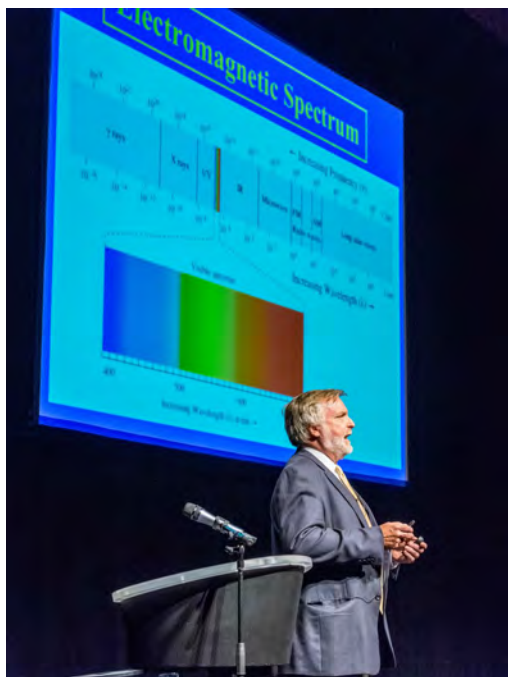
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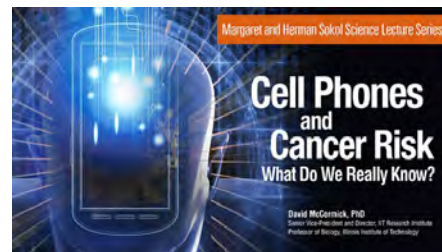
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Fall Sokol Lecture Focuses on Cell Phones and Cancer Risk



Dr. Richard McCormick

The 18th Margaret and Herman Sokol Science Lecture Series, on October 1, 2013, featured Dr. David McCormick. Dr. McCormick reviewed the findings of worldwide studies on the use of cell phones and cancer rates. He also highlighted the comprehensive experimental research underway at IIT Research Center funded by a \$25M NIH grant. The entire lecture is available at <http://www.montclair.edu/>



EVENTS:

November 14 CSAM Seminar: Dr. Fred Bonato, Associate V.P., Montclair State University
“Biomedical Challenges for Future Human Spaceflight”
Sokol Seminar Room—Science Hall 102—4:00 p.m.

November 20 GRADUATE OPEN HOUSE
University Conference Center—7th Floor University Hall
6:00 p.m.

SUSTAINABILITY SEMINAR SERIES
Sokol Seminar Room—Science Hall 102— 4 p.m.

November 12 Dr. John Reinfelder, Rutgers University “Seven Sisters: using mercury stable isotopes to track element 80 in the environment”
November 19 Dr. Xiaona li, Montclair State University “Application of phosphate oxygen isotopic Composition to trace phosphorus cycling in the agricultural soils”
December 3 Ray Germann, Lower Passaic Cooperative Parties Group “A Sustainable Remedy for the Lower Passaic River”

Upcoming Spring 2014 events

April 3 PharmFest: The Future for Pharma in New Jersey: A Look at the Next 10 Years
April 12 8th Annual Student Research Symposium
May 1 Spring Sokol Science Lecture Series: “Human Genomics a Decade after the Human Genome Project: Opportunities and Challenges:” - Eric D. Green, M.D., Ph.D.,
Director of the National Human Genome Research Institute at the National Institutes of Health