



VOLUME 13 / 2016 - 2017

# Research Newsletter

## From the Interim University Vice Provost for Research...



Starting in my new role in service of CUNY's mission to provide "access and excellence in higher education" has been nothing short of extraordinary. Beginning in August last year, I stepped into an office at CUNY Central, which offers sweeping views of the iconic Daily News Building on 42nd Street (yes, where Superman was filmed!) and a distant glimpse of the Frank Gehry-designed Spruce Street tower at the base of the Brooklyn Bridge. This office is now my CUNY home, where I serve in a newly restructured position at the University Vice Provost level, to support CUNY's diverse and far-reaching re-

search and scholarly enterprise across all fields and disciplines. With the arrival of Dr. Eric Shipp, the Deputy Executive Director of the CUNY Advanced Science Research Center (ASRC), the duties of my office are now distinct from the leadership of the ASRC, and I am set to

work and dedicate myself to university-wide research initiatives and projects.

Born in Hungary, and trained as a behavioral ecologist and ornithologist at Yale, Cornell, and Berkeley, I came to CUNY eight years ago from a faculty position at the University of Auckland, New Zealand to join the Animal Behavior and Conservation Master's program in Hunter College's Department of Psychology. With the support of grants from the Human Frontier Science Program, the National Science Foundation, and the National Geographic Society, I went on to publish over 150 peer-reviewed articles during my Hunter ten-

ure, most of them co-authored with CUNY students and collaborators from around the globe. Research, discovery, and the pursuit of the unknown are at the heart of why I chose an academic career, and disseminating new knowledge to students in the classroom and to the broader public beyond the ivory tower are a central motivating factor for my ongoing scholarly pursuits. While serving as Hunter's Associate Provost for Research, my efforts increasingly focused on working with colleagues. I now relish the opportunity to support my peers across CUNY in their professional development. At the CUNY Office of Research, we can accomplish this by helping researchers apply for new grants and to initiate and complete scholarly and creative projects. We can also foster interdisciplinary collaborations within and between the arts, humanities, social sciences and the STEM disciplines.

At the CUNY Office of Research, our mission to promote research in the arts and sciences, to encourage innovation in technology commercialization and experiential learning, and to maintain research account-

ability and compliance is entering a new phase: as this office becomes more thoroughly integrated into the activities and initiatives of the Office of Academic Affairs, under the leadership of University Provost Vita Rabinowitz, we also follow a familiar pathway. In service of Chancellor JB Milliken's strategic framework for a "Connected University" within and beyond the New York community, our aim is to work with the Research Office's extraordinary staff to support CUNY's students, faculty, and other researchers to generate new knowledge and to apply it for the benefit of society at all levels. I invite you to share with us your latest news and discoveries, so that CUNY Research can fully stretch its wings in the eyes of our own community and beyond.

**Sincerely,**  
**Dr. Mark E. Hauber, Interim University Vice Provost for Research, CUNY**

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## Contents

Faculty accomplishments  
Pages [2 - 3](#)

Institutional news  
Pages [6 - 7](#)

Student news  
Page [8 - 10](#)

Research Office news  
Pages [11 - 16](#)

Faculty funding and publication news

New leadership at the Graduate Center

Undergraduates pursue research in the Gulf of Mexico

2016 CRSP Symposium, IRG and CCRG grant winners announced!

## Cuny Biologists Use Lizard Genome to Assess Impact of Climate Change

A team of CCNY biology researchers led by Drs. Ana Carnaval and Mike Hickerson have uncovered valuable new information about the impact of climate change on the distribution of animal populations in South American forests. Their study, “Inferring responses to climate dynamics from historical demography in neotropical forest lizards” published in the July 19, 2016 issue of the Proceedings of the National Academy of Sciences (PNAS) (vol. 113 no. 29 Ivan Prates, 7978–7985, doi: 10.1073/pnas.1601063113), used genomic data from three lizard species that are widespread in the Amazon and Atlantic forests to find out if, and how, populations expanded or contracted in response to changes in precipitation over the last 200,000 years.

“We saw that as the forest has changed, lizard populations have also changed. Yet, different lizard species showed either expansions or contractions, suggesting that responses to climate change are not the same for every organism,” said Ivan Prates, a PhD student in the Carnaval Lab at CCNY and the Graduate Center. He is the first author of the study. The project, funded by the NSF, NASA, and the São Paulo Research Foundation (FAPESP) has led to improved methods for modeling the distribution of biodiversity across time.

PNAS

## A VISION FOR THE FUTURE OF PLANT SCIENCE RESEARCH



New technologies are redefining how plant biology will meet the demands of health, medicine, energy, and agriculture. These innovations are described in a special issue of Science (September 16, 2016) devoted to Translational Plant Science. The article, “Plant metabolism, the diverse chemistry set of the future” by **Dr. Eleanore T. Wurtzel** (Lehman College and The Graduate Center, The City University of New York, NY) and Dr. Toni M. Kutchan (Donald Danforth Center, St. Louis, MO), is one of a collection of four articles highlighting a vision for the future of plant biology and its potential impact on society.

In their review, Drs. Wurtzel and Kutchan examine technologies that are transforming the study of plant metabolism and how we can leverage the resulting knowledge to cultivate the plants and chemical-producing microbes of tomorrow. In particular, the authors detail the impact of rapid and inexpensive DNA and RNA sequencing

and of metabolite detection on the discovery of biochemical pathways, which in turn inform the engineering of plants to improve nutrition and to provide more plentiful and cheaper medicine.

Dr. Wurtzel, whose own research seeks to alleviate vitamin A deficiency in the 250 million children worldwide at increased risk of blindness and death, said, “The plant kingdom offers an untapped bounty of novel chemistry, enzymes and genes that are poised for discovery and application using advanced technologies. Investment in plant science research and education, involving interdisciplinary partnerships, will accelerate scientific advances needed to transform the fields of health and nutrition, bioenergy, and agriculture.”

Dr. Joseph Hirschberg (The Hebrew University of Jerusalem) said, “This is an important and authoritative review on the potential of “specialized metabolism” (also referred to as “secondary metabolism”) of plants to benefit mankind. The authors are world-leading scientists in the field who have made seminal discoveries in plant biochemistry. This review article will serve as a benchmark and a road map for future research and development in biotechnology, medicine and nutrition.”

Throughout history, humans have used plants for food, medicine, fuel, and materials for clothing, paper, and shelter. Advances and investment in translational plant science will ensure that we can further harness the chemical wealth of the plant kingdom to help meet the needs of a growing world population.

## SPH INVESTIGATOR RECEIVES MAJOR FUNDING FOR DATABASE TO EVALUATE AIDS IN AFRICA

**Dr. Denis Nash**, Professor at the CUNY School of Public Health recently received a substantial award from the National Institutes of Health (NIH) to fund the International Epidemiologic Databases to Evaluate AIDS (IeDEA). This project is jointly led by Dr. Nash at CUNY and Dr. Kathryn Anastos at the Albert Einstein College of Medicine. The IeDEA Central Africa Regional cohort collaboration is a 5-year \$9.4 million observational study of patients receiving HIV care in Central Africa. The study includes 46,094 HIV-infected adults and children from 15 sites in Rwanda, Cameroon, the Democratic Republic of Congo, and Burundi.

## TWO HUNTER FACULTY RECEIVE NEH AWARD TO SUPPORT VETERANS



Two Hunter College faculty members, Drs. **Christa Acampora** (Philosophy) and **Mariann Weierich** (Psychology) were awarded \$90,594 from the National Endowment for the Humanities (NEH) in 2016 for a project entitled, *The Experience of War: Moral Transformation, Injury, and Repair*. The grant was awarded under the agency's new Dialogues on the Experience of War program that aims to engage the



humanities in promoting understanding of the military experience and in supporting returning veterans. Hunter College will fund public events and classroom opportunities for veterans, students, and non-student members of the community. Participants will explore classic works of literature, history, and philosophy to illuminate moral transformation, injury, and repair resulting from the experience of war.

## THE POWER OF UNDERGRADUATE RESEARCH

Involving undergraduates in faculty-led research projects is a common endeavor at colleges and universities because it is a high-impact educational practice. But exactly how 'high-impact' are undergraduate research experiences? New findings from Dr. Anthony Carpi and colleagues from John Jay College of Criminal Justice now show that undergraduate research experiences can lead to changes in career choices especially for minority Black and Hispanic students. The new study uses case studies to analyze undergraduate research experiences in the context of Social Cognitive Career Theory, where self-efficacy and outcome expectations influence goals and actions.

The new study, which is published

in the *Journal of Research in Science Teaching*<sup>1</sup>, is based on work that Carpi and colleagues have been doing since 2001, when they devised the Program for Research Initiatives in Science and Math (PRISM). Notably, institutionalizing undergraduate research has had a positive impact on faculty participation as well as student participation (and graduation!) and is correlated with increased grant funding for research at the college. These findings demonstrate in a concrete way that engaging in undergraduate research really is "high-impact."

The article is open access and can be found here: <http://bit.ly/2bvV2Xu>

1. Carpi, A. Ronan, D. M., Falconer, H. M. and Lents, N. H. (2016). *Cultivating Minority Scientists: Undergraduate Research Increases Self-Efficacy and Career Ambitions for Underrepresented Students in STEM*. *J. Res. Sci. Teaching*, in press



**Tweets you may have missed!**

**CUNY Research** @CUNYResearch · 8 Nov 2016  
Great night at the @BlavatnikAwards with past and current CUNY finalists Allyson Friedman, Xi Chen, Rob Anderson & Dr Jill O'Donnell-Tormey.



**CUNY Research** @CUNYResearch · 13 Dec 2016  
Revolutionary Image-Guided Device Targets Brain Regions Associated with Neuropsychiatric Disorders [bit.ly/2htbwNA](http://bit.ly/2htbwNA)

You Retweeted  
**Phys.org Biology** @physorg\_biology · 8 Dec 2016  
Researchers map neural circuitry of songbird learning [phys.org/400435153](http://phys.org/400435153) @CUNYResearch

**Researchers map neural circuitry of songbird learn...**  
How do juvenile songbirds learn to sing in a way that preserves both the unique features of local song culture and their species-specific song "signature"? Research...

**CUNY Research** @CUNYResearch · 28 Nov 2016  
The Chancellor's Research Fellowship Program is accepting applications from Community College faculty for 2017-2018. [bit.ly/2gbyJS](http://bit.ly/2gbyJS)

**CUNY Research** @CUNYResearch · 21 Nov 2016  
A huge congrats to Dr. Ilona Kretzschmar of @CityCollegeNY for being named a 2016 @aaas Fellow!

**ireka**  
AAAS and the City University of New York announce...  
Dr. Ilona Kretzschmar of the City College of the City University of New York has been named a Fellow of the American Association for the Advancement of Science...  
[eurekaalert.org](http://eurekaalert.org)

## DR. ILONA KRETZSCHMAR OF CITY COLLEGE NAMED A 2016 AAAS FELLOW!



Dr. Ilona Kretzschmar of the City College of the City University of New York (CUNY) has been named a Fellow of the American Association for the Advancement of Science

(AAAS). Election as an AAAS Fellow is an honor bestowed upon AAAS members by their peers.

This year 391 members have been awarded this honor by AAAS because of their scientifically or socially distinguished efforts to advance science or its applications. New Fellows will be presented with an official certificate and a gold and blue (representing science and engineering, respectively) rosette pin on Saturday, 18 February from 8:00 a.m. to 10:00 a.m. at the AAAS Fellows Forum during the 2017 AAAS Annual Meeting in Boston, Mass.

This year's AAAS Fellows will be

formally announced in the AAAS News & Notes section of the journal *Science* on 25 November 2016.

As part of the Section on Engineering, Dr. Kretzschmar was elected as an AAAS Fellow for distinguished contributions to the field of colloid and interface science, particularly in terms of fabricating and understanding heterogeneous particles.

Dr. Kretzschmar has contributed extensively to the field of anisotropic building blocks, more specifically Janus and patchy particles. Anisotropic building blocks are a new class of materials with anisotropy-driven properties that allow for manipulation through external fields and gradients. For example, her team was first to present a feasible method for the fabrication of patchy particles and has since explored the assembly of Janus and patchy particles in external electric and magnetic fields, their applicability as active materials and their behavior at fluid/fluid interfaces. Dr. Kretzschmar and her group continuously strive to discover new deposition and scalable fabrication methods to generate novel anisotropic building blocks at the nanoscopic and microscopic length scale that exhibit unprecedented chemical,

mechanical, and optical properties.

Upon learning of this honor, Dr. Kretzschmar described herself as delighted, humbled, and a little bit stunned. "Especially the fact that members are elected to Fellow status by their peers makes this nomination special to me," Dr. Kretzschmar said. "My thanks go to the many people who have enabled me along the way; my mentors who showed the way, my students who brought and continue to bring my research ideas to fruition, and my fellow colleagues who believe in my ability and vision."

The tradition of AAAS Fellows began in 1874. Currently, members can be considered for the rank of Fellow if nominated by the steering groups of the Association's 24 sections, or by any three Fellows who are current AAAS members (so long as two of the three sponsors are not affiliated with the nominee's institution), or by the AAAS chief executive officer. Fellows must have been continuous members of AAAS for four years by the end of the calendar year in which they are elected.

## CUNY & CAPITAL ONE COMMUNITY COLLEGE INNOVATION CHALLENGE SEMI-FINALS



On January 11th, the New York City Regional Innovation Node (NYCRIN) held the third annual CUNY & Capital One Innovation Challenge (CCIC) Semi-Finals at the CUNY Graduate Center.

The event began in the morning with a Fireside Chat featuring NBC's Harry

Smith and Steve Blank, a well-known serial entrepreneur. The topic was Innovation vs. Entrepreneurship: What's the difference and why does it matter?

During the discussion, Blank shared his personal experiences and challenges running his various businesses. For Blank, "if you are not comfortable in chaos and uncertainty, don't be an entrepreneur."

Throughout the chat, the veteran reiterated the fact that "the world you see today won't be the same world in ten years." The need for innovation is real.

To an audience of mostly aspiring

student entrepreneurs, Blank reminded them that "your education is your net, your plan B, complete it."

This truly remarkable discussion will not only have a tremendous impact for the students in the Challenge but also everyone in the audience.

Shortly after the chat, the student presentations began. Sixteen teams presented their business ideas in the hopes of moving on to Phase two of the program. These ideas ranged from a mobile app helping young adults to budget and manage their money to an on-demand gym service.

With much more to come in Phase II, the New York City Regional Innovation Node looks forward to another exciting cohort in the spring of 2017. Stay tuned.



# THE 2017 COMMUNITY COLLEGE RESEARCH GRANT PROGRAM WORKSHOP

On January 10, nearly eighty faculty members and administrators from CUNY's seven community colleges attended the annual Community College Faculty Development workshop. Gail Mellow, President of LaGuardia Community College, delivered the keynote address based on her new book about the critical importance of teaching: *Pedagogy Matters*. The four breakout sessions that followed focused on undergraduate research mentoring, the use of primary literature to teach science, assessing pedagogical research, and the lives of community college students. After lunch, a roundtable discussion led by George Otte, Maura Smale, and Kay Conway explored the dynamics of online learning. The final event of the day was a poster session during which grant winners from the past two years presented their findings. The workshop was held at John Jay College.



During the Roundtable on Online Learning and Pedagogical Research University Director of Academic Technology, George Otte discussed the state of online education at CUNY and in particular the efforts being made to develop Open Educational Resources. Maura Smale Chief Librarian at City Tech discussed the research findings from her recently published book *Digital Technology as Affordance and Barrier in Higher Education*. Kay Conway talked about her interest in in online education and access and about her NSF-funded research project examining online STEM education with her BMCC colleagues, Claire Wladis and Alyse Hachey.



## ULIJN, RIEDO DISCUSS ASRC'S GROUNDBREAKING ENVIRONMENT IN NATURE NANOTECHNOLOGY ARTICLE

The mission of the CUNY Advanced Science Research Center to be a catalyst for interdisciplinary scientific research and discovery and to develop a university-wide integrated scientific research network is paramount to its success. And as Nanoscience Initiative Director Rein V. Ulijn and Professor Elisa Riedo explained in a recently published article in *Nature Nanotechnology*, this mission will allow the ASRC “to have a significant economic and societal impact through areas such as urbanization, energy generation, climate change and healthcare.”

Published in the journal's September 2016 issue, “Learning to ‘think systems’” is an explanation of the ethos Drs. Ulijn and Riedo have ingrained within the Nanoscience Initiative to encourage sci-

entists conducting research at the ASRC to be at the vanguard of interdisciplinary thinking and research techniques.

“The ASRC provides an environment in which to develop ways of training students and scientists that incorporate a better appreciation of scale and connectivity between disciplines, and is, therefore, a unique test bed for new didactic and research approaches to applied nanoscience,” Ulijn and Riedo wrote.

An environment that encourages “systems thinking” is an essential component of the next generation of scientific research, and the ASRC's unique collection of research disciplines—nanoscience, photonics, structural biology, neuroscience and environmental sciences—was strategically constructed to position CUNY

as a leader in groundbreaking scientific research.

“The next generation of nanoscience students and researchers will need to learn to navigate the ways in which nanoscience can interact with, and impact on, other disciplines and society, as well as learning about their own (already diverse) research field,” the authors noted. “Building on (CUNY's sterling history of scientific research), we hope to take advantage of the unique cross-disciplinary setting offered by the ASRC, and provide students and young researchers with the joined-up training that the future of nanoscience demands.”

Read the full article at: <http://go.nature.com/2d3Ub0A>

## DR. JOY CONNOLLY APPOINTED PROVOST AND SENIOR VP OF THE GRADUATE CENTER



The Graduate Center welcomed **Professor Joy Connolly** as its new Provost and Senior Vice President this past August. Prior to coming to CUNY, Prof. Connolly was

Dean for the Humanities and Professor of Classics at New York University. She brings with her extensive experience in supporting faculty who are engaged in research at the highest levels and she looks forward to partnering with the CUNY Office of Research in advancing the research mission of the University.

In addition to her many administrative responsibilities at the Graduate Center, Prof. Connolly is still deeply engaged in her own research and looks forward to teaching. Prof. Connolly received her undergraduate degree in Classics from Princeton and her

PhD in Classical Studies from the University of Pennsylvania. Before joining NYU in 2004, she was on the faculty at Stanford University and the University of Washington. Prof. Connolly's scholarly work focuses on Roman ideas about politics, aesthetics, rhetoric, and political action: how these ideas have been both conserved over time and translated into contemporary political discourse. Prof. Connolly is currently working on a book that addresses the significance of tradition in conditions of modernity, in which she explores the significance of Hannah Arendt's dialogue with Roman political thought for 21st century democracy.

Prof. Connolly believes that the aims of the Graduate Center and the CUNY Office of Research are well aligned because many of CUNY's most prominent and prolific scholars belong to the doctoral faculty. Both organizations are committed to promoting research excellence and raising the profile of the important work being conducted by faculty across the University. Historically, the humanities and social sciences were the most highly regarded and well-ranked programs at the GC; these are now joined by the Advanced Science Research Center, recently made part of the GC. Prof. Connolly intends to find new ways to promote the

GC as a research institution, to advance collaboration across programs and centers and among faculty, and to enhance the public perception of its many fine programs. Both the Research Office and the GC are also committed to supporting interdisciplinary and collaborative research and Prof. Connolly believes that the GC is leading the way in this area.

Importantly for the Graduate School community, especially in the humanities and humanistic social sciences, Prof. Connolly is also the author of *Going on the Market*, a handbook that helps humanities graduate students and recent graduates navigate the job market. Prof. Connolly credits the GC with actively preparing students for the new reality of life after a doctoral program. The Office of Career Planning and Professional Development at the GC confronts head-on the difficulties many graduates face in securing traditional research-intensive academic jobs, and provides guidance and training for students to help them identify and attain alternative career outcomes. Prof. Connolly would like to see more successful programs similar to the Mellon Foundation-funded Humanities Teaching and Learning Alliance, which aims to provide graduate students with enriched pedagogical training.

## WHAT'S HAPPENING IN THE SCIENCES AT THE GRADUATE CENTER?

It been a year since Professor **Joshua Brumberg** was appointed Dean for the Sciences at the Graduate Center and it has been a very busy and productive one. Dr. Brumberg is responsible for overseeing all of the science doctoral programs, including the health sciences, and he shares Provost Connolly's desire to raise the profile of the GC as a research institution. and, in particular, to increase the visibility of the bench sciences at CUNY.

Dr. Brumberg seeks to address the challenges posed by managing graduate studies in a dispersed system, and is committed to building cohesive relationships within and across the science programs. He has met with Research Deans, faculty, and graduate students at the colleges to discuss both problems and best practices. These meetings offer researchers and administrators a structured forum for airing concerns, and Dr. Brumberg has found that campuses often confront many of the same issues and can benefit from learning about each other's experience.

Dr. Brumberg cites the NSF Survey of Earned Doctorates to highlight the impressive fact that the GC ranks 29th in the country for the number of graduates we produce in the sciences. One distinguishing feature of CUNY doctoral programs is the wealth of teaching opportunities our students are offered, and he believes this facet of the program helps our graduates be more competitive on the job market. That said, Dr. Brumberg would like to offer more professional development programming and to build greater awareness among students early on about the range of career opportunities open to them both inside and outside of academia. Dr. Brumberg believes that every student should have an individual development



plan (IDP) that is prepared in consultation with his/her mentor, and he would also like to see the colleges submitting more proposals for training grants such as the T32 grants offered by the National Institutes of Health and the National Science Foundation Research Traineeship Program (NRT).

Dr. Brumberg hopes the GC can lead the way in creating a more connected university. To that end, he is trying to foster a real sense of community among graduate students and faculty. He believes that there are many researchers across CUNY working on potentially synergistic problems who don't know each other—and he also believes that graduate students are ideally placed to build these relationships. He recognizes that it is often difficult to tear students away from their labs to attend networking and professional development events, but he thinks that it is vital that we keep the conversation going – virtually or otherwise. He would like to make more resources available online and to organize more one-day meetings of CUNY scientists to discuss research themes, research methods, and professional paths. A great example of this effort is the new CUNY Biotech Club—a cross-campus alliance of CUNY graduate students that hosts events with industry partners.



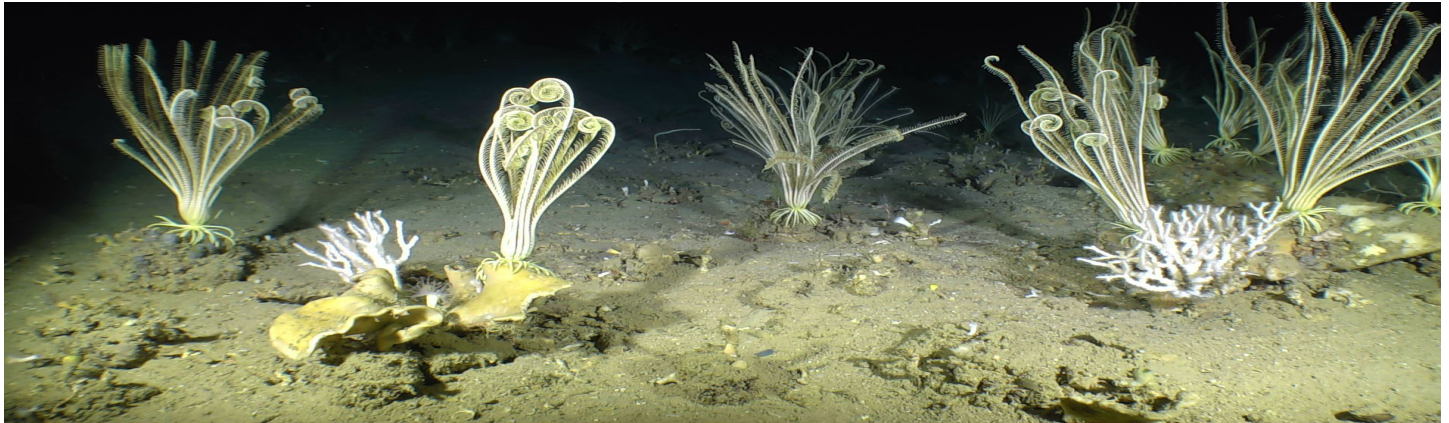
*Tweets you may have missed!*



## Did You Know?

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The Office of Research offers press release writing services to all CUNY researchers, as well as a University-wide subscription to EurekAlert!, an online global news distribution service operated by the American Association for the Advancement of Science. Email [shante.booker@cuny.edu](mailto:shante.booker@cuny.edu) to learn more about this service.



## TWO UNDERGRADUATE STUDENTS TRAVELED ABOARD THE RESEARCH VESSEL MANTA TO THE GULF OF MEXICO!

**Mercer R. Brugler**, Assistant Professor of Biology at New York City College of Technology (NYCCT) recently sent two undergraduate researchers, Nicole Bellaflores-Mejia (a Bridges to the Baccalaureate Scholar) and Sheila Moaleman (a NYCCT Baccalaureate Student Research Scholar), on a National Oceanic and Atmospheric Administration (NOAA) expedition aboard the research vessel Manta to the Gulf of Mexico. The purpose of the research cruise (September 3-8, 2016) was to conduct video and collection-based surveys of regional underwater banks not currently protected by National Marine Sanctuary regulations. These data will be used to support NOAA's Draft Environmental Impact Statement (DEIS) in an effort to expand the boundaries of the Flower Garden Banks National Marine Sanctuary. Using the remotely operated vehicle (ROV) Mohawk, the research team successfully completed 28 dives ranging from 60-200 m depth across 7 banks and collected 23 samples of mesophotic black corals and octocorals (Phylum Cnidaria). Black coral colonies were sent to the American Museum of Natural History where Dr. Brugler's team of six NYCCT undergraduates will extract, sequence and analyze their DNA in an effort to reveal new species or extend the range of known species.

The Office of Research helped Dr. Brugler fund this life-changing opportunity for his students that enabled them to develop valuable professional relationships, and to experience first-hand how ocean-going science is conducted and how samples are collected and preserved.



### Nicole Bellaflores-Mejia, City Tech

Nicole Bellaflores-Mejia writes: "On our first day, we familiarized ourselves with the different shifts, which consisted of working the back deck, assisting in the deployment and recovery of the ROV and covering various positions in the main control room. These positions ranged from naming specimens during dives, recording HD and SD video, and my favorite, taking pictures. The ROV pilots, Lance and Jason, would line up the ROV just right for the perfect photo. It was like a photo shoot underwater except this time our models were lionfish and various sponge and coral habitats."



### Sheila Moaleman, City Tech

Sheila Moaleman writes: "Before this research cruise, I spent most of my time in the lab working with preserved deep sea black coral samples. Being able to see what these magnificent creatures look like in situ was an amazing feeling. The highlight of the cruise for me was when we saw a colony of black coral unlike any other black coral species we had seen before. I couldn't wait until I had cell phone service so I could send the pictures to Dr. Brugler for identification. I'm grateful to have had such a well-rounded research experience. Not only do I get to physically be in the room as new species are being discovered, but I also get to use my lab research to contribute to the Flower Garden Banks National Marine Sanctuary's expansion proposal."



# CUNY SUMMER UNDERGRADUATE RESEARCH PROGRAM

## A LOOK INSIDE THE 2016 C-SURP POSTER PRESENTATIONS!



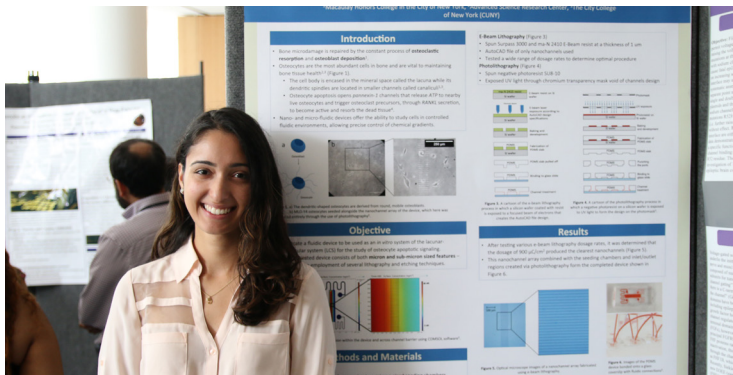
### Charmé Mitchell, City College

When Charmé Mitchell applied to CSURP, she had not heard of palladium electrodeposition. In her lab at City College, Dr. Elizabeth Biddinger introduced Mitchell to the process of drying ionic liquid to a very low water content using an electrochemical system with three different electrodes in order to analyze palladium samples from several different potentials. The method for analyzing palladium emits fewer harmful vapors than traditional aqueous solutions and may be used by industry for a range of applications from increasing corrosion protection in vehicles to reducing cracks in metal plating on jewelry. As a result of her summer experience, Mitchell transferred to City College and looks forward to completing her major in chemical engineering.



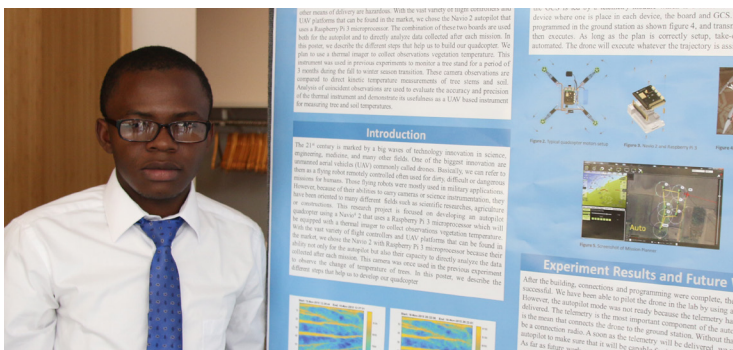
### Emaad Khwaja, Hunter College

As a biochemistry and math major, Emaad Khwaja applied to CSURP because he was looking for exposure to photonics. The program exceeded his expectations, he reports, because instead of “sitting in a lab and making molecules all summer,” Dr. Charles Drain at Hunter College guided him through an entire research project with nanoparticles. Khwaja’s work with Dr. Drain resulted in a co-authored article in Nano Letters: “Stable Radiolabeling of Sulfur-Functionalized Silica Nanoparticles with Copper-64.” His experience at CSURP led to a volunteer research position at Sloan-Kettering, with the promise of a paid position upon graduation.



### Denise Robles, City College

Denise Robles was inspired to apply to CSURP during a Macauley Honors College tour of the Advanced Science Research Center, where she met Dr. Rein Ulijn and toured his nanoscience lab. Denise Robles worked in CSURP with Dr. Jacob Trevino and Dr. Maribel Vasquez on the fabrication of fluidic devices for the study of osteocyte apoptotic signaling. Their focus was on using nanotechnology to create an in vitro system that models the lacunar-canalicular system inside of bone structures, with the aim of fabricating a device that will enable them to develop the treatment of bone diseases. She is a senior at City College and plans to apply to a Ph.D. program where she can specialize in either thermochemical nanolithography or peptide nanotechnology.



### Seydou Konate, City College

Seydou Konate was conducting research at Hostos with Professor Reginald Dorcelly when he applied to CSURP. As an engineering student, he wanted to know more about environmental science in order to address problems related to global warming. His research interests blended well with those of his CSURP mentor, Dr. Kyle McDonald at City College, who has specialized in spaceborne, airborne, and ground-based remote sensing instruments to monitor wetlands ecosystems and global carbon and water cycles. Konate worked with Dr. McDonald to build a drone autopilot quadcopter and to analyze the data collected after each mission. He has graduated from Hostos and enrolled at City College.

## POSTDOC TRAVEL AWARD WINNERS ROUND 11B – 2016

**Postdoctoral Fellow: Melissa Deri, PhD**

**College:** Lehman College

**Department:** Chemistry

**Title of Proposal:** “Student Outcomes of a Flipped General Chemistry Course in a Large Public University Setting” at the 252nd American Chemical Society National Meeting & Exposition from August 21-25, 2016 in Philadelphia, Pennsylvania.

**Postdoctoral Fellow: Brian Ford, PhD**

**College:** Brooklyn College

**Department:** Biology

**Title of Proposal:** “Role of Type IV Pili in Mixed-Species Microcolony Formation” at the International Pathogenic Neisseria Conference 2016 from September 4-9, 2016 in Manchester, United Kingdom.

**Postdoctoral Fellow: Miruna Ghinia, PhD**

**College:** The City College of New York

**Department:** Biology

**Title of Proposal:** “Gene Targeting in the Chick Retina – Towards the Improvement of a Powerful Model Organism for Studying Retinal Development” at the Visual System Development – Gordon Research Conference from August 6-12, 2016 in West Dover, Vermont.

**Postdoctoral Fellow: Morgane Houssais, PhD**

**College:** The City College of New York

**Department:** The Levich Institute

**Title of Proposal:** “Experimental Investigation of Slow Sediment Deformation by a Fluid: Continuity and Breakdowns from Suspension to Granular Creep Dynamics” at the Granular Matter - Gordon Research Conference from July 24-29, 2016 in Easton, Massachusetts.

**Postdoctoral Fellow: Ayala Lampel, PhD**

**College:** CUNY ASRC

**Department:** Nanoscience

**Title of Proposal:** “Sequence-driven supramolecular tripeptide materials for directing melanin formation” at the Material Research Society (MRS) Fall Meeting from November 27 - December 2, 2016 in Boston, Massachusetts.

**Postdoctoral Fellow: Lynda Murray, PhD**

**College:** College of Staten Island

**Department:** Physical Therapy

**Title of Proposal:** “Changes in Motor Function and Reflex Circuits with Repetitive Transspinal Stimulation after Spinal Cord Injury” at the Society for Neuroscience 46th Annual Neuroscience Meeting from November 12-16, 2016 in San Diego, California.

**Postdoctoral Fellow: Ashley Wei-Ting Wang, PhD**

**College:** Hunter College

**Department:** Psychology

**Title of Proposal:** “Trajectories of Posttraumatic Growth and Distress in the First Year after Breast Cancer Surgery” at the 6th Asian Congress of Health Psychology (ACHP 2016) from July 23-24, 2016 in Yokohama, Japan.

**Postdoctoral Fellow: Jianxun Xia, PhD**

**College:** Queens College

**Department:** Psychology

**Title of Proposal:** “Chronic Nicotine Induces Neuroadaptations in Striatopallidal D2 Pathway Mediated by NR2B-containing silent synapses” at the Society for Neuroscience 46th Annual Neuroscience Meeting from November 12-16, 2016 in San Diego, California.

**Postdoctoral Fellow: Gautam Ganapati Yadav, PhD**

**College:** The City College of New York

**Department:** Chemical Engineering

**Title of Proposal:** “Advanced Energy-Dense Alkaline Manganese Dioxide-Zinc Batteries: Accessing The 2nd Electron Capacity of Manganese Dioxide” at the American Institute of Chemical Engineers (AIChE) Annual Meeting from November 13-18, 2016 in San Francisco, California.

### ***NEW BLOG! RESEARCH COMPLIANCE***

The CUNY Office of Research Compliance is proud to announce the creation of the CUNY Research Compliance blog! The blog will feature breaking news, poignant commentary, and valuable guidance on a variety of hot topics in research compliance today. We hope that the CUNY research community will turn to this blog for information, insights, and direction in the ever-changing landscape of compliance. We invite you to join the discussion by volunteering to write a guest blog post or by leaving comments directly on our posts.

The blog can be found at <https://cunyresearchcompliance.org/>!



## THE CUNY RESEARCH SCHOLARS PROGRAM (CRSP) SYMPOSIUM, 2016

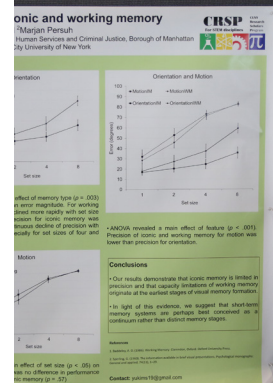
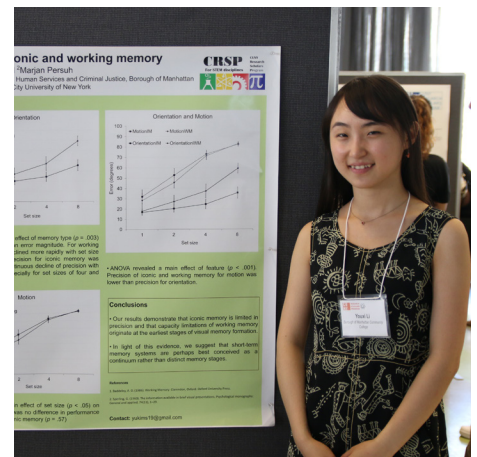


The CUNY Research Scholars Program (CRSP) provides year-long mentored research experiences in STEM disciplines to students at all seven community colleges and the three comprehensive schools. Funded by the NYC Office of the Mayor, the program has grown steadily from an initial cohort of 150 in 2014-2015 to include 233 students during the current academic year.

The program culminates in a day-long annual symposium at John Jay College where students present posters and deliver oral presentations based on their findings. In 2016, Dr. Rein Ulijn,

Founding Director of the Nanoscience Initiative at the CUNY Advanced Science Research Center, delivered the keynote address.

The program is made possible by the expertise and dedication of mentors who work with their students during the academic year and through the summer, and by the college directors who run the program at the college level and arrange biweekly programs for participants. Assessment from the first CRSP cohort indicates that the program provides a significant, positive impact on credit accrual and graduation rates.



## INNOVENE INC., PRESENTS AT 1ST PITCH IN NEW YORK HELD BY THE MID ATLANTIC BIO ANGELS

On October 6, 2016 the Mid-Atlantic Bio Angels (MABA) held their 1<sup>st</sup> Pitch life sciences event at the New York Genome Center in Manhattan. The meetup gives biotech startups the opportunity to “pitch” their company and product in order to receive feedback from investors and the audience attendees. In this round, Innovene introduced their lead therapeutic TriCurin, which is based on a technology invented at CUNY & Northwell Health.

The Mid-Atlantic Bio Angels have developed a multi-step pre-screening process and only 10% of the applicants are granted the opportunity to present. Presenters receive constructive feedback from the audience, as well as from knowledgeable and experienced industry people including representatives from Mid Atlantic Bio Angels. Mario Castellanos M.D., Co-founder & President of Innovene said, “The MABA 1<sup>st</sup> Pitch event is a great experience, the feedback obtained provides an incredible opportunity to refine the investment strategy and presentation. We were honored to represent CUNY and Northwell Health.”

Innovene Inc. is a drug discovery and development company working with the City University of New York and Northwell Health to introduce a new class

of therapeutics. Innovene is now poised to introduce its leading botanical based drug TriCurin into the cancer prevention and treatment marketplace, targeting the human papillomavirus (HPV) infection and HPV induced cancers.

Eighty million Americans are currently infected with HPV. Worldwide, 135.8 million women have cervical HPV and are at risk for cervical cancer. In addition, oral HPV infection has become the main risk factor for head and neck cancer. The HPV vaccines are only preventative. There is no specific treatment against cancer causing HPV infection. Typically, physicians recommend a “watch and wait” approach as standard practice, treating precancers with ablative or surgical treatments.

The CUNY driven technology will allow Innovene to introduce TriCurin, which specifically targets the replicative cycle of HPV before pre-cancerous conditions become malignant. TriCurin is composed of botanical components designated by the FDA as GRAS (generally recognized as safe) compounds. This new class of therapeutic will build a platform for future drug development. TriCurin will be made available as cream for cervical lesions and a topical ointment for the treatment of skin and external genital warts. The medicinal

TriCurin lollipop will be available for the prevention of head and neck cancers and for the treatment of oral HPV infection. Intra-lesional TriCurin is being studied for direct intensive intra-tumor treatment. The companies T-HPV 001 program is designed to evaluate the clinical efficacy of these TriCurin products.

Innovene is expected to begin their phase I clinical trial in mid-2017, examining the effects of topical TriCurin in women with chronic cervical HPV infection. The clinical team has recently received \$150,000 in grant funding to advance preclinical research. Innovene’s business team is taking advantage of the current climate in New York that is receptive to innovation and entrepreneurship by leveraging partnerships to develop strategic opportunities with corporate, scientific and clinical experts. The 1<sup>st</sup> Pitch event allows startups like Innovene to connect with experienced individuals in the biotechnology, pharmaceutical and healthcare industries who support and invest in new technologies.

Contact the CUNY Technology Commercialization Office (<http://www.cuny.edu/research/ovcr/tco.html>) if you have questions about patenting or pitching your research.



## CUNY & CAPITAL ONE COMMUNITY COLLEGE INNOVATION CHALLENGE

Currently, most entrepreneurship programs primarily target graduate students or undergraduates enrolled at four-year educational institutions. As a result, students who attend community colleges and who enroll in two-year degree programs face greater challenges in pursuing their entrepreneurial dreams.

With this in mind, the CUNY & Capital One Community College Innovation Challenge was created several years ago, originally by the team at Queensborough Community College of CUNY (QCC). What

started as a single community college pilot program with just 4 participants, soon blossomed across multiple CUNY community colleges with over 80 participants in last year’s program. It was at this point that the New York City Regional Innovation Node (NYCRIN) partnered with the QCC team to scale this program.

Upon seeing the continued impact of this program, Capital One Bank decided to once again support it allows for this program to run another year, with NYCRIN being its permanent home. Previous cohorts showed that students not only became better collaborators and public speakers, but learned vital business skills as well. In fact, some students ultimately moved on to the New York State Business Plan Competition.

Keeping the same goals, this year’s program places an additional emphasis on experiential learning, through the implementation of elements of the National Science Foundation’s I-Corps model based on the Lean Launch Pad (LLP) methodology.

The program is well underway and the NYCRIN team looks forward to another exciting cohort over the next several months, with the semi-finals being held in January and the finale in April 2017.

**If you have had NSF funding and want to explore the commercial viability of your technology contact NYCRIN (<http://www.cuny.edu/site/nycrin.html>) to find out more about the NSF I-Corps program.**

# INTERDISCIPLINARY RESEARCH GRANT PROGRAM

The University introduced the new Interdisciplinary Research Grant program (IRG) in 2016. Starting in 2017, this program will support and encourage faculty researchers who will tackle global challenges or problems that affect the needs of urban populations. The grant is designed to provide seed funding for projects that will become eligible and competitive for external funding.

## 2016 Interdisciplinary Research Grant (IRG) Winners, Round 1

<u>Faculty</u>	<u>Title of Proposal</u>
<b>Mahdieh Allahviranloo</b> , City College of New York <b>Yana Kucheva</b> , City College of New York	<i>Introducing New Measures of Segregation: Space-Time-Activity Prisms and Time-Dependent Neighborhoods</i>
<b>Emilio Gallicchio</b> , Brooklyn College <b>Wayne W. Harding</b> , Hunter College <b>Tom Kurtzman</b> , Lehman College <b>Lauren Wickstrom</b> , Borough of Manhattan Community College	<i>A Combined Treatment of Hydration and Dynamical Effects for the Modeling of Protein-Ligand Binding Thermodynamics</i>
<b>Kristen Gillespie-Lynch</b> , College of Staten Island <b>Deborah Sturm</b> , College of Staten Island	<i>Connecting through Kinect: Evaluating a Game to Support Emotion Recognition and Collaboration among Autistic Individuals</i>
<b>Klara Marton</b> , Graduate Center <b>Patricia Brooks</b> , College of Staten Island <b>Ofelia García</b> , Graduate Center	<i>The Effects of Bilingualism, Language Impairment, and Socio-Economic Status on Children's Cognitive-Linguistic Performance</i>
<b>Justine McGovern</b> , Lehman College <b>David Schwittek</b> , Lehman College	<i>Through the Lens of Age: An Interdisciplinary Pilot Study on Ageism among Undergraduate Social Work Students and Adults over 65</i>
<b>Carmen Melendez-Vasquez</b> , Hunter College <b>Rein Ulijn</b> , Advanced Science Research Center (ASRC)	<i>Evaluation of Tunable Stiffness Biogels as a Platform for Enhanced Myelin Formation</i>
<b>Ahmed Mohamed</b> , City College of New York <b>M. Chantale Damas</b> , Queensborough Community College	<i>Modeling, Assessing, and Forecasting GMDs and their Impacts on the NYS Power System</i>
<b>Huy Vo</b> , City College of New York <b>Mahdieh Allahviranloo</b> , City College of New York	<i>Towards a Big Data Platform for Interactive Analysis of Urban Data Sets</i>

## COMMUNITY COLLEGE RESEARCH GRANT PROGRAM

### COLLABORATIVE PEDAGOGICAL RESEARCH GRANT PROGRAM

This program supports collaborative pedagogical research efforts of CUNY community college faculty. The program seeks to leverage faculty expertise to promote student success. The Pedagogical research is often most useful when it assesses current teaching strategies, seeks to uncover the ways in which students learn, and validates good practices.

#### 2016 Collaborative Pedagogical Research Grant Winners

<u>Faculty</u>	<u>Title of Proposal</u>
<b>Gloria McNamara</b> , Borough of Manhattan Community College <b>Ronald J. Clare</b> , Borough of Manhattan Community College	<i>Health Education through Entrepreneurship Pedagogy</i>
<b>Lesley Rennis</b> , Borough of Manhattan Community College <b>Precious Sellars-Mulhern</b> , Borough of Manhattan Community College	<i>Mindfulness across the Curriculum: Exploring the Role of Contemplative practices in Teaching and Learning</i>
<b>Kersha Smith</b> , Queensborough Community College <b>Rommel Robertson</b> , Queensborough Community College	<i>What They Thought They Knew: Knowledge Construction and Expectancy in Community College Classrooms</i>

#### KRIS BURRELL: FEATURED MURG WINNER

**Kristopher Burrell**, Assistant Professor of History at Hostos Community College, was one of the winners in the first year of the CCRG Mentored Undergraduate Research program that supports faculty who provide outstanding mentored research experiences for their students. Dr. Burrell's research project studies the intellectual production of Ella Baker, Zora Neale Hurston, Constance Baker Motley, and Pauli Murray—four black women activist-intellectuals who approached the problem of inferior educational opportunities for black children from different ideological perspectives. Dr. Burrell and his student are conducting archival research to produce an article for an edited volume that analyzes the writings, speeches, interviews, and correspondence of these four women leaders to elucidate the ideological underpinnings of their activities regarding school desegregation.

# COMMUNITY COLLEGE RESEARCH GRANT PROGRAM

## MENTORED UNDERGRADUATE RESEARCH PROGRAM

Research by undergraduates is a high impact educational practice, and this program aims to identify and support faculty who can provide outstanding mentored research experiences for students. This Grant is designed to increase the number of associate degree students who are engaged in faculty mentored research projects.

### 2016 Mentored Undergraduate Research Grant Winners

<u>Faculty</u>	<u>Title of Proposal</u>
<b>Shawna M. Brandle</b> , Kingsborough Community College	<i>Cable Television News Coverage of Refugees</i>
<b>Kristopher Burrell</b> , Hostos Community College	<i>Black Women Activist-Intellectuals and the Struggle for Quality Education, 1954-1965</i>
<b>Allison Franzese</b> , Hostos Community College	<i>Calibrating Elemental Concentrations Obtained by XRF Scanning of Deep-Sea Sediment Cores</i>
<b>Rajendra Gharbaran</b> , Bronx Community College <b>Stephen Redenti</b> , Lehman College	<i>Cytostatic effects of Therapeutic Perturbation of Vitamin D Receptor Signaling in B cell Malignant Lymphomas</i>
<b>Karen R. Miller</b> , LaGuardia Community College	<i>Mentoring Historical Research: American-Filipina Families, State-Sponsored Homesteading, and Failure on the Philippine Frontier 1913-1921</i>
<b>Tomonori Nagano</b> , LaGuardia Community College	<i>Phonological Advantages of Heritage Language Learners of Japanese and their Pedagogical Implications</i>
<b>Holly Porter-Morgan</b> , LaGuardia Community College	<i>Assessing the Impact of Combined Sewer Overflow Upgrades at a Superfund Site: A Mentored Undergraduate Research Project</i>
<b>Hao Tang</b> , Borough of Manhattan Community College	<i>Mobile Indoor Navigation for the Blind</i>
<b>Areti Tsimounis</b> , Queensborough Community College	<i>The Influence of Sensory Experience on Supragranular Projection Neurons</i>
<b>Sujun Wei</b> , Queensborough Community College <b>Gina M. Florio</b> , St. John's University	<i>Synthesis and Investigation of Molecular Transistors and Wires Based on Carbazole Motif</i>

## XI CHEN NAMED 2016 BLAVATNIK REGIONAL AWARD FINALIST



Xi Chen, Assistant Professor of Chemical Engineering with the City University of New York’s Advanced Science Research Center (CUNY ASRC) and The City College of New York, has been named a 2016 Blavatnik Regional Award Finalist in Physical Sciences and Engineering. He will accept the award—consisting of \$10,000 in unrestricted funds and a medal—at the New York Academy of Sciences Annual Gala on Monday, November 7.

Chen—a faculty member with the CUNY ASRC’s Nanoscience Initiative—is being recognized for his research of radically new approaches to energy

harvesting from evaporation, which has led to numerous publications in leading scientific and popular journals, including Nature Nanotechnology and Nature Communications and has been featured in mainstream media, such as The New York Times, The Wall Street Journal and many others.

“I am honored and grateful to receive the Blavatnik Award. This award is a great opportunity to bring our technology to a larger audience,” Chen said. “I really hope that the fruits of my research will have a beneficial real world impact in the near future.”

The regional award—granted to postdoctoral-level scientists conducting research at institution in New York, New Jersey and Connecticut—was founded by business entrepreneur Len Blavatnik, in partnership with the New York Academy of Sciences, the Blavatnik Awards for Young Scientists seek to promote early-career researchers engaged in innovative, high-impact research. Each year the regional awards recognize one winner and two finalists in each of the categories of Life Science, Physical Sciences & Engineering and Chemistry.

Chen develops the next generation of sensors, actuators, energy conversion and storage devices by using novel

nanostructured and bio-inspired functional materials. His recent work on water-responsive materials and evaporation-driven engines opens up a new field in energy harvesting and provides opportunities towards solving current challenges in sustainable energy, energy storage, clean water, robotics and medical technologies.

The state of the art core facilities housed at the CUNY ASRC allow Chen to further expand his research in new directions. Thanks to the cutting edge NanoFabrication Facility and others, Chen has the opportunity to build upon his early research in his field.

“We are extremely proud of Xi’s richly deserved achievement. He is an outstanding young scientist with a truly original and creative research program which holds great promise for clean energy generation. We are thrilled that he joined us here at CUNY ASRC and we look forward to his continued success,” Nanoscience Initiative Director Rein V. Ulijn said.

A graduate of Tsinghua University in Beijing, Chen completed his PhD at Stevens Institute of Technology in New Jersey prior to his postdoctoral work at Columbia University. Chen joined the CUNY ASRC in August 2016, and also holds an assistant professorship in The City College of New York’s Department of Chemical Engineering.

## DO YOU HAVE A GOOGLE SCHOLAR PROFILE? YOU SHOULD! FIND OUT HOW TO CREATE ONE

Did you know that one way to increase your research’s impact is to create a Google Scholar profile? Google Scholar offers a popular way to create a profile that showcases your own papers and the citations they’ve received. It also calculates a platform-dependent h-index, which many researchers love to track (for better or for worse).

First, you will need a Google Profile, if you do not already have one.

Go to [google.com](http://google.com)  
Click “Sign In.”

TIP: Make sure that the computer you are using is not signed into a different user’s Google Account. If so, you will have to log out and follow the prompts to reach the creation page.

Select “Create an account.”

Enter Your Name.

Select a Username.

Select a password.

For security purposes, we suggest following these tips.

Enter your Birthday.

Select your gender.

Enter your Mobile phone number.

Enter your current (ending in CUNY.edu) email address.

Now, go to Google Scholar ([scholar.google.com](http://scholar.google.com))

Click on “My Citations” at the top of the screen.

Log into your main Google Account through the screen that appears after selecting this option.

Complete the following required fields:  
Name

Affiliation (Campus/School, CUNY)

Email for verification (This must be your CUNY email or other institutional email)

Areas of interest (optional)

On the next screen enter your name as it appears on your papers (e.g. J Smith or JM Smith)

Select your articles either by groups or individually

Select option for automatic updates or not (It is recommended that you select automatic updates. You may always delete items that are incorrect or you do not want on your profile).

Choose to make your profile public to have it appear in search results.

Congratulations! Your Google Scholar profile is now set up!