

Spring 2017

forward ▶▶ thinking

The Research Newsletter of Montclair State University

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A Banner Year for Research and Programming



For research and externally sponsored program funding at Montclair State, FY2016 was a record-breaking year, building upon past achievements, with faculty and staff receiving more than 60 awards, totaling more than \$11.6 million.

“The funding is an impressive 37.4 percent increase in award volume from the previous year,” says Office of Research and Sponsored Programs Director **Ted Russo**.

Moreover, University researchers have had increasing success with the National Science Foundation (NSF), receiving more than \$3 million in grants for 11 projects last year alone.

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Five Years of Autism Research and Services



In its first five years, the Center for Autism and Early Childhood Mental Health at Montclair State University has brought in more than \$7 million in grants and other funding to support its mission of offering professional development, education, clinical services, community programs and research opportunities in the areas of autism, infant and childhood development, and early childhood mental health in New Jersey.

The Center also serves as the statewide clearinghouse, coordinating autism research and treatment projects throughout New Jersey funded by the Governor’s Council for Medical Research and Treatment of Autism.

“The most rewarding outcome of the past five years is being able to serve a central role in advancing knowledge of and directing attention to autism and early childhood mental health in the state,” says **Gerard Costa**, director of the Center for Autism and Early Childhood Mental Health.

Since its first award of a five-year, \$1.5 million grant in 2012, the Center, in that clearinghouse role, was designated by the state Department of Health as the New Jersey Autism Center of Excellence (NJACE) Coordinating Center. The original award increased to over \$3 million as more research sites were funded and in December 2016, the Center — which currently supports 25 clinical research projects and five autism medical homes — received its latest supplemental installment of \$437,078 and was asked to serve an additional year as the NJACE Coordinating Center, through June 2018.

The Center is anchored in a multidisciplinary, developmental approach designed to meet the needs of infants, children and their families, and is supported by theoretical, research-based methods and clinical application.

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How to Best Interview Child Eyewitnesses



Interviewing children remotely could solve the challenges facing many jurisdictions, especially those lacking the resources and expertise to skillfully conduct sensitive interviews of child eyewitnesses. Psychology Professor **Jason Dickinson** has received a National Science Foundation (NSF) grant to assess the impact of face-to-face and remote interviewing of child eyewitnesses.

“The ultimate goal is to help the legal system make better decisions where children are involved.”

– Jason Dickinson

This is Dickinson’s fourth NSF grant supporting his research on forensic interview aids with children, including the use of drawings of human figures to elicit disclosures of abuse from young children and whether allowing children to draw during forensic interviews is a distraction or a memory aid.

“Eyewitness evidence is easy to contaminate, so basically my research looks at the best ways to collect that evidence so professionals can make the best and most accurate decisions possible,” says Dickinson.

Dickinson’s new project is one of the first to explore whether interviewing child witnesses from afar by computer presents an effective alternative to face-to-face, in-person interviews. “When questioned properly, children can make remarkable witnesses. However, they can be very suggestible,” explains Dickinson, who is also the director of the Robert D. McCormick Center for Child Advocacy and Policy at Montclair State.

The University is leading the three-year, \$311,753 project, with Dickinson serving as a co-principal investigator with Debra Poole of Central Michigan University.

According to Dickinson, remote interviews could offer distinct advantages such as reducing investigative response time, sparing investigative resources and accelerating case disposition. “It could aid investigators in their efforts to reach children in out-of-the-way locations,” he predicts. “However, the ability of remote interviewing to elicit eyewitness evidence from children has not been sufficiently tested.”

The team, which includes Assistant Professor **Nicole Lytle** of the Center for Child Advocacy and Policy, will do just that by comparing the effectiveness of face-to-face interviews with that of computer interviews. “The ultimate goal is to help the legal system make better decisions where children are involved,” Dickinson says.

In addition to advancing the field of forensic interviewing, the project will help to train dozens of University students who will help collect data. “Projects like these are how we train the next generation of scientists,” says Dickinson. ■

Five Years of Autism Research and Services continued from page 1

Its numerous multidisciplinary programs and services include a clinic for families from pregnancy to age 12; a Center-created infant mental health curriculum; and a school-based, early childhood mental health promotion program.

Center staff and affiliate faculty members offer consultation services, seminars, workshops and training sessions for schools,

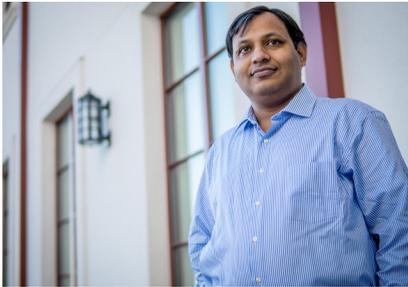
community agencies, health care facilities and other organizations regarding autism spectrum disorder and infant/early childhood mental health.

In addition, the Center is the only authorized U.S. provider of Zippy’s Friends, an international school-based mental health promotion curriculum for 5- to 7-year-olds offered in 28 countries and

endorsed by the World Health Organization.

In April, the Center hosted its second statewide autism summit, titled “Meeting of the Minds and Honoring Diversity in Research,” where researchers presented some of the work being conducted through grants from the Governor’s Council for Medical Research and Treatment of Autism. ■

Presidential Early Career Award



President Barack Obama named Earth and Environmental Studies Professor Pankaj Lal as one of 102 researchers in the country deserving of the prestigious Presidential Early Career Award for Scientists and Engineers. The award is the highest honor bestowed by the U.S. government on federally funded

science and engineering professionals in the early stages of their careers.

In announcing the awards in January, Obama said, “These innovators are working to help keep the United States on the cutting edge, showing that federal investments in science lead to advancements that expand our knowledge of the world around us and contribute to our economy.”

“It is extremely gratifying to get presidential validation of the research I am undertaking and an absolute honor,” says Lal, who is also the associate director of the

PSEG Institute for Sustainability Studies. “Personally, it gives me added confidence to continue on with my sustainable energy and resources research, which is one of the grand challenges facing modern society. Being awarded for what I enjoy doing is really awesome.”

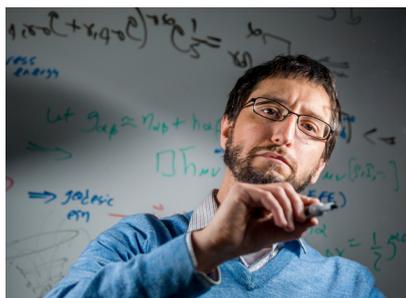
Lal was nominated by the U.S. Department of Agriculture, which has funded his collaborative, interdisciplinary research that contributes to the development of forest- and agriculture-based biofuel development as a fossil fuel alternative in Southern rural communities. ■

“These innovators are working to help keep the United States on the cutting edge, showing that federal investments in science lead to advancements that expand our knowledge of the world around us and contribute to our economy.”
—President Barack Obama

Tales from the Dark Side of the Universe

Mathematical Sciences Professor Marc Favata has received a five-year, \$400,000 Faculty Early Career Development (CAREER) grant from the National Science Foundation for a research and education project that will explore ways in which gravitational waves offer a new way of looking at the universe.

Favata is a member of the international LIGO team that made history in 2015 when it detected, for the first time, gravitational waves from two black holes colliding to form one. The detection — one of the most significant physics discoveries of the past 50 years — confirmed a key prediction of Albert Einstein’s 1915 theory of relativity.



The competitive CAREER award supports the research and education initiatives of faculty who are in the early stages of their careers. “I feel very humbled — and lucky — to have received this award,” says Favata.

According to Favata, LIGO’s discovery helps answer questions about the environment in which these black holes formed and how they interacted and evolved before becoming black holes. “We’re also

asking, ‘Was Einstein right?’ It’s possible that as our measurements become more precise, we could find a disagreement with Einstein’s theory,” he says.

University students will be involved in project research and educational components. “They’ll help improve the ‘Sounds of Spacetime’ website that we created last year, which lets people ‘listen’ to the universe by exploring the analogy between gravitational waves and sound,” says Favata. Project funding will also support lectures and outreach efforts to educate a broader public about LIGO’s discoveries.

To listen to the universe, visit the Sounds of Spacetime website at soundsofspacetime.org. ■

Learning to Talk About Spatial Relationships

The ball is on the table; the toy is in the box; the shoe is on the foot. In order to talk about spatial relationships like these, children first need to acquire spatial language.

“Between 12 months and 5 years is an active time for infants’ and children’s spatial language development,” says Psychology Professor **Laura Lakusta**. “Research suggests that by 10 weeks, infants have an understanding of spatial configurations. Further, children understand and produce spatial terms before age 2. Spatial language continues to develop into early childhood.”

Lakusta’s project, “Interactions Between Language and Cognition in the Early Acquisition of Spatial Language,” was recently awarded a three-year, \$500,000 National Science Foundation Research in Undergraduate Institutions, or RUI, grant.

Lakusta hopes her project will shed new light on the critical development of early spatial language skills. “We know that language development of spatial terms is relevant for later academic achievement, particularly in STEM-related disciplines, but our understanding is far from complete,” explains Lakusta.

Principal Investigator Lakusta and colleague Barbara Landau from Johns Hopkins University, will test 340 infants and children between the ages of 6 months and



4 1/2 years, their parents and 16 college students. One study will test whether children think that a toy placed *on top* or *on the side* of a box are both instances of “support” and can be described with the term “on.”

“Understanding of spatial prepositions, like ‘on,’ is pertinent to children’s understanding of STEM disciplines like math,” Lakusta says.

Other experiments look at how parents talk about support to their children and explore the connection between parental input and child language development. Lakusta’s project will also allow students to gain research experience in participant testing, data interpretation, publishing and presenting findings. ■

Connecting New Jersey Farmers with Consumers

Even as the number of New Jersey farmers markets has increased in recent years to meet a growing demand for fresh, locally sourced produce, many low-income consumers and neighborhoods remain underserved.

Programs created to improve food access have not always been successful. While the USDA Women, Infants, and Children (WIC) Farmers Market Nutrition Program provides farmers market vouchers to low-income women with children, only about half of these vouchers are currently being redeemed. As a result, consumers are losing access to fresh local



produce, and farmers are also losing a potential income source.

Geographer and Food Systems Professor **Renata Blumberg** of the Department of Nutrition and Food Studies has received a two-year, \$150,000 U.S. Department of Agriculture grant for her project

aimed at bridging the gap between farmers and consumers together.

“Our goal is to analyze how urban farmers markets could play a role in improving both farmers’ livelihoods and the nutrition of low-income consumers with limited access to fresh fruits and vegetables,” explains Blumberg.

“This project will ultimately enable decision makers to formulate policies that would support rural-urban connections that both advance sustainable development in rural regions and reduce the severity of food insecurity in urban areas,” says Blumberg. ■

Underserved Schools Benefit from Grant



With grant support, University AmeriCorps volunteers teach in two community schools in Orange.

With the support of a \$2.5 million, five-year U.S. Department of Education grant — the first of its kind awarded in New Jersey — Montclair State has been making a difference in the lives of public school students and their families participating in the University-Assisted Full-Service Community School Initiative.

Now in its third year, the grant promotes student success and community engagement in two underserved schools in Orange, New Jersey participating in the Initiative.

According to **Bryan Murdock**, the grant’s principal investigator and director of Montclair State’s Center for Community Engagement, the project has been highly successful in promoting student success and community engagement.

“The project has served 1,100 — nearly 100 percent — of the students in each of the schools through in-class support through our

AmeriCorps program, after-school through our service-learning and Bonner Leader program, as well as additional grant programs providing after-school arts programs and homework help,” he says.

While more than 60 Montclair State AmeriCorps members, Bonner Leaders, service-learning students

“The project has served 1,100 — nearly 100 percent — of the students in each of the schools...”

—Bryan Murdock

and interns take part in the project each year, Drew University students have also recently become engaged in the project.

Murdock says students are exceptionally committed to the project’s success. A Montclair State AmeriCorps member at Forest Street School obtained a grant from Lowes for a washer

and dryer for the school, to help families without access to laundry facilities. “Research indicates that children often miss school for lack of clean clothes, so the new washer and dryer are intended to increase attendance,” says Murdock.

“We have so much going on in the project,” says Murdock, who notes that since 2014 the program has significantly increased the number of school day, after-school and summer programs and services in the participating schools, which have seen a notable boost in average student grades.

The schools have also been transformed into true community centers that have enrolled hundreds of parents and community members in a number of adult education, parenting and job-training workshops.

Murdock is especially excited about new health clinics that have been established in each school that offer health and wellness exams, eye exams, hearing screenings, dental

check-ups and behavioral health services as well as family nutrition education.

“Recently, through the Helen Keller Foundation, the clinic at Rosa Parks Community School not only gave eye exams to all 255 students in grades 4-7 at the school, but it will also provide glasses to 96 students,” Murdock explains. ■

SPOTLIGHT: News Briefs

Going Global

Committed to connecting students, faculty and staff to a world of international opportunities, the University's Global Education Center awards biannual competitive grants to faculty. According to the Center's Interim Director **Domenica Dominguez**, the grants support faculty efforts that internationalize the University through collaborations, teaching exchanges and the development of new international partnerships, programs and initiatives.

"This support is critical, as our sustainable international partnerships and programs often derive from faculty initiatives," says Dominguez.

Fall 2016 grants support 10 faculty initiatives that span the globe — from Norway to Cuba, from Japan to Mexico, from Korea to Ghana. Projects will help expand international opportunities for students, ranging from study abroad to internships, to faculty-led trips.

Dominguez, herself, has received an Institute of International Education award that will help support four Syrian students at the University, by contributing to their tuition, fees, books, housing, food, transportation and dependent care expenses. ■

Found in Translation

Students will soon be able to take a unique capstone course in audiovisual translation that will prepare them for careers in translation in creative and cultural industries, with a focus on the internationalization of Italian culture.



Inserra Chair in Italian and Italian American Studies **Teresa Fiore** and Italian Professor **Marisa Trubiano** received a one-year, \$15,000 grant from Italy's Ministry of Foreign Affairs and International Cooperation to design the course.

According to Fiore and Trubiano, the grant recognizes the growth of translation in Italian — and audiovisual translation in particular — at Montclair State. "This is a key area of focus in the Italian program via curricular development, ad hoc projects in both the United States and Italy, and scholarship and internship opportunities," says Fiore. ■

A Blueprint for Sexual Health Education

New York City's public school system recently joined districts from San Diego to Boston in adopting and implementing "Rights, Respect, Responsibility: A K-12 Sexuality Education Curriculum" co-authored by Public Health Professor **Eva Goldfarb**.

The "Rights, Respect, Responsibility," or 3Rs, is the only curriculum that fully meets National Sexuality Education Standards developed in 2012 and is unique in that it is a K-12 curriculum. "The vast majority of sexual health curricula are written for middle and high school grades only, which is much too late," says Goldfarb.

The curriculum — used in 50 states and 68 countries — is free and comprehensive, covers all 16 topics the Centers for Disease Control and Prevention calls essential components of sexual health education, and includes and affirms all sexual orientations. "Everyone deserves respect," explains Goldfarb. "Young people have a responsibility to protect their sexual health, and society has a responsibility to give them the tools they need to do that." ■

Funding an Art Exhibition

A general programming grant from the New Jersey State Council on the Arts will support a retrospective exhibition of paintings by the late American Expressionist painter Ben Wilson from the University's permanent collection.

"An extensive scholarly catalog, a symposium and a line-up of

educational programs are being prepared by the George Segal Gallery," says **Teresa Lapid Rodriguez**, director and curator of the George Segal Gallery and University Art Galleries. Montclair State is home to a large collection of more than 200 works of art by Wilson and his wife, Evelyn, a sculptor, which includes drawings,



"Corrida," Ben Wilson, 1965

collages, sculptures and paintings, and was a gift to the University from their estate. ■

Racial Bias in Perception

Recent research conducted by a University psychology professor suggests that people's perceptions are often clouded by bias. The results, recently published in the American Psychological Association's *Journal of Personality and Social Psychology*, indicate that people perceive black men as larger and more threatening than white men of the same size.

"Our interpretation of the things we see is subject to all kinds of biasing processes that we may not be aware of," says Psychology Professor **John Paul Wilson**. "In some cases, these biases can have powerful consequences."

Wilson's study, "Racial Bias in Judgments of Physical Size and Formidability: From Size to Threat," suggests that misperceptions of the physical size of black men could explain why, even when unarmed, they are more likely to be shot and killed by police than white men. "Data from 2016 suggest that young

black men were nine times more likely than all other Americans to be killed by law enforcement officers and about four times more likely than young white men," says Wilson.

In a series of online experiments, Wilson, the principal investigator, and co-authors from Miami



University and the University of Toronto showed more than 950 men and women photographs of faces and bodies of black and white men of equal height and weight.

When asked to assess the height, weight and strength of the men, participants consistently reported

that the black men were not only larger but also more threatening.

"The most important finding in this work may be the way this bias showed up again and again, not just across racial lines, but even within race," says Wilson of study findings that showed black

respondents also viewed young black men to be more muscular but less threatening than did the white respondents. "In one experiment, we found that not only did participants judge black men to be larger than white men, but that men with darker skin tone who appear more stereotypically black were even more likely to be judged as large."

While Wilson suspects these findings reflect long-held biases, more research is needed to determine how deeply ingrained these biases are. "We don't know yet whether this stereotype can be countered, but we do know that countering biases like this begins with awareness." ■

A Banner Year for Research and Programming continued from page 1

"Over the past decade, NSF funding has become increasingly competitive with proposal success rates hovering around 20 percent, and even lower in some NSF Directorates," says Russo. "Our continued success in this tight funding environment is testament to the high quality of the proposals we are submitting and strength of our research programs and faculty."

The overall increase in grant funding occurred during a time when

Montclair State was also designated a research doctoral university in the national Carnegie Classification of Institutions of Higher Education. The Carnegie Classification reflects the University's growing ability to attract significant funding from federal agencies such as the National Institutes of Health, the U.S. Department of Agriculture and the NSF.

FY2017 shows signs of being an equally successful year, highlighted

by \$4.5 million in total NSF funding received through April, 2017 and \$4 million received from other federal and non-federal sponsors for research and STEM education programs.

Major grants awarded to professors in recent months include highly competitive, national recognitions such as the prestigious Presidential Early Career Award for Scientists and Engineers (PECASE) and an NSF Faculty Early Career Development (CAREER) grant. ■

Addressing a Shortage of Teachers in STEM Subjects

A Montclair State cross-disciplinary research team has received a three-year, \$1,106,026 National Science Foundation (NSF) Robert Noyce Teacher Scholarship program grant to address the shortage of high-quality science, technology, engineering and math (STEM) teachers. The collaborative program between the College of Education and Human Services and the College of Science and Mathematics will prepare eligible

principal investigators Mathematics Professor **Steven Greenstein**, Center of Pedagogy Director **Jennifer Robinson**, and County College of Morris colleague Diana Aria note that the grant will enable them to grow this unique program and actively recruit math majors.

“We’ll be one of the only programs in New Jersey to emphasize exemplary elementary mathematics education through

the development of a major in mathematics specifically for students who want to become certified to teach K-6 students, the new grant will provide 10 students per year with scholarships. “The earlier grant did not provide opportunities for students, which is why we are very excited about this new award,” says Krupa.

With its innovative curriculum, the project’s Noyce Scholars will be able to conduct research in elementary school classrooms and participate in a program of community-oriented field experiences and seminars.

Research focusing on the project’s impact on the Noyce Scholars’ beliefs about mathematics and mathematics teaching is another key project component. And once the scholars begin teaching in high-need New Jersey schools, they will receive ongoing support through monthly seminars and access to a University-based professional learning community.

“Program graduates will receive extraordinary preparation, not only for the cultivation of their future students’ STEM interests and aptitudes, but also for additional school-based leadership opportunities,” Greenstein says. ■



The University is addressing a shortage of STEM teachers through a \$1.1 million grant from the NSF.

math majors to teach math in the New Jersey elementary schools that need them most.

Principal investigator, Mathematics Professor **Erin Krupa**, and co-

our teacher candidates,” says Robinson.

While a previous National Science Foundation Noyce Capacity Building grant funded

Building on a distinguished history dating back to 1908, Montclair State University is a leading institution of higher education in New Jersey. Designated a Research Doctoral University by the Carnegie Classification of Institutions of Higher Education, the University’s 10 colleges and schools serve 21,000 undergraduate and graduate students with more than 300 doctoral-, master’s- and baccalaureate-level programs. Situated on a beautiful, 252-acre suburban campus just 12 miles from New York City, Montclair State delivers the instructional and research resources of a large public university in a supportive, sophisticated and diverse academic environment.



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