MSU Awardees Recognized

On April 19th, the Office of Research and Sponsored Programs and University Advancement hosted the 4th Annual Grant Recognition Reception. The event recognizes Montclair State faculty and staff who submitted proposals and/or received awards in 2015.

Nearly one hundred representatives from throughout the University came together to celebrate an impressive year of grantsmanship: 86 awards totaling over $10.7 million—representing a 10 percent increase over last year’s total.

All attendees were treated to a light lunch, a copy of the reception’s companion booklet, and classical guitar music played by Darren O’Neill of the John J. Cali School of Music.

Provost Willard Gingerich and Vice President for University Advancement Jack Shannon presided over the awards ceremony, celebrating awardees from across the university. Top awardees included: Zoe Burkholder (CEHS), Robert Cart (CART), Christopher Matthews and Katherine McCaffrey (CHSS), Fran Prezant (CHSS), Steven Shapiro (Sprague Library) and Sandra Passchier (CSAM), David Talaga (CSAM), Jorge Lorenzo Trueba (CSAM), and Jennifer Urban and Miriam Linver (CEHS). More details on all of the awardees and their accomplishments can be viewed at ORSP’s website, which includes the Grant Recognition Booklet that each awardee received.

The 2016 Provost’s Award was presented to Dr. Meiyin Wu (CSAM), Director of the Passaic River Institute for her consistent efforts in seeking and receiving funding. Since her appointment in 2009, she has been awarded more than $1.5 million in funding from a number of federal, state, and private sources. Provost Gingerich also commended Dr. Wu for her mentoring of junior faculty and advising of students in support of their research. The afternoon was truly a celebration of a stellar year and an exciting preview of 2016’s coming accomplishments.

Dr. Meiyin Wu, Provost’s 2016 Grant Recognition Award Winner
ORSP’s Director, Ted Russo, was recently invited to Thomas Jefferson University to conduct a workshop on federal acquisition regulation and federal contracting to a group of research administrators who are preparing to take the Certified Research Administrator exam (C.R.A.).

The workshop, entitled “Demystifying Federal Acquisition Regulation,” discussed the complex federal contracting process and highlighted the most common hurdles in negotiating contracts with the government.

After preliminary testing of Cayuse IRB to a half dozen pilot users this past October, the IRB opened the system to any interested users on November 16, and finally, all new IRB submissions were required to be entered via Cayuse on February 1, 2016.

Our office staff is very pleased with the fluidity of the system. Initial submissions generally go into pre-review in 24 to 48 hours of receipt. Our reviewers have commented that it is much easier for them to access and review through the online system.

Most importantly, what are our users saying? How is this impacting our MSU researchers? Below are some responses to our initial feedback survey.

▪ “It was a pretty seamless experience—I liked how it guided you through everything step by step and also provided examples of successful language, etc.” – Faculty member
▪ “I love this new system. It is so much easier than the previous Adobe application! I found it simple to navigate with no formal training, and well organized, so it was much easier and faster to complete (previous version was long and extremely frustrating).” - Staff Member
▪ “System was organized, easy to navigate….Love this system. It was a pleasure to use.” – Graduate Student
▪ And... “I would like to thank the IRB and ORSP for bringing the Cayuse IRB platform to MSU and for greatly improving/streamlining the IRB application.”

As of May 9, we have received a total of 147 initial or modification submissions. Of these submissions, 134 have been approved, 9 are under review and 4 require changes. We are very pleased with the responses and continue to offer trainings in Cayuse IRB monthly. To access dates and times of upcoming trainings go to: https://www.montclair.edu/provost/institutional-review-board/cayuse/training/, or if you would like to request a one on one meeting for IRB consultation or training, just email cayuseirb@montclair.edu.

Our department would like to formally thank Ted Russo and his ORSP team for making Cayuse 424 and Cayuse IRB a reality on the MSU campus. Many hurdles and hoops were jumped and the effort was well worth the results!
Featured Awards

Gerard Costa (Center for Autism and Early Childhood Mental Health, CEHS) received a $200,000 subaward from Prevent Child Abuse New Jersey for the NJ Department of Human Services-funded "Grow New Jersey Kids." The Center will partner with Prevent Child Abuse New Jersey and three Regional Technical Assistance Centers to provide support to GROW NJ KIDS-engaged centers.

Sarah Lowe (Psychology, CHSS) received a $60,000 subaward from Boston University for the US Department of Health and Human Services-funded "The influence of disaster recovery partnerships on mental health in New York City communities affected by Hurricane Sandy." The project will investigate how characteristics of partnerships among community-based organizations in New York City in the aftermath of Hurricane Sandy were associated with residents' mental health, including posttraumatic stress and depression symptoms, and perceived mental health needs. It will also explore how changes in disaster recovery partnerships could mitigate the mental health consequences of disasters. Finally, the project will examine the individual and community characteristics that were associated with receipt of assistance from CBOs and other sources after Hurricane Sandy, as well as anticipated assistance in future disasters. Dr. Lowe will serve as Project Director and Co-Investigator.

Robert Meredith (Biology, CSAM) was awarded $136,451 by the National Science Foundation for "Collaborative Research: Advancing Bayesian Phylogenetic Methods for Synthesizing Paleontological and Neontological Data." This project, in collaboration with Iowa State University, will develop new statistical models, extensions of stochastic birth-death processes, that will integrate information about stratigraphy, taphonomy, and biogeography from the fossil record for use in phylogenetic methods that consider both extant and fossil taxa. The PIs will investigate macroevolutionary patterns in two exemplar clades: Sphenisciformes (penguins) and Crocodyliformes, addressing key hypotheses about phylogenetic relationships, lineage diversification, and biogeography.

Nicole Panorkou (Mathematical Sciences, CSAM) was awarded $49,443 by the Spencer Foundation for "The DYME project: Developing Students’ Thinking of Dynamic Measurement." This project engages students in dynamic measurement (DYME) activities that will assist in resolving misconceptions identified in the literature and developing a conceptual understanding of area and volume measurement.

Jennifer Urban and Miriam Linver (Family and Child Studies, CEHS) were awarded $1,288,328 by the John Templeton Foundation for "Partnerships for Advancing Character program Evaluation." The PACE Project is designed to immediately increase the capacity of participating staff from character virtue development programs to evaluate, improve, defend, and seek funding for their programs.
Awardee Profile: Dr. Pankaj Lal

Dr. Pankaj Lal (Earth and Environmental Sciences, CSAM) is MSU’s newest recipient of the National Science Foundation’s prestigious Faculty Early Career Development (CAREER) Program grant for his project, “Geographic Suitability, Socioeconomic Uncertainty, and Environmental Consequences: Exploring Place-based Opportunities for Bioenergy Sustainability.” We took the opportunity to speak with him about the unique process of preparing, submitting, and winning a CAREER award, which is also discussed on page 6 of this issue.

What are the major aspects of your awarded project?
This project will analyze how geospatial suitability, socioeconomic uncertainty, and life cycle analyses can be used to develop place-based policy solutions for forest and agriculture based bioenergy development in the Midwest and Southern United States. We will study the interactions between climate, soil, topography, bioenergy production conditions, stakeholder participation, and socioeconomic uncertainty and assess its impact on the sustainability and development of such bioenergy markets. The research results will be integrated into public outreach, environmental education, and awareness programs at two minority-dominated, university-assisted schools in the city of Orange, earth day celebrations, and community events.

What were your first thoughts after having received the news that you were awarded?
I was excited to receive the news! I got an email from the program director regarding intent to fund. It took some time and a fair amount of re-reading the email for the news to sink in. Subsequently, I made calls and wrote emails thanking people who helped me out in the submission and were instrumental in getting this award. It is always fulfilling for your peers to see the value in our work and for NSF to invest resources for your research.

What are some of the challenges involved in a project like yours? How are you tackling these?
My project involves working with colleagues from University of Missouri and Virginia Tech; however, their help is completely voluntary as CAREER awards are single investigator awards. Personal networks are important. Talking regularly not only to your research team but also external collaborators is helpful. The project will be carried out in a large part through year-long undergraduate senior research projects, a masters and a PhD graduate student thesis project, and semester-long undergraduate junior projects so student recruitment is a challenge. I am focusing my efforts on this aspect and talking to potential students even before the project has commenced. Investing time in selecting research team members early on will help me save time later when project deliverables are due.

How would you advise colleagues interested in submitting a grant application?
Start early and always get more pairs of eyes to go through the proposal. Be it your peers or research group members! Don’t wait till you are finally happy with your proposal as they might not have much time. You can always ask folks to go through specific sections of your proposal. Serving as a reviewer also helps. I try to review proposals for federal agencies every year and getting to know why some proposals get funded and some not. This helps in streamlining my thoughts when I am writing my own grant proposal. Review work also serves as a rapid update of research status in the thematic area that can be extremely useful. Contacting the program director is another important step in the proposal writing process. I believe it is never too early or too late to talk to them. This was my first submission for this award and I was fortunate to get it, but I try to talk to program directors even for unsuccessful proposals. Polite conversations after unfunded submissions provide information that helps me decide about resubmission or targeting different granting agencies or program areas. Program directors are always eager to help and guide you in the right direction. Specifically, for proposals like NSF CAREER, spending time developing the education section is critical. Focusing mostly on scientific aspects and ignoring the education and/or training plan can tilt the balance unfavorably.
Managing Research Data Management Requirements

Dana Natale
Research Development Specialist, ORSP

The emergence of data intensive science, and the recent establishment of data management mandates, have motivated stakeholders, such as individual researchers, research institutions, universities, and academic libraries, to develop research data services. In 2011, the National Science Foundation—and many other funding agencies since then—began requiring a Research Data Management (RDM) section as part of a grant submission. Typically called the Data Management Plan (DMP), this proposal section details the documentation, curation, and preservation of research data. RDM activities are meant to ensure long-term value and utility of research data for new analyses and replication of study finding.

Although RDM expectations vary based on the funding source, typically:

- Investigators are expected to promptly prepare and submit for publication, with authorship that accurately reflects the contributions of those involved, all significant findings from work conducted under the grant.
- Investigators are expected to share with other researchers, at no more than incremental cost and within a reasonable time, the primary data, samples, physical collections, and other supporting materials created or gathered in the course of work under the grant.
- Grantee institutions are expected to encourage and facilitate such sharing.
- Investigators and grantees are encouraged to share software and inventions created under the grant or otherwise make them or their products widely available and usable.

The National Science Foundation provides proposers the following inclusion guidelines for creating their DMP:

1. The types of data, samples, physical collections, software, curriculum materials, and other materials to be produced in the course of the project.
2. The standards to be used for data and metadata format and content.
3. Policies for access and sharing, including provisions for appropriate protection of privacy, confidentiality, security, intellectual property, or other rights or requirements.
5. Plans for archiving data, samples, and other research products, and for preservation of access to them.

In satisfying guideline number five above, the academic library has become a critical stakeholder in the RDM landscape. As digital data has become more prevalent, and the need to manage them more pressing, libraries have begun incorporating RDM into the research services offered. These RDM services result from the demands of government agencies or university administration; a perceived need to stay relevant in a changing, digital research world; and a thoughtful assessment of the needs of researchers.

Judith Lin Hunt, Dean of Library Services, and her team are current with the institutional repository and data management landscape. Sprague Library uses CONTENTdm, hosted and supported by the Online Computer Library Center, for building and managing its digital archives collections. It is, however, not a substitute for an institutional repository and cannot accommodate data. Associate Dean Mary Mallery chaired a University task force, which performed a stakeholders analysis and a systems review of institutional repository platforms for data management and has selected Digital Commons, an industry-leading suite of tools and services that enables institutions to manage, display, and publish scholarship to the web in a highly visible showcase. Archival materials previously stored on CONTENTdm would be transferred, as well as adding many other types of scholarly materials and data.

References
Libraries and the Research Data Management Landscape, Jodi Reeves Flores, Jason J. Brodeur, Morgan G. Daniels, Natsuko Nicholls, and Ece Turnator.
“Dissemination and Sharing of Research Results,” National Science Foundation, Award and Administration Guide.

Please Visit ORSP Online for NSF templates and samples, including the Data Management Plan
Preparing for Your CAREER

In late July, the National Science Foundation will accept applications for their Faculty Early Career Development (CAREER) Program—a Foundation-wide activity, encompassing all of NSF’s Directorates, that is meant to support junior faculty in the role of teacher-scholars. A successful CAREER proposal must integrate both education and research into its Project Description and strike a balance between both, as well as meet the needs of the University.

An eligible Principal Investigator (PI) must be an Assistant Professor in a tenure-track or tenure-track-equivalent position, hold a doctoral degree by the deadline date, and be untenured until October 1 following the deadline. If your appointment should change, NSF will base your eligibility on the date your appointment becomes effective at your university. Also, a PI cannot apply if her or she has already won a CAREER and cannot have not had more than two CAREER proposals reviewed.

CAREERs have a minimum five-year budget of $400,000, with the exception of the Directorate for Biological Sciences, the Directorate for Engineering, or the Division of Polar Programs—their minimum request is $500,000. In the CAREER guidelines, NSF states that a number of programs and Directorates fund proposals that are closer to the minimum award amount in order to fund more proposals. With that in mind, proposers should discuss typical funding levels with the appropriate Program Officer, or review the list of recent awards to gauge the average award size.

A CAREER submission should include all components required in NSF’s Grant Proposal Guide (GPG). PIs should note that the full CAREER guidelines detail a number of sections with supplemental instructions that supersede the GPG. One of the most important is the Departmental Letter. The letter must be less than two pages in length and confirm the University’s commitment to the professional development and mentoring of the PI. It should not read like a letter of recommendation; rather, it should state how the PI’s department and the University will help your career development in both research and education and must indicate that you are eligible for the award. The CAREER solicitation gives a complete list of all the elements that are required for the letter. Proposals that do not include the Departmental Letter will be returned without review: it does play a role in the review of your proposal.

CAREER Tips

▪ Read the solicitation. The start of every good proposal is reading and understanding the funder’s guidelines. In the case of the CAREER, NSF lays out all the requirements for a successful submission, including the necessary integration of research and education plans. The guidelines also detail specific instructions for some proposal sections that differ from what is described in the GPG.

▪ Contact your NSF Program Officer. The Program Officer is an invaluable resource—so much so that NSF publishes a list of contacts for CAREER submitters. Talk to one and find out if your proposal is appropriate for their directorate or find out if it should have a home elsewhere. Be sure to ask if your budget is competitive.

▪ Start reaching out. Begin with your department chair, who will need to supply the Departmental Letter that is required for the proposal. Do your goals match with those of the department? Also, even though the CAREER solicitation lists relevant literature to assist you with your education plan, you may feel that your proposal would benefit from the assistance of a faculty member in the College of Education and Human Services (and make sure they provide you with a Letter of Collaboration). If you want to review an awarded proposal, contact your colleagues who have received a CAREER or visit ORSP for a sample.

▪ Presentation matters. Considering that the Project Description only allows fifteen pages, many PIs feel the need to make every bit of space count. However, no one benefits from a proposal that is difficult to read. Use a readable font size and one-inch margins. Also, ensure that any diagrams, charts, or graphs have not
To comply with the U.S. Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern, the NSF has recently revised its own Proposal and Awards Policies and Procedures Guide.

What is it?
Dual Use Research of Concern (DURC) is “life sciences research that, based on current understanding, can be reasonably anticipated to provide knowledge, information, products, or technologies that could be directly misapplied to pose a significant threat with broad potential consequences to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security.” In short, to mitigate or minimize the risks of misuse of such research by individuals with harmful intent.

Fortunately, there is a wealth of information available that outlines the type of experimental activity and the fifteen agents and toxins that are governed by the new Policy.

Why was the Government’s Policy established?
The Policy, established in 2014, “seeks to preserve the benefits of life sciences DURC while minimizing the risk that the knowledge, information, products, or technologies generated from such research could be used in a manner that results in harm to public health and safety, agricultural crops and other plants, animals, the environment, materiel, or national security.” In short, to mitigate or minimize the risks of misuse of such research by individuals with harmful intent.

How does this impact the Institution and Investigator?
The Policy requires “institutional review and oversight of certain life sciences research with high-consequence pathogens and toxins in order to identify potential DURC and mitigate risks where appropriate.” In so doing, NSF grant funds that potentially fall within the scope of the Policy must be identified in the proposal.

Upon award, institutions will be charged with monitoring the research and for implementation of all appropriate biosafety and biosecurity risk mitigation measures including compliance with all applicable laws and regulations related to that implementation, including the Policy specified above.

Should you have any questions about DURC, please contact ORSP at ORSP@mail.montclair.edu or extension 4128.

References
NSF Award Administration Updates

The National Science Foundation (NSF) made some significant changes and provided clarifications to its Proposal and Award Policies and Procedures Guide (PAPPG), which all went into effect on January 25, 2016. Below are some of the significant changes with regards to award administration. For a complete list, visit http://www.nsf.gov/pubs/policydocs/pappguide/nsf16001/sigchanges.jsp.

1. **NSF-Approved Extension**: If additional time beyond the extension is required after a one-time Grantee-approved extension period of one year and exceptional circumstances warrant, a formal request must be signed and submitted by the Authorized Organization Representative (AOR) via NSF’s electronic systems 45 days prior to the end date of the grant. A request submitted after the end date of the grant must include strong justification as to why it was not submitted earlier, must explain the need for the extension, and include an estimate of the unobligated funds remaining with a plan for their use.

2. **Grantee Notifications to NSF and Requests for NSF Approval**: This has been revised to state that program-related grantee notifications and requests for NSF approval must be signed and submitted by the AOR using NSF’s electronic systems.

3. **Public Access to Copyrighted Material**: This is an entirely new section which requires awardees to ensure that articles in peer-reviewed scholarly journals and papers in juried conference proceedings:
   - are deposited in a public access compliant repository,
   - are available for download, reading, and analysis within twelve months of publication,
   - possess a minimum set of machine-readable metadata elements as described in the Public Access Policy, and
   - are reported in annual and final reports with a persistent identifier.

   This policy is applicable to awards funded in whole or in part as a result of proposals submitted or due on or after January 25, 2016.

4. **Technical Reporting Requirements**: This section has been revised to state that annual project reports should be submitted no later than 90 days prior to the end of the current budget period. Final project reports and project outcomes reports for the general public should be submitted no later than 120 days following the grant end date. Grants will be financially closed out on the first day of each month for all awards with end dates of 120 or more days prior to the financial close-out day. Corresponding changes have been made with regard to annual and final cost sharing reports.

**Clarifications and other changes to AAG**

*Administrative and Clerical Salaries & Wages Policy*: This is a new section that articulates when direct charging of these costs may be appropriate in accordance with Uniform Guidance 2 CFR § 200.413. Direct charging of these may be appropriate only if all the conditions identified below are met:

1. Administrative or clerical services are integral to a project or activity.
2. Individuals involved can be specifically identified with the project or activity.
3. Such costs are explicitly included in the approved budget or have the prior written approval of the cognizant NSF Grants Officer.
4. The costs are not also recovered as indirect costs.

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Funding STEM Activities Through NSF

In her paper “Effective STEM Teacher Preparation, Induction, and Professional Development,” Dr. Suzanne M. Wilson states that “Offering a high quality education to all U.S. students and building the education system to support their teachers are topics of much concern and investment, passion and critique. Teacher quality is at the core of those ardent discussions, with calls for the reform and critical review of teacher preparation, induction, and professional development programs.”

Over the years, the faculty of the College of Education and Human Services (CEHS) have submitted a number of successful proposals to the National Science Foundation (NSF) focusing on teacher quality, professional development, and learning experiences. These proposals and awards have included programs for Teacher Leaders, STEM Summer Learning, and Assessment as Learning. From 2012 to present, CEHS faculty have been awarded 23% of the total proposals they submitted to NSF.

In 2011, a report issued by the National Research Council titled “Successful K-12 STEM Education: Identifying Effective Approaches in Science, Technology, Engineering, and Mathematics” highlighted five proposals for schools and districts to improve K-12 STEM Education, including enhancing the capacity of K-12 teachers and providing instructional leaders with professional development that helps them create the school conditions that appear to support student achievement. The areas are ones where potential collaborations between faculty from CEHS and from other MSU colleges along with local schools might lead to STEM education projects that are funded by NSF.

Funding for such research is available through the many Directorates within NSF. However, most CEHS faculty would likely find applicable grant opportunities from the Directorate for Education and Human Resources (EHR). Some of the current EHR opportunities include:

- The Robert Noyce Teacher Scholarship Program seeks to encourage talented science, technology, engineering, and mathematics majors and professionals to become K-12 STEM teachers. The program invites creative and innovative proposals that address the critical need for recruiting and preparing highly effective K-12 STEM teachers, especially in high-need local educational agencies.
- The Alliances for Graduate Education and the Professoriate (AGEP) program, whose goal is to increase the number of historically underrepresented minority faculty in specific STEM disciplines and STEM education research fields, by advancing knowledge about pathways to career success.
- Cultivating Cultures for Ethical STEM (CCE STEM) funds research projects that identify factors that are efficacious in the formation of ethical STEM researchers in all the fields of science and engineering that NSF supports. CCE STEM solicits proposals for research that explore the question: ‘What constitutes ethical STEM research and practice, and which cultural and institutional contexts promote ethical STEM research and practice and why?’
- The Discovery Research PreK-12 (DRK-12) program seeks to significantly enhance the learning and teaching of STEM by PreK-12 students and teachers through research and development of STEM education innovations and approaches. Projects in the DRK-12 program build on fundamental research in STEM education and prior research and development efforts that provide theoretical and empirical justification for proposed projects.
- The Research in Undergraduate Institutions (RUI) and Research Opportunity Awards (ROA) funding opportunities support research by faculty members at predominantly undergraduate institutions (PUIs). RUI proposals support PUI faculty in research that engages them in their professional field(s), build capacity for research at their home institution, and support the integration of research and undergraduate education.

Applying for grant funding from NSF can lead to programs and research that continue to grow the effective relationships between Montclair State University and local schools, leading to a more qualified STEM workforce in our area.
NSF Significant Proposal Submission Changes

As of January 25, 2016, the National Science Foundation (NSF) made some important changes to the guidelines that affect those submitting new proposals.

**Collaborators & Other Affiliations**

Information is a new single-copy document that requires each senior project personnel to provide information regarding collaborators and other affiliations to help identify conflicts in the selection of reviewers. This information used to be provided as part of the Biographical Sketch. The new format no longer requires proposers to identify the total number of collaborators and other affiliations when providing this information.

**Biographical Sketches**

now allow proposers to use third-party solutions to develop their biographical sketch; however, the information they submit must be compliant with NSF proposal preparation requirements. In addition, it is no longer allowable for the biographical sketches of all senior personnel to be grouped in a single PDF file. Biographical sketches must now be uploaded separately for each individual identified on the proposal as senior personnel. Biographical sketches for Other Personnel and for Equipment proposals, however, should be uploaded as a single PDF file in the Other Supplementary Documents section of the proposal.

**Current and Pending Support**

has been revised to reflect that all current project support should be listed in this section of the proposal, including internal funds allocated toward specific projects. Current and pending support must now be uploaded as a single PDF file or inserted as text for all senior personnel. It is no longer allowable for the current and pending support of all senior personnel to be grouped together in a single PDF file.

**Dual Use Research of Concern (DURC)**

is a new section and serves as NSF’s implementation of the US Government Policy for Institutional Oversight of Life Sciences Dual Use Research of Concern. The purpose of NSF’s implementation of the Policy is to clarify proposer expectations about NSF-funded research with certain high-consequence pathogens and toxins with potential to be considered DURC (see page 7 for more information).

**Project Summary**

has been modified to remind proposers that only Project Summaries that use special characters may be uploaded in the Supplementary Documents section. Such Project Summaries must contain separate headings for Overview, Intellectual Merit and Broader Impacts or the proposal will be returned without review.

**Project Description**

has been updated to state that URLs must not be used in the Project Description.

**Results from Prior NSF Support**

has been revised to reflect that the information must be provided for any PI or co-PI that has received NSF funding with a start date in the past five years (including any current funding and no-cost extensions). Information also has been added on which types of NSF awards must be reported on in this section of the proposal.

**Proposal Preparation Checklist**

has been updated to reflect the changes made to the GPG and NSF’s electronic systems and streamlined to emphasize the most relevant items. Proposers are strongly encouraged to conduct an administrative review prior to submission, to ensure that proposals comply with the instructions in the GPG and/or the program solicitation, in the format specified.

For a full list of changes, please visit NSF’s website and be sure to download a complete copy of the Proposal & Award Policies & Procedures Guide.