

University Creates New Partnerships with National Park Service, NASA

How can national parks and historical sites attract a greater number and variety of visitors? How can they better prepare for increased wildfires and environmental disasters as a result of climate change? How can they excite a new generation of young talent to create a more diverse workforce?

These are just a few of the challenges the University of Maryland will tackle through a newly formalized partnership with the National Park Service (NPS).

"This new collaboration reaffirms our commitment to being the federal government's 'go-to' resource for science and scholarship," says Patrick O'Shea, the university's vice president for research and chief research officer. "We'll continue to actively seek out similar partnerships that are beneficial for our faculty, the federal agencies and ultimately, society as a whole."

The National Park Service oversees 84 million acres of land and hosts 280 million visitors a year. Existing ties between NPS and UMD include



the work of the Human-Computer Interaction Lab on the NPS WebRangers site, the Future of Information Alliance's seed grant projects, the Cooperative Ecosystem Studies Unit's research in the Chesapeake Bay watershed and internships that introduce students to NPS careers.

The partnership will extend beyond these areas into visitor attraction, climate change response, sustainable architecture, risk communication and more.

Amid a tightened federal budget, "we're looking for partners who can help expand our reach and research and accomplish our mission," says Monique Van-Landingham, cooperating associations and partnerships coordinator.

For example, building energy-efficient visitor centers would be more environmentally friendly—and save money.

A new partnership with NASA Goddard Space Flight Center (GSFC) has created the Joint Global Carbon Cycle Center, inaugurated March 7.

"This center will explore how carbon moves through the Earth system, initially focusing on the land, to understand human and natural drivers, impacts and mitigation options using field methods, satellite imagery and advanced computer models," says John Townshend, dean of the College of Behavioral and Social Sciences.

Principal investigator and geographical sciences Professor George Hurtt says, "Carbon is the basis of life, has large and changing reservoirs and exerts a strong influence on climate, and climate change is one of the biggest challenges we face."

The center was established through a NASA Space Act Agreement, designed to foster external partnerships with the agency.

Selected Joint Projects with NPS and NASA Goddard:

SAFE SPACE AND KNOWLEDGE DISCOVERY: SOCIAL MEDIA IN THE NATIONAL PARK SERVICE: The NPS Junior Rangers program gives kids the chance to experience life as a park ranger. Now, a Future of Information Alliance team is creating a social media platform that will complement the in-person programming, as well as encourage students to enter STEM (science, technology, engineering and mathematics) fields.

CARBON MONITORING IN MARYLAND FORESTS: Geographical sciences professors Ralph Dubayah and George Hurtt are leading a project to map the forest resources of Maryland as part of NASA's Carbon Monitoring System program. They analyze data obtained through laser-based remote sensing technology to determine the amount of carbon in the forests of each county. This gives policymakers more information to decide on new development or reforestation projects that could release or absorb carbon.

FOREST FIRE: ISTOCK, OTHER PARK PHOTOS: NATIONAL PARK SERVICE

"This formalizes existing relationships between the earth science community here and the geographical sciences department at Maryland, and opens up new opportunities for broader collaborations," says senior biospheric scientist Compton Tucker, the lead GSFC contact.

In the near future, the partnership will focus on improving satellite remote sensing to observe and model vegetation structure and land-use change, as well as modeling human activities that affect the carbon cycle. The center will also provide unique joint education opportunities for undergraduate, graduate and postgraduate students.



From left, John Townshend, dean of the College of Behavioral and Social Sciences, Wallace Loh, president of the University of Maryland, and Christopher J. Scolese, director of NASA Goddard Space Flight Center, at the launch of the Joint Global Carbon Cycle Center.

THE FEDERAL CORNER

UPDATE FROM THE OFFICE OF FEDERAL RELATIONS

New Immigration Bill Could Increase STEM Foreign Talent

New legislation could help the United States attract and keep highly skilled STEM (science, technology, engineering and math) immigrants and improve the economy through increased investment in new businesses, particularly those coming out of university research.

When U.S.-educated immigrants leave because of visa backlogs and increased competition from other countries with low-tax, business-friendly environments, the United States loses its competitive edge in the global market. Startup Act 3.0, introduced in the U.S. Senate in February, is designed to curb that problem.

The bill would create a new five-year STEM visa for 50,000 foreign students

who earn graduate degrees in those fields, putting them on a path to citizenship. The legislation would also help accelerate the commercialization of university research through federal research and development funding.

The act is pending in Congress.

In 2012, immigrant-founded companies employed 560,000 workers and generated \$63 billion in sales, according to the Kauffman Foundation, which focuses on entrepreneurship.

Physics Professor Earns Presidential Honor

President Barack Obama has named physics Professor Sylvester James "Jim" Gates Jr. a 2013 recipient of the National Medal of Science.

The medal recognizes individuals who have made outstanding contributions to science and engineering.

Gates is known for his groundbreaking work in supersymmetry and supergravity, areas closely related to superstring theory. In 1983, he co-wrote the seminal book "Superspace or 1001 Lessons in Supersymmetry." He also is widely recognized for his work popularizing science, promoting the importance of research and science education and enlightening young people on the fun, wonder and opportunities of careers in science and engineering.

Gates is a member of the President's Council of Advisors on Science and Technology and has served as a consultant for multiple U.S. government agencies and corporations.



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We introduce you to new faculty and research scientists in the Maryland research community.



Amanda Bailey is an associate professor of English. She studies Shakespeare, early modern drama, early modern legal studies, political theory, economic history and the history of masculinity in literature.



Shuo Chen is an assistant professor of biostatistics. His research focuses on developing statistical methods for complex high-dimensional biomedical data, including neuroimaging and proteomics data, by using machine learning, Bayesian methods and functional data analysis.



Christopher Jewell is an assistant professor of bioengineering. His lab is studying new ways to treat autoimmunity and infectious disease by engineering biomaterials that help shape or control immune response.



Leah Findlater is an assistant professor of information studies. Her research on human-computer interactions focuses on lowering barriers to using technology and accessing information through personalized adaptation.



Alberto Rossi is an assistant professor of finance. His primary research fields are empirical asset pricing and financial econometrics.

Researchers to Study Impact of Maryland Dream Act



Michelle Espino



Colleen O'Neal

Two education researchers will start investigating the impact of a landmark state law that allows undocumented immigrants to attend Maryland public universities at in-state rates.

Passed in November 2012, the Maryland Dream Act gives students new opportunities, but also forces them to reveal their citizenship status, something K-12 schools in the state don't require. School of Education assistant professors **Michelle Espino** and **Colleen O'Neal** plan to track these students' stress, emotions and academic performance from senior year of high school through college graduation, as well as study the policies and procedures of higher education institutions throughout the state and how these affect this group.

"Our overarching goal is for service equity, regardless of immigration status," O'Neal says.

To obtain in-state rates, students must be tracked by the college they attend. The law requires students to attend high school in the state for three years, while they or their parents pay state income taxes, then complete 60 hours of community college before they can transfer to a four-year institution.

The research combines two areas of expertise: Espino studies educational pathways, particularly for Latino students, and O'Neal studies stress and resilience in minority and immigrant children.



FACULTY AWARDS & HONORS



Journalism Professor **KEVIN KLOSE**, former dean of the Philip Merrill College of Journalism, is now acting president and CEO of Radio Free Europe/Radio Liberty (RFE/RL). He has extensive journalism experience, especially in radio broadcasting, including serving as president of RFE/RL from 1994 to 1997 and National Public Radio from 1998 to 2008.



ANDRES DE LOS REYES, assistant professor of psychology, received the 2013 American Psychological Association Distinguished Scientific Award for Early Career Contributions to Psychology for assessing and treating mental health disorders in children and adolescents.



Former UMD President **C.D. MOTE, JR.**, the Glenn L. Martin Institute Professor of Engineering, is the sole nominee for the presidency of the National Academy of Engineering (NAE). The NAE is part of the National Academies, which includes the National Academy of Sciences, Institute of Medicine and National Research Council.

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For more information: geronimo@umd.edu



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Office of the Vice President for Research

2133 Lee Building
University of Maryland
College Park, MD 20742-5121
www.umresearch.umd.edu

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*Produced by University Publications for the Division of Research
Patrick O'Shea, vice president for research and chief research officer*

*Executive editor: Anne Geronimo
Managing editor: Karen Shih
Art director: Jennifer Paul*