Mason SCIENCE

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Wednesday, April 19, 2023 **science.gmu.edu**

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A message from the Dean

FERNANDO R. MIRALLES-WILHELM

Thinking big (and small) in the Quantum Realm

by Fernando Miralles-Wilhelm

Leave it to the Marvel Comic Universe to find a way to inspire the next generation of scientists. With the 2015 cinematic introduction of the Ant Man character's storyline and its recent sequel, we have been transported to the Quantum Real, a vast subatomic universe waiting to be explored. Seeing as we recently celebrated World Quantum Day last week, I thought it might be interesting to share quantum theory origins, and the multi-disciplinary work being done in four areas of quantum science at Mason.

Today, our teams are working to 1) create algorithms for quantum computing, 2) construct ultra-sensitive quantum sensors, 3) design and discover quantum materials for new computing technologies, and 4) develop programs to prepare the next generation for these technologies. But how did the field originate?

Quantum information and materials science are not just made up for movies. In fact, as our colleagues in physics, mathematics, chemistry, and engineering know, quantum study is very real and robust. And similar to other scientific advancements we study and research, for example as global positioning

systems have changed the way we live and navigate our world, this quantum field has the ability to impact sectors including artificial intelligence, data informatics, materials science, and healthcare, while generating new industries of the future.

Read full message

MASON SCIENCE COMMUNITY

2023 Presidential Faculty Excellence Awards

by Mason's Stearns Center award notification

George Mason University President Gregory Washington has announced the recipients of the 2023 Presidential Awards for Faculty Excellence, honoring 12 Mason faculty members for their work on behalf of the university, students, and the broader community.

Congratulations to Dr. Gwendolyn Lewis, (Neuroscience); Dr. Giorgio A. Ascoli, (Neuroscience) and Dr. R. Chris Jones (Environmental Science and Policy) on receiving the Faculty Excellence in Teaching, The Beck Family Presidential Medal for Faculty Excellence in Research, and the Earle C. Williams Medal for Excellence in Social Impact awards respectively. Each will be honored at a reception May 11.

Learn about our recipients

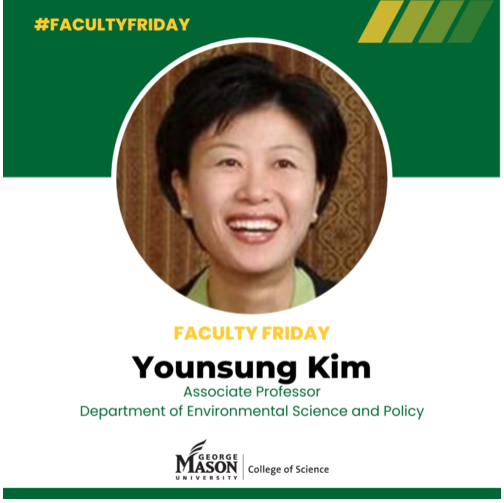
Alumni success - meet Wren Bell

by Wren Bell

Mason alumna Wren Bell graduated from Mason in December 2022 with a major in environmental science and policy concentrating on ecological science with minors in conservation studies and computer science. She now works for Prince William County's Watershed Management Division as a field technician. Her responsibilities include going out and monitoring restored and unrestored streams, looking at macroinvertebrates, structure, stream chemistry, and handling wetland delineations. *Photo provided*.

More on Wren's experience

#FacultyFriday highlights ESP associate professor



Last week's #FacultyFriday featured Dr. Younsung Kim, Associate Professor and Undergraduate Program Director for ESP. Kim's research lies at the nexus of governments and businesses on topics related to environmental sustainability and carbon management. We congratulate Kim for her recent nomination for the 2022 David P. Baron Best Paper Award for the article, "Integrated Market and Nonmarket Strategies: Empirical Evidence from the S&P 500 Firms' Climate Strategies," where she analyzed how firms' carbon strategies influence mandatory carbon policies in the U.S. View the original Instagram post.

See recent faculty highlights

RESEARCH & DISCOVERY

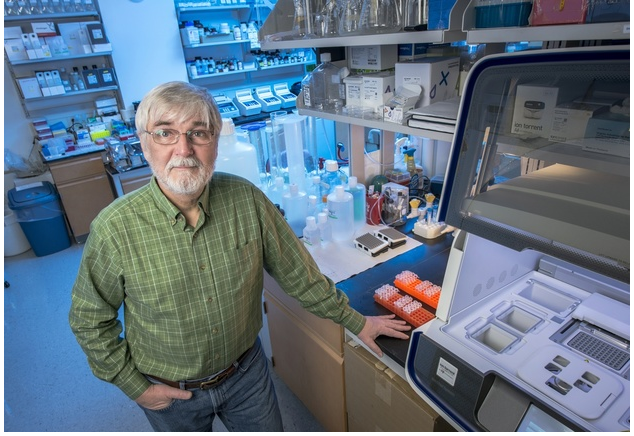
New Mason study could impact the way scientists measure gene expression

by Laura Powers

The way researchers measure gene expression can impact their study findings according to a new study from George Mason University. In their latest study, Dr. Ylenia Chiari, Assistant Professor of Biology, and Dr. Scott Glaberman, Assistant Professor of Environmental Science and Policy, as well as biology alumnus Nickolas Moreno, studied how different experimental techniques, including sampling method and sample storage, affect gene expression measurements. *Image of westslope cutthroat trout (Oncorhynchus clarkii lewisi). Photo courtesy of James Dunnigam.*

Explore their findings

Mason study aims to expedite and lower the cost of treatment for veterans with cirrhosis



by Elizabeth Grisham

Dr. Patrick Gillevet, Professor, Biology; Director, MicroBiome Analysis Center, received $75,000 from the Department of Veterans Affairs Medical Center for research that will validate a microbiome test for identifying hepatic encephalopathy in veterans with cirrhosis. The early differentiation of hepatic encephalopathy from other cognitive disorders, such as post-traumatic stress disorder, will accelerate and lower the cost of treatment. *Photo by Evan Cantwell/Creative Services*.

More on this study

IN THE NEWS

West Texas in the midst of peak season for dust storms

by Juhi Varma

Daniel Tong, research scientist at NOAA and an Associate Professor of Atmospheric Oceanic and Earth Sciences, recently appeared in a *Houston Chronicle* article on dust storms saying “spring is the dustiest season in northern Chihuahua.” According to Tong, the frequency of dust storms increased 240 percent from the 1990s to 2000s. Tong was also recently quoted in an article by *Yahoo! News* on the dangers of Dust Storms.

Read full Houston Chronicle article

Happening at Mason

2023 Anti-Racism and Inclusive Excellence Seed Funding call for proposals

The Office of Research Innovation and Economic Impact (ORIEI) in collaboration with the Office of Diversity, Equity and Inclusion is excited to announce the second annual ARIE Seed Funding Initiative. This funding will support research, scholarship and creative activities addressing the myriad issues on the theme of anti-racism and inclusive excellence. Projects may be either highly scholarly or highly practical/applicable.

How to apply

New Office of Community College Partnerships to support the Mason Virginia Promise

George Mason University is launching an Office of Community College Partnerships to expand the Mason Virginia Promise, a program that guarantees every Virginian the opportunity to earn a four-year degree or assistance to start a business. The Office of Community College Partnerships will be home to the ADVANCE Program partnership between Mason and Northern Virginia Community College as well as budding partnerships with community colleges across the state. *Photo by Evan Cantwell/Creative Services*.

More on this new office

Cultivate science confidence: be a Northern Virginia Science and Engineering Fair Judge

Want to inspire and influence the next generation of critical thinkers and creative problem solvers? George Mason University's SciTech campus is the scene for this year's Northern Virginia Science and Engineering Fair (NVSEF). On Saturday, April 29, 2023, take time to engage with some great projects from local students in grades K-8 and share feedback to help them professionally and scientifically grow. Added perk—breakfast and lunch will be provided.

To participate as a judge, please fill this form as soon as possible:

Get more NVSEF details

Events

NSF GRFP Information Sessions

April 20, 2023 | Noon to 12:30 p.m. | Register for location details

Are you planning to pursue a graduate degree in STEM? Are you a first-year STEM student? If so, you may be eligible for the National Science Foundation Graduate Research Fellowship Program, which provides funding for three years of grad school. Attend an upcoming information session hosted by the Office of Fellowships. Register to attend.

Earth System Observations & Modeling (ESOM) Graduate Symposium

April 21, 2023 | 7:30 a.m. to 6:30 p.m.

Returning for its fourth year, the ESOM Graduate Symposium encourages earth science graduate students from George Mason and other institutions to share their research focused on observational and modeling topics related to our climate. Register to attend.

STEM Transfer Day

April 21, 2023 | 10 a.m. to 2 p.m. | Fairfax Campus

Join Mason's College of Science, College of Engineering and Computing, and College of Public Health to explore our transfer-inclusive community, and learn more about George Mason's Carnegie Research 1-ranked, STEM and Health programs. Explore cutting-edge STEM facilities, research, and internship opportunities; connect with Mason STEM faculty and transfer students; win Mason swag and other prizes, and more. Registration required.

Mason Science Series Spring 2023 featuring Dr. Alessandra Luchini

April 25, 2023 | 4 to 6 p.m. | Country Club of Fairfax

Join the conversation with Dr. Alessandra Luchini, a professor in Mason's Center for Applied Proteomics and Molecular Medicine (CAPMM) and the director of the Biosciences PhD Program within the School of Systems Biology, to discuss her research and the role of Mason's Center for Applied Proteomics and Molecular Medicine.

Spring into STEM

April 29, 2023 | 10 a.m. to 1 p.m. | Hybla Valley Community Center

The College of Science has partnered with the College of Engineering and Computing to host the upcoming Spring into STEM community outreach event. Spring into STEM is a free Saturday event for K-12 students that will expose students to team building, collaboration, and using their creativity to learn more about STEM.

See Full Calendar

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Read the College of Science's latest annual report

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