



Research and Scholarship

JMU Research, Scholarship & Creative Endeavors

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Dear students, faculty, alumni, staff, partners and friends of James Madison University, we sincerely hope that you and your families are safe and in good health during these unprecedented times brought on by the COVID-19 pandemic. Before moving into a new collection of JMU scholarly achievements and highlights, we would like to share some information regarding COVID-19 and JMU operations:

James Madison University officials have been closely monitoring the spread of the COVID-19 pandemic, partnering with the Virginia Department of Health and public health experts here on campus to adjust university operations at home and abroad. Our primary goal is to protect the health and safety of our faculty and staff, students and the greater Harrisonburg community. In recent weeks we have moved classes online through the spring semester, encouraged telecommuting for employees when possible and cancelled or postponed all on-campus events through at least May 15. This includes postponing commencement ceremonies.

This level of operational change is unprecedented in our history. We are deeply thankful to our faculty and staff who continue to work tirelessly during these challenging times to support our students and make the changes necessary to protect our community's well-being. To our students, we are deeply sorry for these incredible disruptions in your lives, but we also know that Dukes are caring, resilient, and capable of working together to meet any challenge.

Please visit the following links for the most up-to-date information regarding [COVID-19 in Virginia](#) and [JMU academic and campus operations](#).

While the past few weeks have presented immense challenges for the JMU community, we are inspired by the many positive actions in response to the COVID-19 pandemic. Here are a few examples of JMU lending expertise and assisting those in need:

- Academic Affairs faculty and partners from across the university teamed up to [gather and donate](#) much needed [medical supplies](#) for local health care workers.
- Industrial design students and faculty organized a university-wide effort [to produce PPE supplies](#) for local health care workers and first responders.
- The IIHHS Gus Bus adjusted their operations [to provide reading activities through virtual channels](#).
- A [video message from JMU President Jonathan Alger](#) after a busy and productive transition to online classes.

- Dean Bob Kolvoord of the College of Integrated Science and Engineering provides this [video address reminding students to think about how we can improve on the status quo](#) during this unique set of circumstances, and use both virtual and in-person classrooms as laboratories for innovation to ultimately make JMU and the world a better place.
- Political science faculty member Tim LaPira [addressed the idea of a “virtual Congress”](#) in a piece co-authored with his colleague James Wallner.

Office of Research & Scholarship
James Madison University



Sharon Lovell, Dean of the College of Health and Behavioral Studies, and her husband, Rob, packing up supplies for local health care workers.

Faculty Grant Awards

For a monthly listing of recent faculty grant awards, please [visit the JMU Office of Sponsored Programs website](#). Here are some notable awards from January 2020:

Jaime Lee (Department of Communication Sciences and Disorders) received a \$35,917 award from the Rehabilitation Institute of Chicago to evaluate whether a computerized speech-language treatment delivered by a virtual therapist results in improved written communication skills of study participants with aphasia.

William Lukens (Department of Geology and Environmental Science) received \$35,842 from the University of Louisiana at Lafayette to leverage an archive of ~100 fossil wood specimens to perform high resolution, seasonal paleoprecipitation reconstructions for three localities across the Paleogene to Neogene.

Jonathan Monroe (Department of Biology) and Christopher Berndsen (Department of Chemistry and Biochemistry) received \$425,383 from the National Science Foundation to investigate the catalytic and starch-binding properties of the WT and mutant enzymes in detail.

Bethany Nowvickie (JMU Libraries) and Joanne Gabbin (Furious Flower Poetry Center) received \$150,000 from the Andrew W. Mellon Foundation to develop a model for integrated library support of a living academic center for the arts with archival, scholarly, and performance components for the Furious Flower Poetry Center.

Sean Scully (Department of Physics and Astronomy) received \$31,900 from NASA Goddard to explain the primary origin of the flux of high energy ν 's and of relating it to extragalactic sources of γ -rays and cosmic rays.

Emily York and Shannon Conley (School of Integrated Sciences) received a \$40,000 award from the Colonial Academic Alliance to study the impact of multi-disciplinary collaborative teaching as a method of modeling sociotechnical integration in the classroom for STEM students, toward the end of engaging STEM students in ethical reasoning as a habit of mind.

CISR Attends UN Meeting in Geneva



Interim director of the [Center for International Stabilization & Recovery](#) (CISR) Suzanne Fiederlein and CISR communications manager Heather Holsinger attended the 23rd International Meeting of Mine Action National Directors and UN Advisers (NDM-UN23) in mid-February at the United Nations Office at Geneva. Focus areas of the 2020 meeting included: linkages between mine action and the environment; sustainable mainstreaming of diversity in mine action; the use of technology and digital engagement in risk education campaigns; regional approaches to mine action; opportunities of mainstreaming mine action into development; partnerships in humanitarian emergencies; and multi-stakeholder and non-traditional partnerships for collective solutions to the threat of improvised explosive devices. Fiederlein facilitated a panel discussion, “Accident and Incident Reporting Requirements: Burden or Essential Learning Tool,” which featured a presentation by Holsinger focused on CISR’s Accident and Incident Database.

When asked about the experience, Holsinger commented, “Aside from the fact that it is held at the United Nations in Geneva, Switzerland – which in itself is amazing – we were among a crowd of over 600 people from around the world working toward the shared goal of removing explosive hazards that impede the life and livelihoods of civilians impacted by conflict, and facilitating the rehabilitation of those people and their communities. It is an honor to meet the authors who write articles for [The Journal](#) ... [and] attending these meetings is a humbling experience and reinforces the importance of the work we are doing at CISR.”

College of Education Course Aids Local Immigrants

A March story profiled [a class providing real-world, engaged learning opportunities](#) for students and resources to the local community. Developed by Michelle Cude, a professor in the middle, secondary, and math education department, “The class comes from a 10-year partnership with Skyline Literacy—a program devised as a resource for immigrants to

receive aid when learning English and preparing for their citizenship test. By partnering with Skyline, JMU students gain teaching experience in a cross-cultural setting with ESL (English as Second Language) students. Comprised of mostly college seniors who are studying to be civics teachers, the class allows future educators to utilize skills that had previously only been theory, while simultaneously meeting a growing need in the local immigrant community.”

Digital Evidence Training for Virginia Prosecutors and Law Enforcement Hosted at JMU

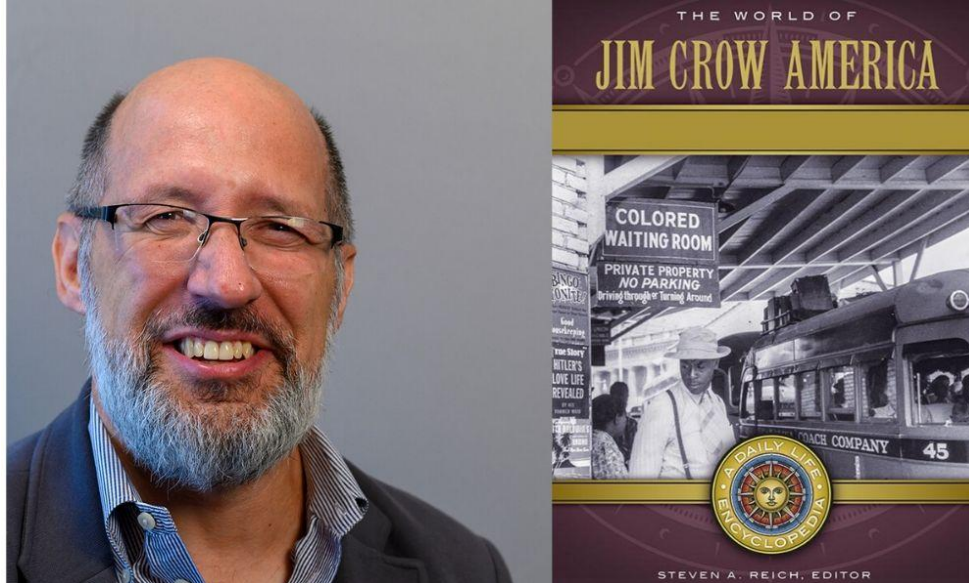


School of Integrated Sciences faculty member Edna Reid, JMU President Jon Alger, Dean of the College of Integrated Science and Engineering Bob Kolvoord, and Commonwealth’s Attorneys’ Services Council Staff Attorney Elliott Casey discuss the conference prior to the welcome address.

Earlier this spring semester, JMU hosted approximately 175 prosecutors and members of law enforcement for the Commonwealth’s Attorneys’ Services Council’s 2020 CIIFER conference. The Cyberattacks, Internet Investigations, Forensic Analysis and Electronic Records conference featured in-depth basic and advanced training on cyber-attacks, forensic analysis of digital devices, and obtaining digital records from third parties such as cellphone and internet providers. A number of sessions were open to JMU students studying intelligence analysis, while School of Integrated Sciences adjunct faculty member Edna Reid delivered the Ransomware Simulation Workshop for Managers.

Additionally, Reid was recently featured in a *Virginia Business* [story about JMU’s online Cyber Intelligence Graduate Certificate program](#) (analysis of cybersecurity threats and adversaries), which included the perspective of a member of the inaugural class, Mary Lou Bourne, director of the [Office of Technology Innovation and Economic Development](#). Bourne commented, "It’s easy to forget that behind every single major ransomware attack or a smaller-scale hack is a person or people who need to be understood. I didn’t expect to love studying how ethics and philosophy impact our cyber decisions or my career."

CAL Faculty Publishes Encyclopedia on Jim Crow America



Research & Scholarship sat down with history professor Steven Reich to discuss his scholarship and [the publication of *The World of Jim Crow America: A Daily Life Encyclopedia*](#). The two-volume piece covers a broad spectrum of topics during this hundred-year period of legal segregation, including arts, economics and work, family and gender, fashion and appearance, food and drink, housing and community, politics, warfare, recreation and social customs, religion and belief, and science and technology. Connecting the painful lessons learned to the present era, Reich stated, “The Jim Crow period should alert us to the consequences of a society that consciously excludes talent from access to wealth, opportunity, governance, and the ability to contribute to the life of society. It impoverishes the entire nation.”

JMU STEM Center Collaborates on White Paper

In February 2019, the collaborative of faculty from George Mason University, James Madison University, the University of Virginia, Virginia Commonwealth University, and Virginia Tech was awarded a 4-VA grant [to create a foundational data-based document](#) to inform the development of a statewide STEM network for Virginia. Angela Webb, faculty in the College of Education and Kerry Cresawn, director of the Center for STEM Education and Outreach, represented JMU in this collaborative. The white paper, which was presented to the VA Governor's STEM Education Commission for consideration in the forthcoming VA STEM Strategic Plan, describes this collaborative, the outcomes of the needs assessment, and evidence-based recommendations for developing and sustaining a strategic multi-sector STEM network in the Commonwealth.

Regional Ag Community Attends Hemp Meeting



Partnering with the Rockingham County Office of Virginia Cooperative Extension, JMU hosted a hemp production meeting for growers, faculty researchers, and state and local officials in early March. The all-day meeting of approximately 50 participants included a policy update on the Virginia Industrial Hemp Program; presentations focusing on hemp varieties, pests and beneficial insects, diseases, weed management, and quality and testing by researchers from Virginia Tech, UVA, and JMU (Sam Morton, engineering and Dan Downey, chemistry and biochemistry); and a grower perspective panel ([click here for recordings of the presentations](#)). Since 2015, JMU has been a university participant in the Virginia Industrial Hemp Program, and has facilitated hemp research opportunities for faculty representing at least four JMU colleges – Science and Mathematics, Integrated Science and Engineering, Business, and Health and Behavioral Studies.

College of Business Showker Shoutouts!

Management Faculty Joins Editorial Review Board

Professor of management Ali Shahzad joined the editorial review board of *Business & Society*. Since 1960, *Business & Society* has committed itself to publishing high-quality research that examines the issues and topics that interconnect business and societal concerns. In 2018, the journal's Impact Factor exceeded 5.0, ranking it as a top 20 journal in the business category.

Faculty Receives Best Reviewer Award

Computer information systems and business analytics professor Jeremy Ezell was selected to receive the 2019 Best Reviewer Award for the journal *Communications of the Association for Information Systems*. The award is given for “recognition of outstanding, constructive, timely, and developmental contributions from a CAIS reviewer,” and was [announced at the recent CAIS board meeting](#) at the 2019 International Conference on Information Systems, considered to be the field's primary conference.

COB Research Experience for Undergraduates Program

Bill Wood, academic unit head and professor of economics, and accounting major Jennifer Freebus paired up to work on an article published in *Virginia Policy Review* titled “Common Stock-Related Recusals on the Roberts Court: Financial Implications and a Low-Cost Solution.” The researchers reported on the history of recusals during Chief Justice John Roberts court. When justices hold stock in a company coming before the court, they have to decide whether to sell the stock or hold it and take no part in the case (a

“recusal”). The findings indicate that when justices made a deliberate choice to hold onto a stock, the typical outcome was that they lost money. However, had they chosen to sell off the stock, the results would have been highly variable across the cases.

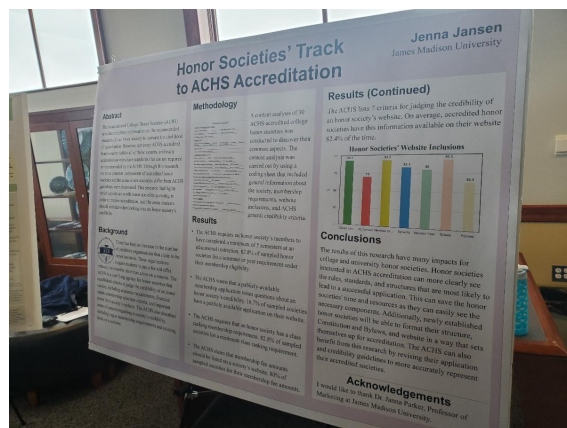
Nursing Student Seeks Out and Thrives in Engaged Learning Experiences

JMU Creative Services recently profiled nursing major Nayeli Juarez. From the story, “After being offered a Centennial Scholarship that covered her costs for all four years, choosing JMU was an easy decision. Since arriving on campus, [Juarez] has been accepted to the nursing program, become a scholar in a grant-funded rural healthcare program and received an additional scholarship to travel to Tanzania to study healthcare abroad this summer.” [Read the full story](#) to learn more about Juarez’s JMU journey and accomplishments.

Students Display Posters at State-wide Research Conference



Christopher Jones’ (engineering) poster -- *Factors Affecting the Development of Makerspaces in Engineering Programs in Sub-Saharan Africa*



Jenna Jansen’s (marketing) poster -- *Honor Societies’ Track to ACHS Accreditation*

James Madison University students participated in the inaugural Virginia Conference on Undergraduate Research and Creative Activity. Held in January at Hampden-Sydney College, the conference was hosted by the Network for Undergraduate Research in Virginia (NURVa), a consortium of higher education institutions focused on sharing resources to increase student success in scholarly pursuits and raise the visibility of undergraduate research in the Commonwealth.

DMA Students Perform at Forbes Center

Doctor of Musical Arts (DMA) students Anqi He and Wendy Wang [performed as part of the Bel Canto Trio concert](#) in February. Held at the Forbes Center for the Performing Arts, He commented, “I am deeply grateful for the opportunity to be able to sing one of my favorite arias as a part of the Bel Canto Trio concert at the Forbes Center.” Anqi He is working toward her DMA in the studio of Carrie Stevens, and holds performance degrees from Anhui Normal University and the Peabody Institute of Johns Hopkins University. Wang holds degrees from the Sydney Conservatorium of Music and Manhattan School of Music, and is under the mentorship of Lori Piitz.

Physics Student Contributes to Galactic Discovery

The JMU Department of Physics & Astronomy, with 20 faculty members and more than 120 students, strives to be a leading undergraduate physics and astronomy department by building a research-active, student-centered community. These efforts were on full display when the research of undergraduate physics major Jenna Harvey [contributed to a historic, scientific discovery](#) – three galaxies containing supermassive black holes on a collision course – a discovery that proved a long-held theory and gained international news attention.

JMU associate professor of physics and astronomy and Harvey’s research mentor on the project, Anca Constantin, explained that black holes are discovered by observing what is around them, “In the distant galaxies, you can get spectra measurements like Jenna is working on and follow the gas and find out how fast it’s moving and if that motion happens at relativistic speed, just a fraction of the speed of light, there’s nothing else that can produce that kind of motion, so then that’s an active galactic nucleus. If there’s an AGN, there’s a supermassive black hole that’s actively feeding on the surrounding material.”

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