



Research and Scholarship

JMU Research, Scholarship & Creative Endeavors

Volume 6, Issue 1

Greetings from Harrisonburg!

It goes without saying that the past year has been incredibly challenging, and we hope you are keeping healthy and resilient, as we collectively look forward to brighter days ahead.

We continue to be inspired by the numerous examples of JMU Dukes lending a helping hand during the pandemic. Just last week, Governor Northam announced Valley Guard Supply's \$1 million investment to [establish a PPE manufacturing facility](#) in Harrisonburg. No strangers to the Shenandoah Valley, Valley Guard Supply was founded by JMU alumni in April 2020. Additionally, Ashlyn Johns, a graduate student in the communication and advocacy program, initiated an effort to [create and share bracelets with positive messages of hope](#) to residents at a local senior living community, helping to lessen the sense of isolation brought on by public health measures.

As the pandemic continues to stress the critical elements that keep our society functioning, let us please remember to share our appreciation for the incredible efforts of frontline workers in our local community and beyond. A special thank you to the hundreds of staff, faculty, students, and volunteers who have played a role in JMU's COVID-19 response. Keep up-to-date with JMU's latest operational plans by visiting the [Stop the Spread](#) website.

President Jonathan Alger penned the introduction for *the Beacon*, JMU's newsletter spotlighting diversity, equity, and inclusion. The [February issue](#) highlights a number of events taking place this spring, as well as voices from across campus that are working to make JMU a more inclusive place. President Alger noted the next [Madison Vision Series event](#), scheduled for February 24th, which will "feature five of our most accomplished Black alumni, and will explore the ways in which their JMU education prepared them for their future careers and lives."

Please join us in congratulating Nick Swayne, Executive Director of 4-VA and JMU X-Labs, who earned his Ph.D. from JMU's School of Strategic Leadership Studies this past fall, successfully defending his dissertation "Determining Faculty Capacity and Inclination for Transdisciplinary Instruction." Way to go, Dr. Swayne!

ISSUE UPDATE: JMU middle, secondary and math education professor Amanda Sawyer was recently [featured in a podcast](#) with College of Education colleagues Katie Dredger and Joy Myers. Hosted by Michigan State University's *Journal of Teacher Education (JTE) Insider*, the interview focused on the JMU faculty's article from the November/December 2020 issue of JTE, "Developing Teachers as Critical Curators: Investigating Elementary Preservice Teachers' Inspirations for Lesson Planning." [Vol. 5, Iss. 7](#) of our newsletter included an earlier publication by Sawyer and educational foundations and exceptionalities professor Katya Koubek.



Learning and creating during a pandemic (with physical distancing and masks).
(photo courtesy of JMU Creative Media)

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 October and November 2020:

Suzanne Fiederlein, Heather Holsinger, and Jennifer Risser (Center for International Stabilization and Recovery) received \$549,998 from the U.S. Department of State to encourage and stimulate the support of programs undertaken by PM/WRA by acting as an information clearinghouse on mine action and CWD issues through identifying, gathering, managing, and distributing information.

Alleyn Harned (Virginia Clean Cities) received \$70,000 to aid CMAQ-area public fleets in developing transition plans, provide information on costs and benefits of conversion, and offer technical support to reach a target deployment of 200 additional vehicles and 20 refueling stations annually.

Kimberlee Hartzler-Weakley (Institute for Innovation in Health and Human Services) received two awards (\$357,415 and \$125,000) from the Virginia Department of Health to direct the Campus Suicide Prevention Center of Virginia as a training resource center, and to provide training, consultation, and support for strategic planning to college and university campuses to build the infrastructure necessary to promote wellness and safety for all students.

Jonathan Miles (Center for the Advancement of Sustainable Energy) received \$20,000 from Repowering Schools to host five regional wind and solar challenges with a culminating state challenge for wind and solar.

Christina Rost (Department of Physics and Astronomy) received \$73,409 from Penn State University to establish the scientific foundation for structure-property relationships in entropy-stabilized oxides (ESO) and use this new found understanding for unique material property engineering.

Education Professor Wins Outstanding Faculty Award

From University Communications:

John Almarode, executive director of teaching and learning at James Madison University, is among [12 recipients of the 2021 Outstanding Faculty Award](#) presented by the State Council of Higher Education for Virginia (SCHEV) and Dominion Resources.

Almarode began his career teaching high school mathematics and science. He now works with pre-service teachers and devotes time to collaborating with in-service teachers in classrooms and schools across the globe. Almarode and his colleagues have presented their work to the U.S. Congress, U.S. Department of Education and the White House Office of Science and Technology Policy. He has authored multiple articles, reports, book chapters and more than a dozen books on effective teaching and learning in today's schools and classrooms.

JMU Researchers Awarded NIH Grant

From University Communications:

For garden plants to thrive, they require some strategic pruning from an astute gardener as they grow. If the garden is allowed to grow at will without any care, the results likely won't be good. A similar scenario may occur in the developing brain, and that's what James Madison University researchers Mark Gabriele and Lincoln Gray [will investigate with a new \\$423,678 grant](#) from the National Institutes of Health.

The grant, the third the researchers have received from NIH since 2012, will enable their student-driven research team to study the role microglial cells play in shaping early neural networks. "Unrefined neural maps might help explain why individuals with autism often exhibit savant-like abilities, as they maintain elaborate networks that may be capable of higher integrative functions," Gabriele said, "but in the same breath, such excess may come at a cost, with sensory circuits that are more prone to hyper-excitability, making highly stimulating environments a challenge."

Research Innovations Earn JMU Faculty 3 Patent Awards



The North American least shrew (*Cryptotis parva*) in an Animal Monitoring Data Station, one of three research innovations to receive a patent award.

The Office of Research & Scholarship (R&S) is pleased to recognize the scholarship and ingenuity of six faculty members whose novel research efforts received patent approval from the U.S. Patent and Trademark Office. JMU's Director of Technology Innovation & Economic Development, Mary Lou Bourne, guided the faculty through the patent application, a process that can take two years or longer to complete. R&S caught up with Director Bourne and three of the researchers [to learn more about the role of patents and different elements of the process](#) (e.g., the underlying research, societal impact, and benefits to students).

Animal Monitoring Station

Inventors: Katrina Gobetz, Bryan Cage

Novel Methods and Reagents for Diagnosing Sjogren's Syndrome

Inventors: Bob McKown, Kyle Seifert, Ron Raab

Triscatonic Amphiphile Compounds, Compositions and Methods of Making

Inventors: Kevin Caran, Kyle Seifert

Office Spotlight: Student Fellowships Advising

The Office of Student Fellowships Advising at JMU works with current students and alumni interested in applying for approximately 90 select external scholarships, fellowships, and awards. Director Meredith Malburne-Wade helps potential applicants identify potential awards and assists them through the application process, from writing competitive statements to preparing for interviews. There are a wealth of opportunities for JMU students and alumni, and JMU applicants have been highly successful. In 2019-2020, for example, 7 JMU applicants received a Fulbright US Student Grant to conduct research or teach abroad in Taiwan, South Korea, Uzbekistan, Kuwait, the Czech Republic, and Australia. Two juniors won the Goldwater Scholarship, the premier undergraduate STEM award. Two students won Boren Scholarships to study abroad in long-term programs, while 10 students won Gilman Scholarships to study abroad over the summer or in semester-long programs. JMU also had a Critical Language Scholarship recipient, a Truman Scholarship Finalist, a North American Language and Culture Assistants program placement, and 2 JMU alumni received NSF-GRFP grants last year.

In 2020-2021, JMU application numbers have been steadily increasing, and early competition results demonstrate success despite the ongoing pandemic. But there is always room for more! Please consider referring students to the office simply by sending an email about your referral (malburmm@jmu.edu). **Faculty referrals are our best tool for identifying applicants.** While you can absolutely send your academic superstars (in fact, please do!), please also consider referring students or alumni with interests in study abroad or living/working abroad, those interested in teaching careers, those interested in leadership or public service of any kind, those focused on language acquisition, and those interested in graduate studies. While some competitions have GPA requirements, many do not: passion and drive can often be more important than grades.

College of Business Research Publications

From COB Marketing and Communications:

Congratulations to School of Accounting professors David Hayes and Jim Irving, who recently published a paper that featured assistance from Michael Johnson, a Research Experience for Undergraduates student. Titled "Christian's College Fund Store—A Forensic Data Analytics Case Study Using IDEA Software," the paper appeared in the *Journal of Forensic and Investigative Accounting*. In keeping with AACSB's Accreditation Standard A5, Information Technology Skills and Knowledge for Accounting Graduates, it strives to help with the requirement of accredited accounting programs to incorporate

technology instruction into their curricula by providing a sample case for students to work with that requires basic proficiency in CaseWare IDEA software, an audit analytical and file interrogation software tool designed to help users identify risks, evaluate internal controls and strengthen fraud detection.

Congratulations to professor of finance Corbin Fox, who recently had an article published in the *Journal of Financial Economics*. Titled “To Own or Not to Own: Stock Loans Around Dividend Payments,” it is co-authored with Peter N. Dixon of the U.S. Securities and Exchange Commission and Eric K. Kelley of the University of Tennessee. The article looks at the reduction in supply of lendable stock shares and expansion in demand to borrow shares with regard to various dividend tax rates, then exploits the exogenous nature of these shifts to causally link these changes in the lending market to wider effective spreads in the stock market.

Congratulations to CIS/BSAN professor John Guo, who recently published research in the journal *Information & Management*. The co-authored paper is titled “An Imposed Etic Approach with Schwartz Polar Dimensions to Explore Cross-Cultural Use of Social Network Services” and is Guo’s second I&M publication in 2019/2020, and the final piece of his social commerce research trilogy. The research introduces the etic approach while examining the moderating effects of Schwartz’s Polar Dimensions on users’ perception of Social Network Service, highlighting cultural issues associated with IS privacy, trust and social capital. The authors found that the effect of perceived reputation is more powerful in American culture than Chinese culture, though network centrality has a stronger effect on use intention among Chinese users than American users.

Theatre and Dance Faculty Publishes Queens Who Read Experience



Dreama Belle poses in full costume in the Children’s Room of the Jefferson-Madison Regional Library.
(Photo courtesy of Zachary A. Dorsey)

JMU School of Theatre and Dance faculty member Zachary A. Dorsey has published an article in the summer 2020 issue of *Review: The Journal of Dramaturgy* titled “When Fierceness and Kindness Collide: The Dramaturgy of a Drag Storytime.” The article [explores his work as a collaborator on Queens Who Read](#) an event where drag queen Dreama Belle (Logan Thomas, a former JMU student) reads stories to children at the Jefferson-Madison Regional Library in Charlottesville, VA. Queens Who Read is co-created by Children’s Services Librarian Angela Critics, and has the distinction of being Virginia’s first ongoing drag storytime series. The program aims to spotlight books that center on loving yourself, textual celebrations of curiosity, imagination, inclusivity, and playfulness. Queens Who Read is partly inspired by Drag Queen Story Hour, an organization whose events around the country and around the globe have grown in

popularity since 2015. Dorsey's larger research project involves interviewing drag storytime organizers, performers, and librarians in order to explore this phenomenon that sits at the nexus of education, performance, and activism. As drag storytimes have grown in popularity they have also become controversial; protesters picket outside libraries, and many drag storytime performers have received death threats. Informed by conversations with Angela Critics, Dorsey concludes in his article that "shutting down a drag storytime is tantamount to saying that the public library is not for all people."

Sociology Professor Authors "Fútbol in the Park"

From University Communications:

They're not sinners, they're not saints, they're not just here to work. The Latino men who gather in parks to play soccer in Harrisonburg and other cities across the country are ordinary, multifaceted people, said James Madison University sociologist David Trouille.

In his first book, "Fútbol in the Park: Immigrants, Soccer, and the Creation of Social Ties" Trouille [dispels some common myths about immigrants](#). Published in January by the University of Chicago Press, the book presents Trouille's research on the men, which he conducted by befriending and playing in the games for about five years while completing his doctorate at UCLA.

Kinesiology and Hart School Faculty Team Up on Disability Sport Study

Kinesiology professor Cathy McKay collaborated with faculty colleagues Emeka Anaza and Josh Pate from the Hart School of Hospitality, Sport and Recreation Management [on an article published in Sport in Society](#) -- "Engaging with wheelchair basketball: analyzing viewer attitudes and actions toward 'the rebound: a wheelchair basketball documentary.'"*

Abstract: Film can be used as an educational tool in a number of ways, including being utilized to educate about disability and disability sport. The purpose of this study was to explore attitudes and actions toward disability sport after viewing a documentary film on wheelchair basketball. A convergent mixed method design was utilized for this study, and data were collected through online questionnaires (quantitative) and focus groups (qualitative). Findings revealed that participants' expectations of disability were transformed by personal stories from within the documentary film. Participants experienced advocacy characteristics such as a desire to educate others, but they were not willing to engage in action. This study shows how film can transform attitudes, but greater facilitation is necessary for full advocacy.

Research & Scholarship caught up with the faculty to learn some additional details about this research experience.

McKay: "It was a pleasure to collaborate with innovative colleagues on this project, working together for over three years to navigate the many facets of this research. Interestingly, a social media post on Instagram sparked a conversation that led to this partnership, as the prouder and director of The Rebound: A Wheelchair Basketball Story (both JMU graduates) reached out to me after seeing a post featuring the Paralympic Skill Lab that I coordinate at JMU. The power of social media is pretty remarkable! We collected data across the US, including in graduate classes in The Hart School and the Kinesiology department's PHETE program, as well as in undergraduate Lifetime Fitness and Wellness Courses. Students who participated in our focus groups collectively expressed that they experienced attitude change and social transformation, indicating that the film supported the development of culturally responsive attitudes, and showcasing how this work was beneficial to students in the JMU community."

Pate: "This project provided an abundance of experiences for us. We were able to show the film to classes and have an engaging, high-level conversation afterward that showed how

important it is to expose students to not just disability, but the daily routines of people with disabilities--which is the focus of the film. We also were able to recruit students to help us distribute surveys at a film festival in Charlottesville, which gave them some entry-level exposure to the research process. Overall, this project showed us how applied research can and does move the needle of education.”

Anaza: “Collaborating with colleagues on research that has the possibility of educating students and others on the lives and abilities of people with disabilities was insightful, inspiring, and most importantly, fun!”

* Tim Mirabito, an assistant professor of journalism and sport media at Ithaca College, is a co-author on the article.

College of Integrated Science and Engineering Student Highlights

From CISE Marketing Communications:

JMU student finds success amidst pandemic

Senior Morgan Moritz, a senior Intelligence Analysis (IA) and Geographic Science (GS) double major, faced a number of academic challenges – including an abrupt transition to online learning and a canceled internship, but she didn’t hit the pause button. Instead, Moritz spent most of her summer working for the American Red Cross in New York City – as a Geographic Information Systems (GIS) intern, [assisting with hurricane preparation and disaster relief efforts](#) during the pandemic.

“I used mapping software to help The Red Cross plan for the upcoming hurricane season, showing where shelters were, capacity of the shelters, and flood zones,” says Moritz. “I had to consider the typical challenges that come with disaster relief during hurricane season and the challenges of COVID-19. Due to social distancing, shelters were not able to house people the same way they did pre-COVID.”

Engineering alum is making a difference

Engineering alumnus Felipe Melivilu ('16) and two friends—Emil Israfil and Elena Guberman—are making a difference with their [data-driven litter collection system](#).

It all started when Guberman took her dog, Larsen, on one of his daily walks. Larsen picked up a littered chicken bone and began to choke. Larsen was fine; however, the incident spurred a discussion among Guberman and her friends about what can be learned and done about litter. They began brainstorming a way to categorize, quantify, and pick up the garbage—and get to the root of the issue.

Approaching the problem differently, Israfil and Guberman developed Rubbish—an app that uses technology to understand and track litter trends. Melivilu, the senior mechanical engineer for Rubbish, invented the Rubbish Beam—a device that picks up the litter. The beam obtains a photo and a GPS point each time a piece of litter is picked up. The device builds out a "litter" map and categorizes the trash to identify where trash cans, and more resources, are needed.

James Madison University | Research & Scholarship | www.jmu.edu/research

