



JMU Research, Scholarship & Creative Endeavors

Volume 4, Issue 3

Greetings from Harrisonburg!

Earlier this month, 15 JMU students traveled to Kennesaw State University in Georgia to [present research projects](#) at the 2019 National Conference on Undergraduate Research (NCUR). Accompanied by Educational Foundations & Exceptionalities Professor Laura Desportes and University Research Process Analyst Rebecca Rohlf, the JMU cohort joined more than 4,600 students and advisors from around the country for the largest NCUR in the 33-year history of the event. View a [JMU photo album from NCUR 2019](#)

Virginia Clean Cities hosted the 2019 Rally at Main Street Station in Richmond on April 4th. The annual fundraiser in support of Virginia Clean Cities' mission included an alternative fuel vehicle demo, awards ceremony, and keynote address by Sheetz's Executive Vice President of Petroleum Supply Michael Lorenz. Upcoming VCC events can be found on their [website](#).

Staff from the Center for International Stabilization and Recovery (CISR) attended the rollout of the 18th edition of [To Walk the Earth in Safety](#), the U.S. Department of State's annual report on global conventional weapons destruction programs. Since 1993, the U.S. has invested more than \$3.4 billion to clear or destroy landmines, unexploded ordnance, and other dangerous conventional weapons and munitions in more than 100 countries. CISR is proud to have produced the report in cooperation with the State Department's Office of Weapons Removal and Abatement in the Bureau of Political-Military Affairs.

Increasing awareness on JMU's campus, CISR hosted a panel presentation during Post-Conflict Recovery Week in early April. "Between two worlds: Refugees, Asylum Seekers, and U.S. Policy" featured members of the local Harrisonburg immigrant community; Alicia Horst, Executive Director of the NewBridges Immigrant Resource Center; and John Meagher ('08, '10M), Program Officer of the U.S. Committee for Refugees and Immigrants. The following week, CISR Communications Specialist Amy Crockett and Managing Editor Jennifer Risser presented "Humanitarian Mine Action Reporting: Lessons of the Present and Trends of the Future" at the 16th International Symposium Mine Action in Croatia.

Office of Research & Scholarship
James Madison University



Engineering students Grace Carter (left) and Beverly Boateng (middle) present their *Dry Run Trail Design* capstone project (team members not pictured – Ryan Cole and Christopher Santaniello). Learn about this and other student projects in the [2019 Madison Engineering xChange Book](#).

Faculty Grant Awards

For a monthly listing of recent faculty grant awards, please visit the [Madison Scholar website](#). Here are some notable awards from February and March 2019:

Suzanne Fiederlein (Center for International Stabilization and Recovery) received a \$330,000 award from the U.S. Department of State to foster management skills at the senior level of global Conventional Weapons Destruction activities by providing senior level managers with the tools and knowledge necessary to make effective policy and practice decisions for increased efficiency.

Keith Holland (engineering and the Office of Research & Scholarship) was awarded \$50,000 from the Virginia Provosts' Initiative for Integrated Economic Development to gather entrepreneur development advocates from across the educational and support pipeline (vertical integration) in GO Virginia Regions 3 and 8 (horizontal integration) to apply the agile, action-oriented Strategic Doing methodology to the challenge of entrepreneur education, development, and retention in the Commonwealth of Virginia.

Stacey Pavelko (communication sciences and disorders) received \$7,849 from the Virginia Department of Education to develop new online modules with interactive technology, providing Speech Language Pathologists the opportunity to acquire and practice clinical skills.

Faculty Scholarship

JMU faculty are producing cutting-edge research, scholarship, and creative works on a daily basis, both within their academic disciplines and through interdisciplinary collaborations. Here are a few recent examples of our faculty's scholarly achievements.

Christina Kilby (philosophy and religion) published [Bowling with Words: Paper, Ink, and Bodies in Tibetan Buddhist Epistles](#) in the *Journal of the American Academy of Religion*.

Chris Mayfield (computer science) published [Guiding Students to Discover CS Concepts and Develop Process Skills Using POGIL](#) in the *Proceedings of the 50th ACM Technical Symposium on Computer Science Education*. Joining Dr. Mayfield on this effort were

Debra Duke from Virginia Commonwealth University and Margarethe Posch from Salt Lake Community College.

Mark Richardson (political science) published [Politicization and Expertise: Exit, Effort, and Investment](#) in the *Journal of Politics*.

Nursing Advocates for Childhood Immunizations in DC



The JMU Nursing delegation meets with Congressman Ben Cline (VA-6).

In late February, four seniors from the JMU School of Nursing (Maureen MacLeod, Valerie Torres, Nellie Young, and Amanda McGuire) accompanied assistant professor of nursing Dr. Tammy Kiser at the Shot@Life Summit in Washington, DC. Part of the United Nations Foundation, Shot@Life works with a network of organizations to provide childhood immunizations around the world. The summit provided an opportunity to advocate for continued U.S. funding and support of the program to both lawmakers and their staff. Dr. Kiser noted that the topic of childhood immunization, as a vital component of addressing the health of populations, is an integral part of the nursing curriculum at JMU. “Communicable diseases are only a plane ride away, so the protection afforded the global community through a simple immunization is so important,” said Dr. Kiser. [View news coverage](#) of the trip.

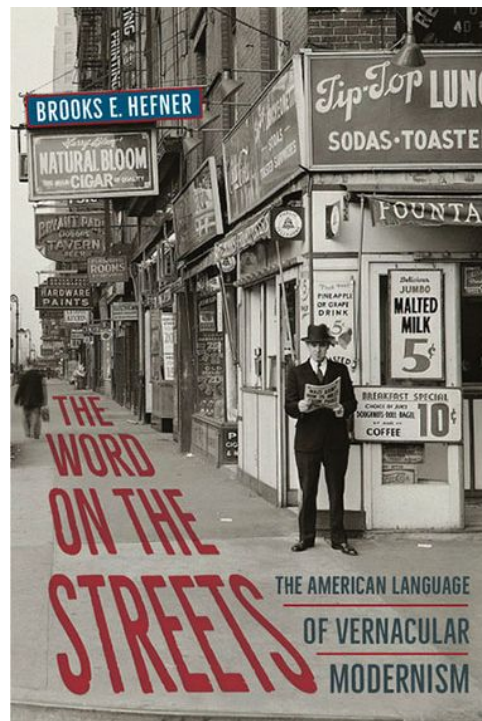
COB Faculty Earns Sport Studies Scholar Award

Joshua Pate, associate professor in the Hart School of Hospitality, Sport and Recreation Management, [was recognized as the Sport Studies Doctoral Alumni Scholar](#) for 2018-19 at the University of Tennessee, Knoxville. Pate earned his Ph.D. in Kinesiology and Sport Studies at UT Knoxville in 2012, and his research focuses on disability sport, the experiences of individuals in sport, and sport communication and media. Pate traveled to UT in February to deliver a public research presentation – Infusing Disability within Recreation and Sport Management, provide guest lectures in courses covering sport and media issues and applied ethics in recreation and sport, and participate in a Q&A with UT’s Therapeutic Recreation Student Association.

English Professor Interviewed by the

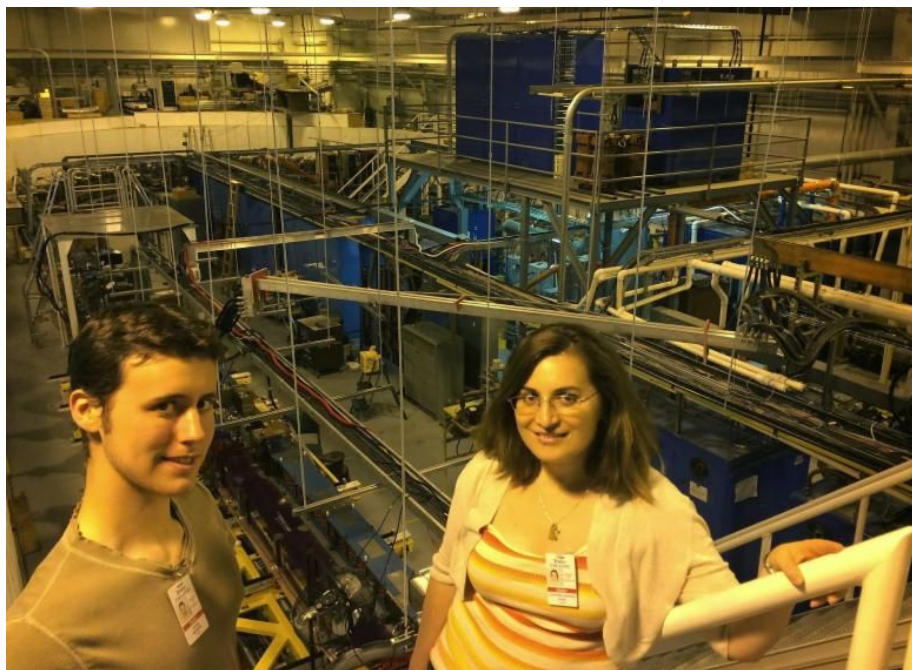
Ransom Center Magazine

Director of graduate studies for the JMU English Department, Dr. Brooks Hefner, [participated in an interview](#) conducted by the Ransom Center Magazine about his latest book -- *The Word on the Streets: The American Language of Vernacular Modernism*. It was a fitting outlet to host an interview with Dr. Hefner, as the Ransom Center's* collections provided a wealth of materials to inform his book, including collections of Dashiell Hammett and Erle Stanley Gardner. In Dr. Hefner's own words, *The Word on the Streets* "argues for a rethinking of American modernism that cuts across traditional boundaries of class, race, and ethnicity. Through readings of humor writing, crime fiction, Jewish-American memoir, and African American urban narratives, *The Word on the Streets* shines a new light on the complicated relationship between modernism and the marketplace, suggesting that popular culture was more than mere raw material to be transformed through modernist alchemy."



*The Ransom Center is a humanities research library and museum at The University of Texas at Austin.

Faculty-Student Nuclear Astrophysics Experiment Leads to Publication



Evan Meekins and Dr. Adriana Banu inside the HIGS facility at Duke University.

Dr. Adriana Banu, associate professor of physics and astronomy, [recently published a research paper](#) in the peer-reviewed journal *Physical Review C - PRC 99, 025802 (2019)*. The paper examines "how the nuclear reactions that occur in stars and in stellar explosions have been forging the elements out of hydrogen and helium leftover from the Big Bang... a long standing, still timely research topic in nuclear astrophysics." This specific investigation focused on two of the rarest neutron-deficient nuclei that occur on earth – the isotopes molybdenum-94 and zirconium-90. The experiment was performed at

Duke University's Triangle Universities Nuclear Laboratory (TUNL), which operates the highest intensity, accelerator-driven gamma ray beam in the world - the High Intensity Gamma-Ray Source (HIGS). This experiment complements the research program at the JMU Physics and Astronomy Department's Madison Accelerator Lab (MAL), an on-campus research facility featuring a medical electron linac and an X-ray imaging machine.

Undergraduate physics major Evan Meekins spent a week with Dr. Banu at Duke University setting up the equipment, collecting and analyzing the data, and is a co-author on the paper. In a blog post describing the experience, Meekins wrote, "The experiment itself required a good amount of work, in setting up the equipment properly, collecting the data, and analyzing the data, but was all extremely intellectually fulfilling. I left the HIGS facility feeling greatly more confident in both my ability to perform experimental physics and my understanding of the fundamental physics behind the experiment." Meekins has since graduated from JMU and is currently in the first year of his residency at Geisinger Medical Center in Danville, Pennsylvania, on the path to becoming a radiation physicist.

Psychophysiological Measures Informing Teaching and Learning Design

Dr. Rich Ingram, assistant professor of educational technology, applies a background in school psychology and instructional systems design to gain insights about teaching and learning, with a goal to design better learning experiences. By analyzing psychophysiological measurements (e.g., EEG - detecting electrical activity in the brain, GSR - detecting characteristics of the skin, and eye tracking - determining fixation gazes, as well as other measures such as pupillometry) featuring the study of learning when engaged in authentic learning tasks in real-world settings, Dr. Ingram and his research collaborators are able to create a more complete picture of how an individual responds to teaching and learning activities.

Recognizing Dr. Ingram's expertise in the field, the organizers of the upcoming [2019 International Academic Forum \(IAFOR\) Conference on Educational Research & Innovation](#) extended him a keynote speaking opportunity at the May event. Ingram's presentation – *The Psychophysiology of Educational Neuroscience* – will take place at Virginia Tech, and include findings from a recent exploratory study addressing affective learning (the role of emotion in learning). This follows a March presentation – *Introducing Educational Psychophysiology* – delivered at the Society for Information Technology & Teacher Education International Conference in Las Vegas, which [was recently published](#) by the Association for the Advancement of Computing in Education. Additionally, in collaboration with colleagues in JMU's College of Science and Mathematics, Dr. Ingram developed an NSF proposal that is currently under review, which aims to further advance the field of educational psychophysiology. The study proposes the examination of psychophysiological correlates of learning-relevant psychological constructs such as cognitive load measured across common science and math learning tasks.

College of Integrated Science and Engineering Student Showcases



Integrated Science and Technology students Daniel Benish, Caleb Smith, and Tikhon Ivanov present their *Feasibility of Tiny House Living* project, which addresses “the feasibility, advantages, and societal impacts of downsizing.” Learn more about this project and others featured during the [JMU School of Integrated Sciences 2019 Senior Symposium](#).

The College of Integrated Science & Engineering (CISE) hosted three showcases highlighting student scholarship – the School of Integrated Sciences Senior Symposium, Madison Engineering xChange, and the Computer Science Poster Showcase. When asked to describe the importance of these events, CISE Dean Bob Kolvoord commented, “In the College of Integrated Science and Engineering, we have a focus on applications and hands-on learning. Our project showcases give our students the opportunity to share their work with each other and with the public and project sponsors. In Engineering and Integrated Science and Technology, these projects can span two years. Our students are proud to share the work that they’ve done and the showcases are a wonderful opportunity to see the next generation of our nation’s best problem solvers in action.” [View the CISE Marketing Flickr site](#) for photos of these and other events.

JMU Launches Center for Inclusive Music Engagement

Inaugurated in December 2018, [the Center for Inclusive Music Engagement](#) (CIME) “seeks to facilitate musicking opportunities for all persons to create, perform, respond, and connect with, in, through, and around music in ways that are meaningful and add richness to individuals' lives and our broader communities.” CIME Director and School of Music faculty member, Dr. David Stringham, noted that the center was developed in direct response to students' expressed needs and interests. One example of how students are involved is through an application process where projects are pitched, ranging from “service-based initiatives to research examining music-learning and music-making.”



Martin Urbach of Liberation Drum Circles and Emily Veramessa, a music education major, facilitated an end of the day bucket drum circle during the Disability Studies and Music Education Symposium. This event used “drumming, chanting and singing in community and as a catalyst for self-realization” to consider key takeaways centering on the disability right concept of “Nothing about us without us.”

The center also advances JMU’s role as a convener of individuals and ideas. Associate Director of CIME and School of Music faculty, Dr. Jesse Rathgeber, helped lead the organization of the 2019 Disability Studies and Music Education Symposium. Held on campus in March, Rathgeber partnered with the Office of Disability Services, JMU Libraries, the Office of Access and Inclusion, the Office of Cross Disciplinary Studies and Diversity Engagement, and the Leslie Flanary Gilliam Center for Entrepreneurship to create a full day of presentations by scholars from around the world and “facilitated discussions exploring additional uses of disability studies literature and theories in music education research and practice.”

Creating an Inclusive Environment in the Laboratory



The Department of Chemistry and Biochemistry at JMU hosts a Research Experiences for Undergraduates (REU) site [that integrates deaf, hearing, and sign language interpreting students in chemical research](#). Participants include students and faculty from JMU and outside institutions that serve deaf students or institutions that do not have extensive research infrastructure. In addition, students participate in a series of professional development activities aimed at enhancing effective science communication with other chemists, scientists in other disciplines, the public and those with communication

disorders.

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