



# VCU Office of the Vice President for Research and Innovation

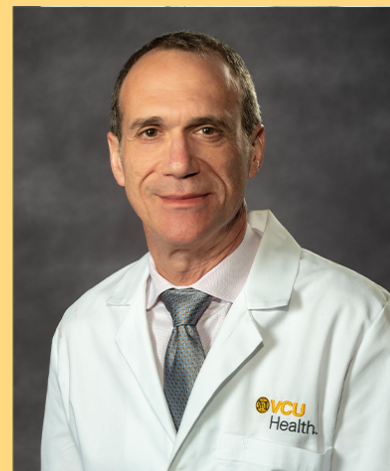


I appreciated the opportunity to participate in the recent conversation on campus with Sen. Mark Warner about the U.S. semiconductor industry and manufacturing. With VCU's rapidly growing research enterprise, robust and diverse faculty experts and our strong statewide collaborations, we are well-positioned to help advance Virginia to the forefront of research supported by the CHIPS Act. I am hopeful that the ongoing conversations and the current legislation will spur additional federal investment in our nation's scientific agencies, like the National Science Foundation. No one group can lead this effort, and Virginia's universities will be critical to educate and train students to provide the workforce needed. As part of a collaborative effort, VCU stands ready to partner with others around the Commonwealth to make Virginia the place to be for the semiconductor industry. Read more about the [conversation](#).

We have had an extraordinary year of progress for VCU research, scholarship and creativity. [The OVPRI and the university provided nearly \\$4.4 million in new internal funding](#) across our [four strategic research initiatives](#) to 55 transdisciplinary faculty projects to address societal grand challenges. Review what VCU faculty accomplished by checking out the latest annual VCU research report, "Shaping the Future," now available online in three formats: a [web-based version](#) and [printable versions](#). In it, you'll see examples of how VCU is using its unique position to shape the future through transformative innovation. And you will certainly be inspired for what is to come. In keeping with that, stay tuned for information on the upcoming new funding opportunities under the One VCU Research Strategic Priorities Plan. Have a great fall semester.

*P. Srirama Rao, Ph.D.*

## Recent research funding highlights



[The National Institutes of Health awarded a \\$3.2 million grant](#) to VCU's Institute for Women's Health in support of junior faculty who will develop as researchers in women's health. The grant will support eight to 10 junior faculty with research focused in areas relevant to women's health. The project's PI is **Susan G. Kornstein, M.D.** (above, left) executive director of the VCU Institute for Women's Health and a professor of psychiatry and obstetrics and gynecology in the School of Medicine.

**The Commonwealth Cyber Initiative is investing about \$900,000** in nine experiential learning projects for Virginia students, covering election security, privacy protection, and digital forensics research areas. **Irfan Ahmed, Ph.D.** (above, center), an associate professor in computer science, is the PI on the project, "Digital Forensics Experiential Learning Program with Virginia State Police."

The School of Medicine's M.D.-Ph.D. program, which enables students to earn both a medical degree and a doctoral degree in a biomedical field, has received **a \$1.2 million, five-year training program award** from the National Institute of General Medical Sciences. The school now holds the "triple crown" of NIH awards: the Medical Scientist Training Program, the Clinical and Translational Science Award and an NCI-designated cancer center, according to MSTP director **Michael Donnenberg, M.D.**, (above, right), senior associate dean for research and research training.



**A five-year, \$3.1 million grant from the National Heart, Lung, and Blood Institute** will enable researchers from the Massey Cancer Center and other regional cancer centers to collaborate in a first-of-its-kind prospective study to look for the earliest signs of heart vessel damage in young, pre-menopausal breast cancer survivors. **Jennifer Jordan, Ph.D.**, a Massey Cancer Center scientist and assistant professor in the Department of Biomedical Engineering and Pauley Heart Center, serves as co-principal investigator of the study.



The Commonwealth's budget this year **provided \$3 million in funding for the Research Institute for Social Equity** at the L. Douglas Wilder School of Government and Public Affairs to significantly expand its role in promoting racial and social equity research, academic scholarship and public engagement on behalf of VCU. The two-year award speaks to the school's vision to help achieve an equitable world for all citizens, one of the research themes of the One VCU Research Strategic Priorities Plan. The institute was founded by Wilder School Dean **Susan Gooden, Ph.D.**, and distinguished professor and **Gov. L. Douglas Wilder**.



**Nicholas Thomson, Ph.D.**, an assistant professor in the Department of Surgery in the School of Medicine and the Department of Psychology in the College of Humanities and Sciences, has received **a three-year, \$2.06 million grant** to conduct a randomized control trial that will evaluate the effectiveness of a modified version of Bridging the Gap in preventing youth from engaging in retaliatory firearm-related violence and becoming injured or killed. The research may provide data beneficial for developing new and existing youth firearm violence prevention strategies across the country.



In the School of Pharmacy, **Qingguo Xu, D. Phil.**, an associate professor in the Department of Pharmaceutics, along with a colleague from Wake Forest University, received a \$2.7 million, 5-year R01 grant, "Sustained release of fenofibrate for the treatment of diabetic retinopathy." His research focuses on the health issues of blindness, cancer and drug abuse, applying engineering principles to better design new biomaterials and nanotherapeutic-based treatments for eye disorders, cancer and other diseases.

## Faculty spotlight



[The VCU School of Education has numerous activities](#) underway with leading universities in Brazil, including a student exchange agreement, class instruction and a research symposium, strong visiting scholars and student programs, and publications focused on Brazil. VCU has several MOUs with universities in Brazil, including the Universidade de São Paulo, the largest public university in Brazil known for its teaching and research on a broad range of topics. Nestor Forster Jr., ambassador of Brazil to the U.S., met with VCU leaders and School of Education Dean **Andrew Daire, Ph.D.** (far left), and Associate Dean of Academic Affairs **Luciana C. de Oliveira, Ph.D.**, (third from left) on a visit to the campus.



A book co-edited by VCU sociologist **Victor Chen, Ph.D.**, was recognized this summer with the [inaugural Joyce Rothschild Book Prize](#) from the Rutgers Institute for the Study of Employee Ownership and Profit Sharing for "significant contributions to the advancement of economic democracy." The book, "Organizational Imaginaries: Tempering Capitalism and Tending to Communities Through Cooperatives and Collectivist Democracy," explores worker cooperatives, credit unions and other alternative organizations where workers or consumers own all or part of the company and have a greater say over decisions.



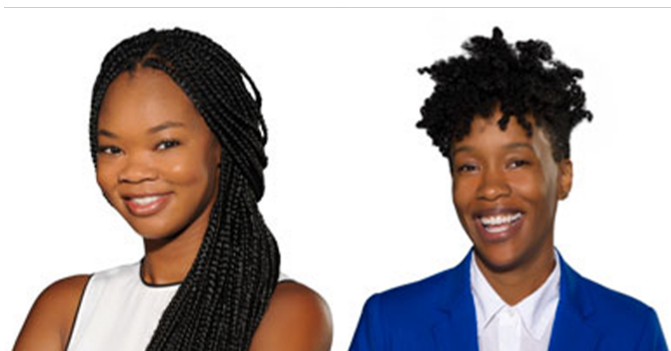
Members of our chemistry faculty have won funding from the National Science Foundation. **Indika Arachchige, Ph.D.**, (left) an associate professor, and **Ka Un Lao, Ph.D.**, (middle) an assistant professor, received two three-year grants from the NSF totalling nearly \$950,000. Their latest project funds research on the fundamental properties of metal phosphide nanoparticles as effective catalysts for splitting water into hydrogen and oxygen fuel. This renewable, clean hydrogen gas could power cars and other motorized vehicles. This work builds on progress they made with the help of a 2021 Presidential Research Quest Fund award and supports the university's research initiative of supporting sustainable energy and environments.

Meanwhile, **Joshua Sieber, Ph.D.**, (right) an assistant professor, was awarded \$600,000 by the NSF Faculty Early Career Development Program. This award honors and supports early-career faculty who have the potential to serve as academic role models in research and education and to lead advances in the mission of their department or organization. The Sieber lab focuses on developing new catalysts and catalytic reactions for application to the synthesis of complex organic molecules of biological significance, such as active pharmaceutical ingredients, in a cost-effective, safe, scalable, and sustainable manner from readily-available feedstocks.

## Research impact



Once enrolled in Virginia's expanded Medicaid program, low-income individuals reported less worries about household finances and medical bills a year later, compared to the year prior to enrollment. **Hannah Shadowen**, an M.D.-Ph.D. student within the School of Medicine's Department of Health Behavior and Policy, is lead author of [a new study published in the journal Health Affairs](#). This is the first study in the U.S. to analyze the changes in subjective financial distress for a population of newly eligible Medicaid enrollees before and after enrollment.



**Jamie Cage, Ph.D.** (left), and **Nicole Corley, Ph.D.**, assistant professors in the School of Social Work, are leading a project funded by the Virginia Department of Education to study the experiences of school-aged children and youth in the foster care system in an effort to understand how transition-aged foster care youth define and make meaning of their school engagement experiences. Approximately 20 youth and 20 foster care parents will participate in individual interviews and/or focus groups. The data collected will help inform best practices and policies regarding foster care youth and school engagement.

The Rice Rivers Center is [engaging with the Chickahominy and Pamunkey Tribes](#) on two major projects in which it is dedicating the center's resources and expertise in support of the Tribes' work to protect and preserve their ancestral lands. The Pamunkey Indian Tribe and the center are working with the U.S. Geological Survey to identify critical water resources, and threats to those resources, for the Tribe's reservation adjacent to the Pamunkey River in King William County. The project for the Chickahominy Indian Tribe is an environmental analysis of its recently re-acquired ancestral property called Mamanahunt, located in the lower Chickahominy River watershed in Charles City County.



[Humanities Research Center director, Cristina Stanciu, Ph.D., \(left\) co-organized international symposium on Indigenous media and literature](#) in July.

This was an opportunity for scholars to discuss Indigenous publications and print culture as part of the center's ongoing initiative, "On Native Ground." The event, held at Johannes Gutenberg University in Mainz, involved a collaboration with Oliver Scheiding, Ph.D. (right), of the Obama Institute for Transnational American Studies at JHU, and others.



As sport organizations increasingly hire staff to advance diversity, equity and inclusion, [a new study](#) led by **Yannick Kluch, Ph.D.**, an assistant professor and the director of inclusive excellence at the VCU Center for Sport Leadership, identifies five specific levels of barriers these employees will face. This study is one of the first looking at the barriers these staff members face when trying to advance DEI in and beyond their athletic departments the five main barriers sport administrators face: structural, cultural, conceptual, emotional and social/relational.



[Arts for Hearts](#) is an event series and clinical trial that **Anika L. Hines, Ph.D.**, an assistant professor and researcher in the Department of Health Behavior and Policy at the School of Medicine, holds to combat heart disease among Black women in our communities. Hines explores factors that could be changed or adjusted to decrease women's risk for heart disease and help lower blood pressure.



Although mindfulness originates within an individual, **Christopher S. Reina, Ph.D.**, an associate professor of management and entrepreneurship researcher, has found that [the benefits do not end with this person](#). The real payoffs emerge when an individual's mindfulness translates into mindful interactions and relationships at work and in workplace interactions.

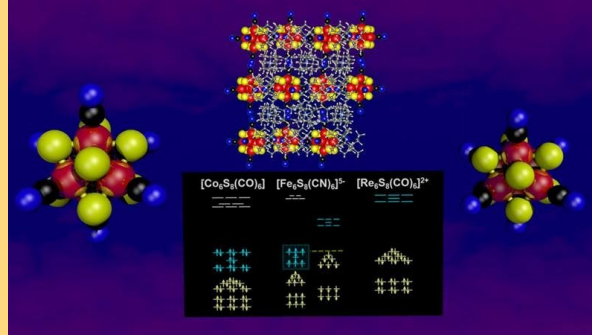
## VCU research in the news

Catch up on the researchers, scholars and creators who were in the news this summer. The July digest research newsletter is at [bit.ly/3SpDv6X](https://bit.ly/3SpDv6X) and the June newsletter at [bit.ly/3vP6Azc](https://bit.ly/3vP6Azc). Click the "Subscribe" at the top of the newsletter to have it delivered to your inbox each month. Or, check out the Twitter hashtag [#VCUnstoppableInnovation](#) for more and follow us [@vcuresearch](#).



Nature featured research to treat anosmia by **Richard Costanzo, Ph.D.** (left), of VCU's Smell and Taste Disorders Center, and **Daniel Coelho M.D.**, (right) associate professor of head and neck surgery in the Department of Otolaryngology and medical director of the VCU Cochlear Implant Center. Their prototype of an olfactory implant was the subject of an Outlook piece, [Restoring smell with an electronic nose.](#) Read more about [the efforts to take this device to the marketplace.](#)

The U.S. Department of Energy issued [a news release](#) about work led by VCU's **Shiv Khanna, Ph.D.**, Commonwealth professor in the physics department, and colleagues from Columbia University and Harvard University. The release detailed the study of a new mechanism for the formation of magnetic moments in which the quantum confinement of electrons in clusters splits their electronic structures into distinct subshells with different spin directions and number of available orbitals.



courtesy of Arthur Reber, VCU

## New university-level research institutes and centers



VPRI Dr. Rao (center) and Associate Vice President for Strategy and Regulatory Affairs **Lisa Richman Ballance** (third from right) were on hand this summer as [VCUarts Qatar launched its Institute for Creative Research](#), home to the country's (and one of the region's) first university-level institutes dedicated to advancing creative research. The institute's goals are to support collaborations with VCUarts in Richmond and across all of VCU, and serve as a design hub for research across sister schools in Qatar's Education City to advance societal impacts and contributions of creative research. The institute was one of [six university-level research institutes or centers](#) the OVPRI approved this summer. The other new university-level research institutes and centers are:

- Center for Drug Discovery
- Center for Microbiome Engineering and Data Analysis
- Humanities Research Center
- Institute for Drug and Alcohol Studies
- Institute for Sustainable Energy and Environment

## Inside the OVPRI

Save **Sept. 26** for **Research Administrator Day**, an exciting fall event to celebrate the research administration profession and our RA community at VCU. See the [agenda](#) for more about presentations and roundtable discussions centered on:

- the impact of our work on the VCU research enterprise.
- lessons learned from careers in the field.
- the exciting future ahead for VCU.
- awards that acknowledge and appreciate the hard work done by the RA community throughout the year.

**The Human Research Protection Program** holds its annual conference on Sept. 29, on the theme of "Research Ethics: Past, Present and Future." The keynote speaker will be Michael Dickinson, Ph.D., of the Department of History and among the session presenters is Sanjur "Sandy" Brooks, Ph.D., director of the HRPP. Conference sessions will explore the historical background of research ethics, contemporary impacts, and future considerations. CEUs are available for this virtual event held via Zoom. Register at [bit.ly/3KBzed3](https://bit.ly/3KBzed3). If you have questions regarding the event, contact Elizabeth Marlowe at [marloweep@vcu.edu](mailto:marloweep@vcu.edu).

Please remember that **HRPP** staff are available for consultations with investigators who are developing IRB submissions. Investigators with existing

submissions should contact the person designated as IRB coordinator for their submission in in RAMS-IRB. But, prior to submission, the consultation program is a great way to start your project off on the right track. [Schedule an appointment now.](#)

The OVPRI [Funding Opportunities web page](#) now includes detailed information on internal funding for VCU researchers. Click on [VCU internal funding opportunities](#) for more information on sponsors, deadlines and eligibility.

Late last year, the **Research Integrity and Ethics office** sent a confidential research integrity climate survey to VCU faculty, post docs, graduate students and research staff. Survey questions address seven research integrity scales. The survey, licensed from the National Center for Principled Leadership and Research Ethics at the University of Illinois at Champaign-Urbana, is the only validated instrument of its kind and allows us to compare results with 20 other universities across disciplines, schools/colleges, departments and research roles. This was VCU's first experience with the survey and although the survey received a 10% response rate, the open-ended questions suggest potential topics to address. Among the findings: VCU scored similarly as other participating schools regarding stumbling blocks that inhibit the research integrity of researchers. Next steps include outreach to departments, schools/colleges to discuss specific results as well as enhancing research integrity education and resources across disciplines. Thanks to all of you who responded to the survey. For more information, please contact Research Integrity and Ethics at [orie@vcu.edu](mailto:orie@vcu.edu).

### Coming this fall

- Watch for details about the upcoming **Grant Academy** fall session. The Division of Research Development is revamping the format and number of workshops.
- VCU's FY 2022 **sponsored programs final report** will be announced mid-fall.
- Information on the upcoming [internal funding opportunities related to the One VCU Research Priorities Plan](#).
- The VPRI's annual **State of the Research** address to the VCU Board of Visitors, Dec. 9.
- Stay tuned for the **Humanities Research Center's** call for applications for research grants in January 2023

### How to follow what's happening at the OVPRI and in VCU research?

- Follow [@vcuresearch](#) on Twitter to keep up with your colleagues and news related to VCU's research efforts.
- Visit the [One VCU Research website](#) and scroll down to view our Twitter feed.



VCU's **Innovation Gateway's** latest [Launchpad](#) newsletter includes the announcement of [six new projects](#) funded by the Commercialization Fund and the story of the VCU innovators working to use aerosols to deliver advanced drugs to patients. Click here to [subscribe](#).

## VCU research and innovation highlights



Enjoy these stories featuring some of VCU's innovative and creative scholars and researchers:

- [Q&A: Meet the researcher searching for the healthiest and safest dog foods](#)
- [DNA responses to childhood trauma offer clues on which children will have long-term health issues as an adult](#)
- [Faculty Convocation honors seven outstanding researchers and educators](#)
- [Oral bacteria could offer innovative clues for pancreatic cancer growth and treatment](#)
- [Harming the 'outgroup' is linked to elevated activity in the brain's reward circuitry](#)
- [New book on captivity in literature offers 'a very different picture of England' in 1600-1700s](#)
- [VCU School of Nursing leads research consortium to study long-term effects of COVID-19 in children](#)
- [Building a sustainable urban park – from the ground up](#)
- [Traversing the James River to learn about its biodiversity and history](#)
- [PT students win fundraising challenge to benefit physical therapy research](#)
- [New VCU engineering test beds will boost security of state's NextG, medical devices and smart cities](#)



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