

**SUMMARY**

**Faculty Research Leaves (77)**

**2022-23**

<b>College</b>	<b>Study-Research</b>	<b>Research Assignment</b>	<b>Total</b>
College of Agriculture and Life Sciences	1	4	<b>5</b>
College of Architecture and Urban Studies	-	5	<b>5</b>
College of Engineering	8	13	<b>21</b>
College of Liberal Arts and Human Sciences	2	14	<b>16</b>
College of Natural Resources and Environment	1	4	<b>5</b>
College of Science	7	9	<b>16</b>
Pamplin College of Business	-	6	<b>6</b>
University Libraries	-	2	<b>2</b>
Virginia-Maryland Regional College of Veterinary Medicine	-	1	<b>1</b>
<b>TOTAL</b>	<b>19</b>	<b>58</b>	<b>77</b>

**RECOMMENDATION:**

That the above study-research and research assignment leaves be approved as requested.

April 4, 2022

## FACULTY RESEARCH LEAVES

2022-23

Virginia Tech provides tenured faculty, and faculty on continued appointment, with opportunities that include paid leave for intensive study or research that advances the individual's profession and contributions to the university.

### **Study-Research Leave**

Study-research leave may be granted to faculty members for research and/or advanced study necessary to enhance the competencies of those faculty members to carry out their obligations to the university. (At other universities this program is often called "sabbatical.")

Full-time tenured faculty members with the rank of associate professor or higher, or faculty members holding continued appointment with significant responsibility for instruction and scholarly productivity, with the rank of assistant professor or higher, having accrued a minimum of six years of service, are eligible for study-research leaves. Following a period of study-research leave, an additional six years of full-time service are necessary before a faculty member is eligible for another leave. Requests may be submitted prior to completion of six years of service, but faculty members must have tenure and have completed the sixth year before the leave period begins. Study-research leave may be granted to faculty members for research and/or advanced study necessary to enhance the competencies of those faculty members to carry out their obligations to the university.

### **Research Assignment**

Research assignment is a special category of study-research leave that is awarded to a tenured or continued-appointment academic faculty member for one semester of intensive study or research that increases the quality of the individual's professional stature and future contributions to the university. It may be taken in lieu of an ordinary yearlong study-research leave.

Full-time tenured faculty members with the rank of associate professor or higher, or holding continued appointment with the rank of assistant professor or higher, having accrued a minimum of six years of service, are eligible for research assignment leave. Following such a leave, an additional six years of full-time service is necessary before a faculty member may be considered for another research assignment. Requests may be submitted prior to completion of six years of service, but faculty members must have completed the sixth year before the leave period begins. Faculty members on calendar year appointments may take research assignment leave for up to six months.

The following faculty members are requesting study-research leave (one-half salary for up to one year) for the purpose and period of time specified:

## College of Agriculture and Life Sciences (1)

**Jelesko, John**, associate professor, School of Plant and Environmental Sciences, June 25, 2022 through June 24, 2023 to obtain hands-on training in Next Generation DNA sequencing and analyses by sequencing five poison ivy species in Canada and one in Japan. (Canada, Japan; Virginia)

## College of Engineering (8)

**Asbeck, Alan**, assistant professor, Mechanical Engineering, academic year 2022-23; to work towards commercialization of several exoskeletons developed at Virginia Tech in partnership with a startup company, including design and testing as well as other business and scientific efforts. (Virginia)

**Li, Zheng**, assistant professor, Mechanical Engineering, academic year 2022-23; to publish journal papers with students, attend academic conferences to expand research networks in the area of energy storage, and meet with potential industry partners and federal grant program managers to explore funding opportunities. (Virginia)

**Martin, Thomas**, professor, Electrical and Computer Engineering, academic year 2022-23; to explore intellectual tools and theoretical frameworks to support interdisciplinary design of pervasive computing systems, particularly for application for the future of work, and to develop collaborations with academia and industry. (Virginia)

**Paretti, Marie**, professor, Engineering Education, academic year 2022-23; to conduct analysis and interpretation of data from two major research grants, the Capstone-to-Work project and the National Science Foundation Interdisciplinary Research Training, and to expand skills in public scholarship to make this academic research accessible to a wider audience. (Virginia)

**Plassman, Paul**, professor, Electrical and Computer Engineering, calendar year 2023; to complete development of a simulation framework for biological simulations at the cellular level in collaboration with colleagues at the Lawrence Livermore National Laboratory. (California)

**Reddy, Chandan**, professor, Computer Science, academic year 2022-23; to enhance knowledge and expertise in the areas of deep learning, natural language processing, and graph analysis, with a goal of expanding work on large-scale graph algorithms using deep learning methods. (California, Washington D.C.)

**Yang, Yaling**, professor, Electrical and Computer Engineering, academic year 2022-23; to develop research collaborations with colleagues at the University of Illinois in the areas of network protocol designs and network security. (Illinois)

**Yu, Hang**, assistant professor, Materials Science and Engineering, academic year 2022-23; to establish research collaboration with several faculty members at the Massachusetts Institute of Technology (MIT) in the area of 3D printing of electronics, and to complete two book projects and two journal articles. (Massachusetts)

## College of Liberal Arts & Human Sciences (2)

**Klagge, James**, professor, Philosophy, spring semester 2023 and fall semester 2023; to complete a memoir started by a student of Ludwig Wittgenstein about his experiences studying with the influential philosopher. (Virginia)

**Scott, Rachel**, professor, Religion & Culture, spring semester 2023; to work on a new book manuscript entitled *Against the State: Perspectives from the Islamic Tradition*. (Virginia)

## College of Natural Resources and Environment (1)

**Dayer, Ashley**, assistant professor, Fish and Wildlife Conservation, academic year 2022-23; to work as a social science advisor to the National Audubon Society, advancing scholarship at the intersection of conservation social science and diversity, equity, and inclusion. (U.K.; New York, Virginia, Washington D.C.)

## College of Science (7)

**Borggaard, Jeff**, professor, Mathematics, academic year 2022-23; to continue research on the modeling and simulation of compressible turbulent flows found around high-speed vehicles, and to develop real-time estimation of the indoor air environment needed to efficiently run HVAC systems. (Massachusetts, Ohio)

**Cheng, Shengfeng**, associate professor, Physics, academic year 2022-23; to enrich current research interests, expand professional networks, and promote the reputation of Virginia Tech's related research groups in the soft matter and biological physics community in China and globally. (China)

**Chung, Julianne**, associate professor, Mathematics, academic year 2022-23; to develop new computational methods for large-scale inverse problems and uncertainty quantification, and make progress on a textbook on mathematical modeling and data science. (Georgia)

**Chung, Matthias**, associate professor, Mathematics, academic year 2022-23; to collaborate with colleagues at Emory University to explore research questions related to

the design and development of novel inversion techniques by synthesizing and combining newly-developed methods in coexisting fields. (Georgia)

**Higdon, David**, professor, Statistics, academic year 2022-23; to continue work on two grant-funded projects on computational epidemiology and machine learning for computational cosmology, and conduct speculative research with international collaborators. (New Zealand; Illinois, Utah, Virginia)

**Iliescu, Traian**, professor, Mathematics, academic year 2022-23; to pursue research in reduced order modeling, analysis, and control of engineering, biomedical, and geophysical turbulent flows in collaboration with domestic and international researchers. (Italy; Illinois)

**Zietsman, Lizette**, associate professor, Mathematics, academic year 2022-23; to identify and develop different optimization methods that would be applicable to the Cognitive Fully Adaptive Radar (CoFAR) controller and scheduler and would contribute to the identification of a theoretically sound approach to near-optimal resource scheduling. (California, Virginia)

**The following faculty members are requesting research assignments (full salary for one semester) for the purpose and period of time specified:**

### **College of Agriculture and Life Sciences (4)**

**Eick, Matthew**, professor, School of Plant and Environmental Sciences, fall semester 2022; to conduct research on the chemistry and mineralogy of Salt Lick Soils at the Tiputini Biodiversity Station, and revise course. (Ecuador)

**Slade, Daniel**, assistant professor, Biochemistry, fall semester 2022; to learn new techniques in the laboratory focused on novel animal models, and write grants and collect data with international collaborators. (Ireland, Northern Ireland)

**Sridhar, Venkataramana**, associate professor, Biological Systems Engineering, spring semester 2023; to further investigate adaptation strategies that will aid in the management of risks associated with climate change in the agricultural and water sectors of South India's Cauvery, Krishna, and Godavari rivers. (India)

**Thompson, Teresa**, associate professor, Biological Systems Engineering, spring semester 2023; expand my research capabilities in the study of cohesive erosion, and collaborating with colleagues studying coastal erosion at the University of St. Andrews. (Scotland; Virginia)

### **College of Architecture and Urban Studies (5)**

**Datz, Giselle**, associate professor, School of Public and International Affairs, fall semester 2022; to conduct research and draft a manuscript tracking new financial development dynamics through the identification of the causal mechanisms that link fintech expansion and banking sector reorganization in Latin America (Brazil; Virginia)

**Dull, Matthew**, associate professor, School of Public and International Affairs, fall semester 2022; to complete and submit journal articles in three areas of ongoing research: congressional oversight, presidential appointees, and frontline public service narratives. (Washington D.C.)

**Sanchez, Thomas**, professor, School of Public and International Affairs, fall semester 2022; to pursue funding opportunities and prepare grant proposals related to the topic of artificial intelligence in urban planning, extending and expanding on research begun under a grant from the National Science Foundation. (Virginia)

**Toal, Gerard**, professor, School of Public and International Affairs, spring semester 2023; to continue research on the geopolitical orientation of people in borderland states around the Russian Federation in collaboration with colleagues, and with funding from the National Science Foundation and Research Council of the United Kingdom. (Washington D.C.)

**Weaver, Rachel**, assistant professor, School of Visual Arts, spring semester 2023; to attend film production workshops and begin on-location shooting of a feature-length film. (Japan; Alaska, California, Louisiana)

## College of Engineering (13)

**Boreyko, Jonathan**, associate professor, Mechanical Engineering, July 1, 2022 through October 31, 2022; to serve as a visiting scholar at Eidgenössische Technische Hochschule (ETH), studying jumping-droplet condensation and rational anti-icing technology. (Switzerland)

**De Vita, Raffaella**, professor, Biomedical Engineering and Mechanics, fall semester 2022; to study emerging data-driven science and reduced order modeling methodologies with experts in the field, to be able to solve complex health problems in reproductive biomechanics using these state-of-the-art methods. (Italy; Ohio)

**Kekatos, Vasileios**, associate professor, Electrical and Computer Engineering, fall semester 2022; to extend research on physics-informed machine learning-based solutions for electric power systems, and begin development of research in quantum computing with applications to power systems. (Virginia)

**Lu, Chang**, professor, Chemical Engineering, spring semester 2023; to collaborate closely with clinical researchers and medical schools to enhance research activities through direct experimentation on patients and patient materials. (Washington D.C.)

**Nussbaum, Maury**, professor, Industrial and Systems Engineering, spring semester 2023; to develop and modify proposals within the areas of occupational biomechanics and ergonomics, and to submit papers for publication for several completed and ongoing research projects. (Virginia)

**Poon, Chung-Ting**, professor, Electrical and Computer Engineering, fall semester 2022; to build internal collaborations with colleagues at Kunming University of Science and Technology and Tsinghua University on research related to digital holography and its applications. (China)

**Ripepi, Nino**, associate professor, Mining and Minerals Engineering, spring semester 2023; to build on an existing relationship between Virginia Tech and the Universidad Nacional de Colombia with a goal of developing funding proposals and enhancing current student exchange opportunities related to risk management in mining. (Colombia)

**Ross, Shane**, professor, Aerospace and Ocean Engineering, fall semester 2022; to further develop research on applications of dynamical systems to new problem domains, including cislunar orbital dynamics, fluid mechanics, and dynamic and control in collaboration with colleagues at the University of San Diego. (California)

**Ruohoniemi, J. Michael**, professor, Electrical and Computer Engineering, June 25, 2022 through December 24, 2022; to perform repairs and upgrades at radars, and reestablish

relationships with collaborators around the country that are part of the Super Dual Auroral Radar Network (SuperDARN) grant. (Canada; Kansas, Virginia)

**Sultan, Cornel**, professor, Aerospace and Ocean Engineering, spring semester 2023; to continue work on a book manuscript highlighting the most important findings from my research in the field on tensegrity structures. (Pennsylvania, Virginia)

**Wang, Anbo**, professor, Electrical and Computer Engineering, June 25, 2022 through June 24, 2023; to meet with potential research sponsors, develop collaborations with researchers, and delve into new fields of research including acoustic to optical waveguide coupling to form a hybrid sensing network. (Hong Kong; Michigan, South Carolina, Virginia)

**Yao, Danfeng**, professor, Computer Science, spring semester 2023; to collaborate with a colleague at Princeton University on making cybersecurity technologies more deployable in enterprise environments. (New Jersey)

**Zhu, Yizheng**, associate professor, Electrical and Computer Engineering, spring semester 2023; to explore deep learning techniques for new research directions and funding opportunities in optical imaging and sensing at two world-leading centers in this research area. (China; Virginia)

## College of Liberal Arts and Human Sciences (14)

**Austin, Elisabeth**, associate professor, Modern and Classical Languages and Literatures, spring semester 2023; to research, outline, and begin writing a new book project on eco-feminisms of 19<sup>th</sup> century Spanish America. (Virginia)

**Avey, Paul**, associate professor, Political Science, fall semester 2022; to make significant progress on both a book manuscript examining reputation in alliance politics, and to complete two articles on nuclear strategy and politics. (Virginia)

**Brunsma, David**, professor, Sociology, fall semester 2022; to conduct initial research, and further develop existing research in three new areas of scholarship related to diversity, equity, and inclusion. (Virginia)

**Debrix, Francois**, professor, Political Science, spring semester 2023; to conduct archival research, and begin work on a book manuscript on the politics and representation of horror. (Virginia)

**Gitre, Carmen**, associate professor, History, spring semester 2023; to make significant progress on a second book manuscript tentatively titled *Humor in Interwar Egypt*. (Virginia)

**Hofer, Stephanie**, associate professor, Modern and Classical Languages and Literatures, spring semester 2023; to make progress on a book manuscript titled *Spaces*

of *Healing*, and complete and submit one article and an introduction for a special journal issue. (Virginia)

**Ivory, James**, professor, Communication, fall semester 2022; to further research on the social dimensions of electronic simulations, games, and virtual environments, leading to potential collaborations, a scholarly book, and journal articles. (Virginia)

**Jewitt, Caitlin**, associate professor, Political Science, spring semester 2023; to prepare and submit three co-authored articles about U.S. presidential nomination rules, and generate an extensive dataset documenting the 2024 U.S. presidential nomination rules and rule changes. (Virginia)

**Masters, Richard**, associate professor, School of Performing Arts|Music|Theatre|Cinema fall semester 2022; to study three sonatas by Beethoven, perform in venues across Europe, and prepare a book proposal for submission. (France, U.K.; New York, Pennsylvania)

**Meitner, Erika**, professor, English, spring semester 2023; to complete a collection of poems entitled *Assembled Audience*, and to continue work on a long-term documentary poetry project on sea-level rise. (Virginia)

**Mesmer, Heidi Anne**, professor, School of Education, fall semester 2022; to develop and submit two research papers, and to review current literature in literacy education in conversation with colleagues at other institutions. (Virginia)

**Moore, Wayne**, associate professor, Political Science, spring semester 2023; to continue research and writing of a book manuscript tentatively entitled *The Unofficial Constitution*, studying the roles “the people” play in the founding, amendment, and interpretation of the U.S. Constitution. (Virginia)

**Nelson, Amanda**, associate professor, School of Performing Arts|Music|Theatre|Cinema spring semester 2023; to research and write journal articles, conference presentation, or grants related exploring the role of women actor-managers through models of modern leadership. (U.K.; New York, Pennsylvania, Washington D.C.)

**Nichols, Charles**, associate professor, School of Performing Arts|Music|Theatre|Cinema fall semester 2022; to compose, perform, and record computer music at the Centre for Interdisciplinary Research in Music Media and Technology at McGill University, and with collaborators in the U.S. (Canada; Montana, Pennsylvania)

## College of Natural Resources and Environment (4)

**Castello, Leandro**, associate professor, Fish and Wildlife Conservation, fall semester 2022; to execute the field intensive component of a recently funded research grant assessing how heterogeneous patterns of fish distribution affect fisheries catch. (Brazil)

**Kennedy, Lisa**, associate professor, Geography, fall semester 2022; to prepare and submit two journal articles, and work with collaborators to submit a grant proposal for research related to the environmental history of Mountain Lake. (Virginia)

**Quesada, Henry**, professor, Sustainable Biomaterials, June 25, 2022 through December 24, 2022; to manufacture and test light structural and non-structural panels from bagasse, a residue from the processing of sugar cane into sugar. (Costa Rica)

**Resler, Lynn**, professor, Geography, fall semester 2022; to expand research program into new arenas that investigate the effects of global change on native and invasive plant distributions in the U.S. Rocky Mountains and within the central Appalachian Mountains. (Montana, Virginia)

## College of Science (9)

**Abaid, Nicole**, associate professor, Mathematics, spring semester 2023; to build a framework for studying collective behavior that links statistical mechanics, information theory, and observed biological phenomena, and to give seminars and re-establish relationships with colleagues nationally and internationally.(Canada, Israel; Nevada, Oregon, Virginia)

**Barnes, Edwin**, associate professor, Physics, fall semester 2022; to update knowledge of the latest advances in the field of quantum information science, to facilitate the start of newly formed collaborations, and initiate new ones with top researchers both in the U.S. and abroad. (Germany, U.K.; California, New York)

**Beattie, Christopher**, professor, Mathematics, spring semester 2023; to extend National Science Foundation grant-funded research focusing on data-driven reduced order models that are able to take advantage of the large volume of observation data to reliably estimate the state of a power grid. (Germany; Colorado, Virginia)

**Economou, Sophia**, professor, Physics, fall semester 2022; to advance knowledge and build relationships with collaborators in the fields of quantum computing, quantum simulation, and quantum networks. (Germany, U.K.; California, New York)

**Gramacy, Robert**, professor, Statistics, fall semester 2022; to develop new areas of research applications related to surrogate modeling of computer simulation experiments with colleagues at the Los Alamos National Lab. (New Mexico)

**Hong, Yili**, professor, Statistics, spring semester 2023; to serve as a faculty visitor at Arizona State University and the University of Arkansas, focusing on developing novel statistical and machine learning methods for reliability predictions with applications to renewable energy. (Arizona, Arkansas)

**Johnson, Leah**, associate professor, Statistics, fall semester 2022; to gain experience in new statistical methods, learn computational tools to support new areas of research on

ecological forecasting, and build new collaborations with researchers in this area. (U.K.; Florida)

**Orr, Daniel**, associate professor, Mathematics, spring semester 2023; to serve as a visiting scientist at the Max Planck Institute for Mathematics, researching problems related to three new research areas, and collaborating with researchers at nearby universities to build research programs. (Germany)

**Xiao, Shuhai**, professor, Geosciences, spring semester 2023; to carry out field work, conduct collaborative paleontological research with colleagues at the Nanjing Institute of Geology and Paleontology, and identify new field sites for research. (China, Mongolia)

### College of Veterinary Medicine (1)

**Borgarelli, Michele**, professor, Small Animal Clinical Sciences, spring semester 2023; to serve as a visiting scholar at the University of Turin, studying the comparative aspect of myxomatous mitral valve disease, the most common cardiovascular disease in dogs and one of the most common valvular diseases in humans. (Italy)

### Pamplin College of Business (6)

**Beal, Daniel**, associate professor, Management, spring semester 2023; to explore a new research area developing theory linking organizational behavior to an evolutionary psychological perspective, and to continue with a current research program on emotional labor, developing journal articles in both areas. (Virginia)

**Gnyawali, Devi**, associate professor, Management, fall semester 2022; to reengage with collaborative research in two areas, one on ecosystems: how they emerge and how an ecosystem value proposition focused on a novel technology co-evolves over time together with actors across institutional fields, and another area developing a set of underlying conceptual properties of cooperation capability. (Virginia)

**Kadlec, Gregory**, professor, Finance, Insurance, and Business Law, fall semester 2022; to finalize for publication two research projects documenting adverse consequences of institutional money management and to build and develop collaborations with colleagues in this field. (Virginia)

**Kim, Eojina**, assistant professor, Hospitality and Tourism Management, spring semester 2023; to work with internationally recognized researchers on innovative issues regarding impacts of sustainability on food consumption/practices in the foodservice industry. (South Korea)

**Pandelaere, Mario**, associate professor, Marketing, fall semester 2022; to build on existing research collaborations, and initiate new collaborations with colleagues at three institutions, ranging from product care and product misuse, attitudes to objectifying ads, and preferences for visual versus textual information. (Belgium)

**Zobel, Christopher**, professor, Business Information Technology, spring semester 2023; to serve as a visiting scholar at the National Hazards Center at the University of Colorado, collaborating with researchers on research into humanitarian operations and disaster operations management. (Colorado)

## University Libraries (2)

**Haugen, Inga**, assistant professor, Scholarly Communication, fall semester 2022; to conduct a literature review of bureaucratic information systems focusing on U.S. federal level systems, and develop appropriate methodologies to analyze those systems. (Virginia)

**Xie, Zhiwu**, professor, University Libraries, fall semester 2022; to develop three journal manuscripts based on studies of Virginia Tech's position with regards to innovative approaches to academic libraries' changing roles in the research and learning ecosystem. (Virginia)