

FY 2023 funded projects listed by *primary* initiative

Enriching the Human Experience

An Immersive Dynamic Virtual Ambulation Platform to Reduce Risk of Injury following Sports-Related Concussion: Jessie Oldham, Ph.D., College of Health Professions; James Ferri, Ph.D., College of Engineering; *VCU Quest Fund*

Archives and Post-conflict Memory: Rola Khayyat, M.F.A, VCUarts Qatar; *VCU Quest Fund*

Building the Past: Architecture at Kom Aushim from Late Antiquity to the Modern Era: Bethany Simpson, Ph.D., VCUarts Qatar; *VCU Quest Fund*

Center for Translational Research in Autonomic Health: Thomas Chelimsky, M.D., School of Medicine; James Burch, Ph.D., School of Medicine; Patricia Kinser, Ph.D., WHNP-BC, RN, School of Nursing; in collaboration with Taylor Crouch, Ph.D., School of Medicine; Raouf Gharbo, DO, School of Medicine; Jeanine Guidry, Ph.D., College of Humanities and Sciences; *VCU Breakthroughs Fund*

Combining Arts-Health Interventions to Supercharge Creative Aging in Old and Young: Sharon Ott, M.F.A., School of the Arts; Elizabeth Byland, M.F.A., School of the Arts; Sara Wilson-McKay, Ph.D., School of the Arts; (in collaboration with Aaron Anderson, School of the Arts; Tracey Gendron, College of Health Professions); *VCU Quest Fund*

Enhancing Assessment of MTSS Fidelity and Effectiveness for K-12 Student Mental Health Support in Virginia Schools: David Naff, Ph.D., School of Education; Chin-Chih Chen, Ph.D., School of Education; Sunny Shin, School of Social Work; Jodie Soracco, Ph.D., Department of Education; *VCU Breakthroughs Fund*

From Rural to Urban: HIV positivity in the COVID-19 era: two Kenyan Communities: Christopher Brooks, Ph.D., School of World Studies; Amy Rector, Ph.D, College of Humanities and Sciences; *VCU Arts Humanities and Social Sciences Fund*

Imagining Nations: Indigenous Networks in Film, Print, and Theatre: Christina Stanciu, Ph.D., College of Humanities and Sciences; Catherine E. Ingrassia, Ph.D., College of Humanities and Sciences; *VCU Arts Humanities and Social Sciences*

The Green Light: School Integration in the United States: Brian Daughterity, Ph.D., College of Humanities and Sciences; John Powers, Ph.D., College of Humanities and Sciences; *VCU Arts Humanities and Social Sciences Fund*

The Queen's Silence: The Hidden History of the British Monarchy and Slavery: Brooke Newman, Ph.D., College of Humanities and Sciences; John Powers, Ph.D., College of Humanities and Sciences; *VCU Arts Humanities and Social Sciences Fund*

Twelve Earths: Michael McKean, M.F.A., School of the Arts; Cynthia Myron, M.F.A., School of the Arts; *VCU Arts Humanities and Social Sciences Fund*

Quantum Fields and Knots: An Integrative Approach: Marco Aldi, Ph.D., College of Humanities and Sciences; Allison Moore, Ph.D., College of Humanities and Sciences; Nicola Tarasca, Ph.D., College of Humanities and Sciences, *VCU Quest Fund*

Achieving a Just and Equitable Society

Bones as an Alternative Matrix for the Detection of New Synthetic Opioids in Cold Cases: Introducing New Animal Models for Bone:Blood Correlation Studies: Emanuele Alves, Ph.D., College of Humanities and Sciences; Zina Trost, Ph.D., School of Medicine; (in collaboration with Kala Babb, College of Humanities and Sciences; David Cohen, College of Engineering; Jade Smith, College of Humanities and Sciences); *VCU Quest Fund*

Centering Youth Voice Amidst Equity Resistance Campaigns: Andrene Castro, Ph.D., School of Education; Kevin Clay, Ph.D., School of Education; (in collaboration with Kimberly Bridges, School of Education; Genevieve Siegel-Hawley, School of Education); *VCU Quest Fund*

Computing in the Commonwealth: An environmental scan and consensus-based framework for understanding Virginia's specialized secondary computing education opportunities: Jonathan Becker, J.D., Ph.D., School of Education; (in collaboration with Michael Broda, School of Education; Amy Corning, School of Education); *VCU Quest Fund*

Disaster Victim Identification (DVI): Leveraging Rapid DNA Technology for Expedited Human Identification from Human Dental Remains: Tracey Dawson Green, Ph.D., College of Humanities and Science; Janina Golob Deeb, D.D.S., School of Dentistry; *VCU Breakthroughs Fund*

Equity within Housing Programs in Virginia: Chelsie Dunn, M.A., College of Humanities and Sciences; (in collaboration with Nakeina Douglas-Glenn, Wilder School; Yali Pang, Wilder School; Jennifer Reid, Center for Public Policy and Research); *VCU Quest Fund*

Making Sense: Historical Consciousness in Troubled Times: Gabriel Reich, Ph.D., School of Education; Joan Rhodes, Ph.D., School of Education; *VCU Arts Humanities and Social Sciences Fund*

Multisited Ethnography of Dental Safety Net Policy Implementation in Virginia: Sarah Raskin, Ph.D., L. Douglas Wilder School of Government and Public Relations; *VCU Quest Fund*

Project Moroccan Modern 1958-1972: Jean Powers, Ph.D., College of Humanities and Sciences; Radha Dalal, Ph.D., VCUarts Qatar; *VCU Arts Humanities and Social Sciences Fund*

Understanding Belonging in Context: A Longitudinal Mixed Methods Study: Sharon Zumbrunn, Ph.D., School of Education; Lisa Abrams, Ph.D., School of Education; (in collaboration with Viyana Banjade, School of Education, Michael Broda, School of Education, Korinthia Nicolai, School of Education, Molly Taylor, School of Education); *VCU Arts Humanities and Social Sciences Fund*

Women within Arab Film and Cross Cultural Filmmaking: Maysaa Al-Mumin, VCUarts Qatar; Simone Muscolino, MArch, VCUarts Qatar; *VCU Arts Humanities and Social Sciences Fund*

Optimizing Health

A Novel Paradigm of Feature Screening for High-throughput Survival Data: Chenlu Ke, Ph.D., College of Humanities and Sciences; (in collaboration with Dipankar Bandyopadhyay, Ph.D.); *VCU Quest Fund*

An Integrated experimental and deep learning framework to identify synergistic drug combination against prostate cancer *An Integrated experimental and deep learning framework to identify synergistic drug combination against prostate cancer.* Swadesh Das, Ph.D., School of Medicine; Preetam Ghosh, Ph.D., College of Engineering; *VCU Quest Fund*

Anti-CD3 Nanoparticles for Use in Treating Atherosclerosis: Michael Lacy, Ph.D., College of Health Professions; James Ferri, Ph.D., College of Engineering; (in collaboration with James Ferri, Ph.D., College of Engineering); *VCU Quest Fund*

Dysregulated sphingolipid metabolism contributes to fibrosis in the heart, liver, and lungs: Patricia Sime, M.D., School of Medicine; Fadi Salloum, Ph.D., School of Medicine; Arun Sanyal, M.D., School of Medicine; Lauren Cowart, Ph.D., School of Medicine; in collaboration with, Sarah Camus, School of Medicine; Mikyung Kang, School of Medicine; Donatas Kraskauskas, School of Medicine; Adolfo Mauro, School of Medicine; Hae Ki Min, School of Medicine; David Montefusco, School of Medicine; Josly Pierre-Louis Odoom, School of Medicine; Thomas Thatcher, School of Medicine; Margaret Thomas Freeberg, School of Medicine; *VCU Momentum Fund*

Improving early detection and intervention for alcohol problems among young adults - Harnessing the untapped potential of family health history and the electronic health record: Karen Chartier, Ph.D., School of Social Work; Jonathan Deshazo, Ph.D., College of Health Professions; (in collaboration with Evan French, Center for Translational Science, Matthew Morgan, Ph.D., School of Social Work; Amy Olex, Ph.D., Center for Translational Science); *VCU Quest Fund*

Making Heterogeneous Clinical Data AI- ready with Applications to Radiation Oncology: Preetam Ghosh, Ph.D., College of Engineering; Jatinder Palta, Ph.D., School of Medicine; William Sleeman, MS, School of Medicine; in collaboration with Rishabh Kapoor, MS, School of Medicine; *VCU Breakthroughs Fund*

Mechanistic Understanding of Initial Bacterial Attachment in Biofilm Formation: Weining Wang, Ph.D., College of Engineering; Daren Chen, Ph.D., College of Engineering; Ping Xu, Ph.D., School of Dentistry; *VCU Breakthroughs Fund*

Prediction of Motor Responses in Transcranial Magnetic Stimulation with Deep Neural Network using Neuroanatomy and Functional Connectivity: Ravi Hadimani, Ph.D., College of Engineering; Jayasimha Atulasimha, Ph.D., College of Engineering; Liangso Ma, Ph.D., School of Medicine; Carrie Peterson, Ph.D., College of Engineering; *VCU Breakthroughs Fund*

Promoting Emotional Wellbeing of Service Providers in Early Childhood: Yaoying Xu, Ph.D., School of Education; Bergen Nelson, M.D., School of Medicine; Sarah Price, Ph.D., School of Social Work; Shu-Fang Shih, Ph.D., VCU College of Health Professions; in collaboration with Serra De Arment, Ph.D., School of Education; Christine Spence, Ph.D., School of Education; Dana Yarbrough, School of Education; *VCU Breakthroughs Fund*

P. gingivalis infection and cancer stem cell maintenance: Huizhi Wang, Ph.D., School of Dentistry; Jiong Li, Ph.D., School of Dentistry; *VCU Breakthroughs Fund*

Real-Time Monitoring of Critical Care Analytes and Immune Biomarkers for the Management of Sepsis: Xuewei Wang, Ph.D., College of Humanities and Science; Martin Mangino, Ph.D., School of Medicine; *VCU Breakthroughs Fund*

Role of Dickkopf1 (DKK1) in head and neck cancer: Hisashi Harada, Ph.D., School of Dentistry; Eddie Wook-Jin Chae, Ph.D., School of Dentistry; *VCU Quest Fund*

Role of fatty acid amide hydrolase in acute kidney injury to chronic kidney disease transition: Ningjun Li, Ph.D., School of Medicine; (in collaboration with Dandan Huang, Ph.D., School of Medicine); *VCU Quest Fund*

Roles of innate immunity pathways in alcohol response behaviors: Jill Bettinger, Ph.D., School of Medicine; Laura Mathies, Ph.D., School of Medicine; (in collaboration with Evan Soukup, School of Medicine); *VCU Quest Fund*

Single-cell gene expression analysis of organophosphate neurotoxicity in the hippocampus: Joseph McClay, Ph.D., School of Pharmacy; (in collaboration with Ana Davis, School of Medicine; Laxmikant Deshpande, Ph.D., School of Medicine; Mikhail Dozmorov, School of Medicine; Fay Jahr, School of Pharmacy); *VCU Quest Fund*

Sex Differences in Impact of Early Life Stress on Opioid Biology: Gretchen McCandless Neigh, Ph.D., School of Medicine; Frederick Moeller, M.D., School of Medicine; Steven Negus, Ph.D., School of Medicine; Dace Svikis, Ph.D., College of Humanities and Science; in collaboration with, Hamid Akbarali, School of Medicine; Matthew Banks, School of Medicine; Shanshan Chen, School of Medicine; Susan Kornstein, School of Medicine; Caitlin Martin, School of Medicine; *VCU Breakthroughs Fund*

Trans-synaptic spread of pathogenic tau to selectively vulnerable hippocampal neurons: A. Rory McQuiston, Ph.D., School of Medicine; *VCU Quest Fund*

Supporting Sustainable Energy and Environments

3D Printed Advanced Electrocatalytic Electrodes for High Energy Density Batteries: Hani El-Kaderi, Ph.D., College of Humanities and Science; Puru Jena, Ph.D., College of Humanities and Science; Hong Zhao, Ph.D., College of Engineering; *VCU Momentum Fund*

Endangered National Treasures: Writing Poems of Place in Three of America's National Parks with the Most Endangered Species: Diane Woodcock, Ph.D., VCUarts Qatar; *VCU Arts, Humanities and Social Sciences Fund*

Mapping Ideal Sites for Urban Agriculture as Green Infrastructure in the City of Richmond: Jonathan Jones, Ph.D., VCU Life Sciences; (in collaboration with Stephen Fong, Ph.D., College of Engineering; Jesse Goldstein, Ph.D., College of Humanities and Sciences; Emily Hastings, VCU Life Sciences); *VCU Quest Fund*

Superatomic Transition Metal Clusters and Nanoparticles as High-Efficiency, Earth-Abundant, and Durable Electrocatalysts for Producing Sustainable Hydrogen Fuel from Water and

Electricity: Indika Arachchige, Ph.D., College of Humanities and Science; Ram Gupta, Ph.D., School of Engineering; Puru Jena, Ph.D., College of Humanities and Science; *VCU Momentum Fund*