

**SPRING 2013**

# Virginia Commonwealth University Presidential Research Quest Fund

**Salvatore Agosta**

Center for Environmental Studies

*It's getting warmer: Testing the generality of oxygen-limited thermal tolerance across life stages and populations in terrestrial organisms with complex life cycles*

**Indika Arachchige**

Department of Chemistry

*Direct-gap group IV alloy nanocrystals as cheap and efficient materials for optoelectronic applications*

**Kenneth Daniels**

Department of Finance, Insurance and Real Estate

**Jayaraman Vijayakumar**

Department of Accounting

*An empirical analysis of the causes and consequences of municipal bond defaults*

**Heather Dawson**

Department of Foundations of Education

*Teachers' dialogical selves, motivation and beliefs in the context of neoliberal education reforms*

**Nicholas Farrell**

Department of Chemistry

*Caspases and zinc: The bioinorganic chemistry of apoptosis*

**Tony Gentry**

Department of Occupational Therapy

*Sensor-augmented sleep hygiene training for adults with autism*

**Wendy Kliewer**

Department of Psychology

**Jo Lynne Robins**

Department of Family and Community Health Nursing

*Project HEART: Health and resilience in teens*

**Janina Lewis**

Philips Institute of Oral and Craniofacial Molecular Biology

*Global regulation of gene expression by OxyR in periodontopathogen *Porphyromonas gingivalis**

**Rory McQuiston**

Department of Anatomy and Neurobiology

*Neural networks contributing to central nervous system rhythms*

**Umit Ozgur**

Department of Electrical and Computer Engineering

**Vitaliy Avrutin**

Department of Electrical and Computer Engineering

*Coherent acoustic phonon nanocavity devices for terahertz spectroscopy and structural and biomedical imaging at the nanoscale*

**Ryan Patton**

Department of Art Education

*Learning from digital game design*

**Roland Pittman**

Department of Physiology and Biophysics

*Matching oxygen supply and oxygen demand*

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**Masahiro Sakagami**

Department of Pharmaceutics

*Lung repair in emphysema via HIF-1alpha modulation:  
Reversing an imbalance of cell death and proliferation*

**Laura Sim-Selley**

Department of Pharmacology and Toxicology

*Beta-anesthin regulation of cannabinoid receptors in the CNS*

**John Speich**

Department of Mechanical and Nuclear Engineering

**Adam Klausner**

Department of Surgery

*Mechanical urgency: Correlation of novel bladder wall  
compliance measurements with patient-reported sensations  
during urodynamics*

**Arunkumar Subramanian**

Department of Mechanical and Nuclear Engineering

**James McLeskey**

Department of Mechanical and Nuclear Engineering

*Electrohydrodynamics-based nanorobotic printing*

**Traci Wike**

School of Social Work

*Determining the role of protective factors in interrupting  
the developmental trajectories of bullying and victimization  
in late childhood*

**Diana Woodcock**

VCU School of the Arts in Qatar Liberal Arts  
and Sciences program

*Poetry's role in promoting environmental justice*