Senate Research Report

April 16, 2019

Queen's University
VICE-PRINCIPAL (RESEARCH)

News and Updates

The second Research Development Day (RDD) will take place on May 2 in Mitchell Hall. RDD offers a chance for Queen's faculty members from across campus to come together to learn about and workshop common challenges faced during the research lifecycle. This year's event will feature a keynote workshop on knowledge mobilization, and sessions on increasing equity, diversity and inclusion in a research lab or group, the strategies and tools available for building a research profile, and funding opportunities available to enhance international collaboration.

Through its SSHRC Institutional Grants (SIG) funding opportunity, SSHRC provides annual block grants to help eligible Canadian postsecondary institutions fund, through their own merit review processes, small-scale research and research-related activities by their faculty in the social sciences and humanities. SIG funds are intended to help Canadian postsecondary institutions strengthen research excellence in the social sciences and humanities. A call for applications has been launched with a deadline of April 19. More information about the SIG funding opportunity is available on the Office of the Vice-Principal (Research) website.

The Resources for Researchers at Queen's (R4R@Q) program has an event scheduled for May 8: *People, Tissues, Cells, & Data: Key Ethical Considerations and Resources*

Awards and Accolades

Dr. Ryan Riordan (Distinguished Professor of Finance, Smith School of Business) has received the 2019 Governor's Award from the Bank of Canada, given in recognition of expertise and research in areas important to the Bank's core functions. Dr. Riordan studies how investors and exchanges use technology, in particular high-frequency trading systems, and the impact of these systems on the quality of financial markets.

Dr. Diane Beauchemin (Chemistry) was awarded the 2019 Clara Benson Award, given by the Canadian Society for Chemistry to recognize a woman who has made a distinguished contribution to chemistry while working in Canada. Beauchemin's research focuses on the fundamentals and applications of ICP spectrometry, a technique that permits detection of almost all elements on the periodic table at concentrations as low as one part per 10^{15} (quadrillion) and is vital for analytical laboratories in a variety of industries.

Funding

Principal Investigator	Department	Project Title	Amount
Cancer Research Society – Operating Grant			
Kristan Aronson	Cancer Care and Epidemiology	Shift Work as a Carcinogen for Breast Cancer, Melatonin, and Circadian Gene Methylation Among Female Hospital Employees	$120,000
CFI - JELF			
Sheela Abraham	Biomedical and Molecular Sciences	Using Systems Biology to Investigate Leukemic and Normal Stem Cells	$162,500
Joseph Bramante & Aaron Vincent	Physics, Engineering Physics & Astronomy	Astroparticle Theory Laboratory	$49,970
Julia Brook & Colleen Renihan	Dan School of Drama & Music	Driving Innovation: Establishing a Mobile Inclusive Music Theatre Makerspace	$40,800
Kenneth Clark	Physics, Engineering Physics & Astronomy	Development of a Scintillating Bubble Chamber	$189,951
Vahid Fallah	Mechanical and Materials Engineering	Selective Laser Melting of Reactive/Sensitive Metals for Aerospace, Automotive and Medical Applications	$125,000
Madhuri Koti	Biomedical & Molecular Sciences; Obstetrics & Gynecology	Predictive Immune Monitoring Approaches for Precision Cancer Chemo-Immunotherapy	$150,000
Bhavin Shastri	Physics, Engineering Physics & Astronomy	Nanophotonic Neuromorphic Computing	$132,500
Jeremy Stewart	Psychology	Unpacking the Transition from Suicide Ideation to Attempts in Adolescents	$100,000
Aaron Vincent & Joseph Bramante	Physics, Engineering Physics & Astronomy	Dark Stars and New Physics from Neutrinos	$50,000
CIHR – Catalyst Grant			
Dianne Groll	Psychiatry	Understanding the Prevalence of Mental Health Disorders in Provincial Correctional Officers - A National Study	$93,800

CIHR – Operating Grant			
Josée-Lyne Ethier	Oncology	Real World Outcomes of Novel Targeted Agents for the Treatment of Metastatic HER2-Positive Breast Cancer in Ontario: A Population-Based Study	$97,999
Sandra Fucile	Paediatrics	Developmental Outcomes of Preterm Infants Enrolled in a Randomized Clinical Trial of a Parent Administered Sensorimotor Intervention in the Neonatal Intensive Unit	$104,055
CIHR – Planning and Dissemination Grant			
Elijah Bisung	School for Kinesiology and Health Studies	Developing a Research Agenda to Promote Accessible and Inclusive Water and Sanitation Services in Schools for Persons with Disabilities	$19,612
CIHR – Project Scheme			
Bruce Banfield	Biomedical and Molecular Sciences	Early Stages in the Morphogenesis of Herpes Simplex Virus	$784,125
Lindsay Fitzpatrick	Chemical Engineering	MyD88-Dependent Modulation of Host Response to Insulin Infusion Cannulas	$443,700
Frederick Kan	Biomedical and Molecular Sciences	Role of Human Oviductin in Enhancement of Sperm Fertilizing Competence	$592,875
William Pickett	Public Health Sciences	Gender Inequalities in Adolescent Mental Health in Canada	$497,252
MITACS-Accelerate			
Diane Beauchemin	Chemistry	Improvement of Inductively Coupled Plasma Mass Spectrometry for Single Particle and Single Cell Analyses	$55,000
Doug Munoz	Centre for Neuroscience Studies	Developing Biomarker Identification Tools for Neurodegenerative Diseases	$90,000
MITACS - Globalink Research Award - Abroad			
Lola Cuddy	Psychology	Fear and Anger in the Way We Speak (Anja-Xiaoxing Cui, PhD candidate)	$6,000

Susanne Soederberg	Global Development Studies	Governing Global Shelter and Natural Hazards: A Study of Urban Housing in Dhaka and Amsterdam (Sarah Sharma, PhD candidate)	$6,000

NSERC - Collaborative Research Development

Ali Etemad	Electrical & Computer Engineering	Smart Meeting Room: Ubiquitous Speech Recognition and Analysis of Mental States of Attendees in Meetings	$3,000

NSERC - Discovery Launch Supplement - Discovery Grant Early Career Research for 2018

Fady Abdelaal	Civil Engineering	Long Term Performance of Bituminous and Modern Geomembrane Liners with High Interface Shear Strength (IMRSV Data Labs, Industry Partner for Cash Contributions, $50,000)	$12,500
Laurent Beland	Mechanical and Materials Engineering	Accelerated Atomistic Simulation of Dislocations in Nuclear Materials	$12,500
Joshua Dunfield	School of Computing	Programming Languages for Scalable Incremental Computation and Advanced Gradual Typing	$12,500
Suzan Eren	Electrical & Computer Engineering	Transforming Hybrid Micro-Grids from Theory into Reality Through Innovative Power Electronics Technology	$12,500
Ali Etemad	Electrical & Computer Engineering	Towards Ambient Affective Intelligence and Interaction in Smart Environments	$12,500
Vahid Fallah	Mechanical and Materials Engineering	Additive Manufacturing of Advanced Aluminum Alloys for Transportation Industry	$12,500
Javad Hashemi	School of Computing	Advanced Signal Processing Methods for Analysis of Fibrillatory Waves	$12,500
Louise Meunier	Chemical Engineering	Physiologically-Relevant Bioaccessibility Measurements of Inorganic Contaminants	$12,500
Suraj Persaud	Mechanical and Materials Engineering	High Temperature Oxidation of Metals	$12,500
Bhavin Shastri	Physics, Engineering Physics & Astronomy	Programmable Nanophotonics for Deep Learning and Neuromorphic Computing	$12,500

Xioadan Zhu	Electrical & Computer Engineering	Exploring Better Distributed Representation and Composition Models for Semantics	$12,500
Farhana Zulkernine	School of Computing	A Smart Big Data Analytics and Knowledge Management Framework	$12,500

NSERC – Engage Grant

Pascale Champagne	Beaty Water Research Centre	Biogeocementation - Biologically Catalyzed Reactions to Improve the Geotechnical Properties of Tailings Deposits	$25,000

Project Trauma Support

Dianne Groll	Psychiatry	Targeted Strategies to Support Return to Work and Recovery for Occupations That Are at Greater Risk for Re-Experiencing Psychological Trauma	$5,000