

## Senate Research Report

March 27, 2018

### News

#### *Strategic Research Plan Renewal*

The Senate Advisory Research Committee (SARC) has recommended the renewed Strategic Research Plan (SRP) for approval to Senate. The penultimate draft of the SRP is appended to the agenda package. Senate will be presented with the final plan in April for approval.

#### *Public Lectures: Prizes for Excellence in Research*

The annual Prizes for Excellence in Research Public Lectures will occur on April 3, 6:30 – 8:30 pm in the Biosciences Complex Atrium. These prizes are awarded to outstanding Queen's researchers and celebrate major research contributions either completed or recognized in recent years.

#### Speakers:

- Dr. Pascale Champagne, Department of Civil Engineering (Engineering)
- Dr. Liying Cheng, Faculty of Education (Social Sciences)
- Dr. Cathleen Crudden, Department of Chemistry (Natural Sciences)
- Dr. Sam McKegey, Department of English Language and Literature (Humanities)
- Dr. Denis O'Donnell, Department of Medicine (Health Sciences)

#### *Innovation Superclusters*

The Innovation Superclusters Initiative has announced the five successful superclusters that are going to usher in an unprecedented era of innovation and progress, creating 50,000 jobs and boosting our economy.

#### These superclusters include:

1. Digital Technology Supercluster – employing digital technologies will save time and money, improving the health and lives of Canadians.
2. Protein Industries Supercluster – building on Canada's worldwide reputation as a leader in agricultural production, this supercluster will make Canada a leading source for plant proteins and, ultimately, feed the world
3. Advanced Manufacturing Supercluster – focus on training and technology adoption, this supercluster will help make the words “Made in Canada” synonymous with “innovative” and “value added.”
4. AI-Powered Supply Chains Supercluster (SCALE.AI) – helping small and medium-sized Canadian businesses scale up in efforts to ensure Canada as a globally competitive export leader.

5. Ocean Supercluster — ensure Canada's future prosperity as a source of jobs and solutions to global challenges, such as how to meet the energy demands of the 21st century.

## Faculty Recognition and Awards

Three Queen's researchers are the recipients of Early Researcher Awards from the Ontario Ministry of Research, Innovation and Science:

- Frances Bonier (Biology) – \$140,000
- Carlos Escobedo (Chemical Engineering) -- \$140,000
- Madhuri Koti (Biomedical and Molecular Sciences) – \$140,000

Queen's University adjunct professor and mental health advocate Dorothy Cotton has been awarded the Order of Ontario, the highest citizen honour in the province. For more than 30 years, Dr. Cotton has been working with police organizations to help them change the way they respond to people with mental health challenges.

Queen's University professor Rosa Bruno-Jofré has been awarded the George Edward Clerk Award from the Canadian Catholic Historical Association for her work on Catholic History. This is the highest honour bestowed by the CCHA.

Queen's University professor Richard Ascough has received the prestigious 3M National Teaching Fellowship from the Society for Teaching and Learning in Higher Education (STLHE).

Queen's University researcher David Lyon's new book, *The Culture of Surveillance: Watching as a Way of Life* will appear this year from Wiley (North America, May) and Polity (UK, March).

The internationally-recognized Master of Art Conservation program at Queen's has received a grant of \$632,000 over five years from the Andrew W. Mellon Foundation to develop conservation research and online courses with a focus on Indigenous material culture.

## Research Funding

Researcher	Department	Project Title	Amount
Canadian MSK Rehab Research Network			
French, Simon	School of Rehabilitation Therapy	Improving the management of low back pain in the emergency department: a feasibility study	\$10,000
Canadian National Institute for the Blind			
Rullo, Jacob	Ophthalmology	Ocular inflammatory modulators in age-related macular degeneration: Defining a role for intraocular Vitamin D	\$24,873
Cancer Care Ontario			
Holden, Rachel	Medicine	Dialysis - Less frequently in the elderly (D-Lite) Pilot Study	\$14,649
Catherine Okenberg Foundation			
Pukall, Caroline	Psychology	The investigation of changes in clitoral structures during sexual arousal	\$6,000
Canadian Institutes of Health Research			
Brooks, Steven	Emergency Medicine	Rethinking public access defibrillation to build healthier cities - A planning meeting to build partnerships, identify novel strategies and plan for a large-scale community intervention	\$10,000
Cystic Fibrosis Canada			

This research report is meant to be an illustration of research activity at Queen's University and is based, on information provided to the Office of the Vice-Principal (Research) by University Research Services.

Poole, Keith	Department of Biomedical and Molecular Sciences	Identification and targeting of CF lung-driven antimicrobial resistance in <i>P. aeruginosa</i>	\$299,955
Foundation for Advancing Family Medicine, the College of Family Physicians of Canada, Scotiabank, and Associated Medical Services			
Le Blanc, Sarah	Family Medicine	The development and implementation of an integrated competency-based medical assistance in dying curriculum. The experience of one Family Medicine training program.	\$7,457
Mitacs - Accelerate			
Diak, Brad	Mechanical & Materials Engineering	MANU-1613 - Manufacturing of A205 components	\$106,667
Kim, Il Yong	Mechanical & Materials Engineering	Design, Analysis and Optimization of an Aircraft Seat	\$30,000
Mitacs - Globalink			
Masuda, Jeff	Kinesiology and Health Studies	Examining favelas, media, and activism in the 2016 Rio de Janeiro Olympics	\$5,000
Ministry of Research, Innovation and Science – ORF-SIF			
Dancey, Janet LeBrun, David Shepherd, Lois	Canadian Cancer Trials Group	Digital Pathology in Support of Cancer Clinical Trials	\$197,065
Davies, Claire	Mechanical and Materials Engineering	Building and Designing Assistive Technology	\$125,000
Davies, Peter Allingham, John	Biomedical & Molecular Sciences	Investigation of Large Protein Complexes	\$100,192
Lomax, Lysa	Medicine	Evaluation of the Role of Sleep for Novel Non-invasive EEG Biomarkers for Improved Diagnosis and Prognosis in Epilepsy	\$139,914

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Lord, Susan Robinson, Dylan Hill, Rosaleen	Film & Media/Cultural Studies/Art History	Social Ecology of Vulnerable Media: Preservation, Migration, Remediation of Women's and Indigenous Audiovisual Archives	\$400,000
Monaghan, Jacqueline	Biology	State-of-the-art Signal Transduction and Molecular Biology Laboratory	\$125,641
Mulligan, Lois Craig, Andrew Greer, Peter	Queen's Cancer Research Institute	Real-time Imaging Platforms for Monitoring Cancer Cell Motility and Metastasis	\$124,040
Orihel, Diane	Biology/Environmental Studies	A Hybrid Mesocosm- Ecosystem Facility for Aquatic Ecotoxicology	\$167,602
Rainbow, Michael	Mechanical & Materials Engineering	Subject-Specific Biomechanics of Human Joint Systems	\$400,000
Rival, David	Mechanical & Materials Engineering	Hemodynamics and Energy Mobility (HEMo) Laboratory	\$76,520
Rowe, Kerry	Civil Engineering	Long-term Performance of Geosynthetic Barrier Systems for Groundwater Protection	\$316,000
Smith, Graeme Johri, Amer	Obstetrics & Gynecology	Subject-Specific Biomechanics of Human Joint Systems	\$63,540
Yao, Zhongwen	Mechanical & Materials Engineering	Innovative Cladding Materials of Next Nuclear Generation Materials	\$167,400
Ministry of Research, Innovation and Science – ORF-RI			
Noble, Tony	Physics, Engineering Physics & Astronomy	PICO-500 A New Ultra- Sensitive Dark Matter Detector for SNOLAB	\$1,247,497
NCE - AllerGen			
Asai, Yuka	Medicine	Causes and Prevention: Identifying the genetic basis of peanut allergy	\$42,372

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NCE – Canadian Frailty Network			
Muscedere, John	Critical Care Medicine	Frailty, outcomes, recovery and care steps of critically ill patients (FORECAST) study	\$450,000
Natural Sciences and Engineering Research Council of Canada			
Compeau, Scott	Faculty of Engineering & Applied Science	Tech & Tinker Trailer - Mobile Makerspace	\$75,000
Champagne, Pascale	Civil Engineering	Feasibility for 'Real Time' Quantification of Wastewater Bacteriological Composition	\$25,000
Lai, Yongjun	Mechanical & Materials Engineering	Development of nanowires-PDMS dry electrode sensors for ambulatory ECG monitoring device	\$25,000
Liu, Yan-Fei	Electrical & Computer Engineering	Technology development for a high power three-phase electric vehicle charger using GaN devices	\$283,799
Ramsay, Juliana	Chemical Engineering	Minimization of GHG emissions in froth treatment tailing by manipulation of electron acceptors	\$274,320
Servier Canada Inc.			
Glover, Benedict	Medicine	Patient specific reasons for attending the emergency room in the setting of a background history of atrial fibrillation	\$39,900