Senate Research Report
May 20, 2009

Awards and Honours

The Canada Excellence Research Chairs (CERC) Program has announced Phase 1 results. Out of 135 submissions, 40 were selected to compete in Phase 2 of the competition. Queen's was invited to proceed to Phase 2 of the application stage for the project entitled *Nuclear Materials*, led by Drs. Rick Holt and Mark Daymond of the Department of Mechanical and Materials Engineering.
Publicly announced April 23, 2009

Research Funding Awarded

Natural Sciences and Engineering Research Council of Canada (NSERC)

NSERC Discovery Grants: 68 new and renewed for a total of $2,865,760, year 1 funding

Name	Dept	Title	Awarded
Dr. LW Aarssen	Biology	*Species assembly in vegetation under a changing climate: plant traits, contested resources, and community consequences*	$34,000
Dr. SE Arnott	Biology	*The influence of dispersal on zooplankton communities*	$37,000
Dr. SC Lougheed	Biology	*Diversification, adaptation and speciation in a temperate frog*	$40,000
Dr. LM Ratcliffe	Biology	*Communication and mate choice in birds*	$40,000
Dr. RM Robertson	Biology	*Neural responses to abiotic stress in locusts*	$60,000
Dr. JP Smol	Biology	*Limnology and paleoecology of lakes*	$138,000
Dr. PG Young	Biology	*Cell cycle control*	$50,000
Dr. YG Levin	School of Business	*Game-theoretic models in revenue management and dynamic pricing*	$24,000
Dr. M Guay	Chemical Eng	*Adaptive optimization and estimation of complex dynamical systems*	$55,000
Dr. BA Ramsay	Chemical Eng	*Control of medium-chain-length PHA properties*	$20,000
Dr. JA Ramsay	Chemical Eng	*Decoloration of industrial dye effluents using immobilized lignin degrading enzymes*	$30,000
Dr. RS Brown	Chemistry	*Physical organic studies of metal ion catalyzed acyl and phosphoryl transfer reactions in alcohols*	$105,000
Dr. T Carrington, Jr.	Chemistry	*New computational methods for studying the quantum dynamics of systems with five and more atoms*	$90,000
Dr. JH Horton	Chemistry	*Interfacial forces studied using scanning probe methods*	$50,000
Dr. PG Jessop	Chemistry	*Carbon dioxide chemistry for synthesis*	$75,000
Dr. DL Zechel	Chemistry	*Molecular analysis of microbial enzymes with biodegrative and biosynthetic potential*	$25,000

DR. MF Green	Civil Eng	*Fire resistance of concrete structures containing advanced materials*	$34,000
Dr. ID Moore	Civil Eng	*Soil-pipe interaction and the behaviour and design of urban pipe infrastructure*	$67,500
Dr. BE Chen	Community Health & Epidemiology	*Statistical methods in clinical trials and epidemiology studies*	$13,000
Dr. J Dingel	Computing, School of	*Putting more engineering into software engineering: Improving model-driven development*	$35,000
Dr. AE Hassan	Computing, School of	*Leveraging historical software repositories to understand and support software maintenance and change activities*	$35,000
Dr. HS Hassanein	Computing, School of	*Seamless service delivery in next generation wireless networks*	$60,000
Dr. DH Rappaport	Computing, School of	*Computational geometry and data analysis*	$15,000
Dr. H Shatkay	Computing, School of	*Translating data into knowledge: From biomedical sequences and text to disease prediction and prevention*	$35,000
Dr. JAR Stewart	Computing, School of	*Visualization and interfaces for computer-assisted surgery*	$19,000
Dr. RPH Vertegaal	Computing, School of	*Design and evaluation of organic user interfaces*	$40,000
Dr. M Zulkernine	Computing, School of	*Methods and tools for intrusion-aware software systems*	$35,000
Dr. SD Blostein	Electrical & Computer Eng	*High rate wireless communications with cooperation*	$56,000
Dr. I Kim	Electrical & Computer Eng	*Enhanced cooperative diversity communications*	$25,000
Dr. Y-F Liu	Electrical & Computer Eng	*High efficiency high power density voltage regulator module for next generation CPU*	$29,000
Dr. RK Danby	Geography	*Multiscale ecology and dynamics of the forest-tundra ecotone*	$19,000
Dr. SF Lamoureux	Geography	*Sediment mobilization and depositional indicators associated with recent and long term permafrost disruption*	$24,000
Dr. WE Mabee	Geography	*Evaluating the sustainability of bioenergy systems in Eastern Ontario*	$16,000
Dr. NP James	Geological Sci & Geological Eng	*Facies anatomy and early diagenesis of carbonate rocks*	$141,000
Dr. TK Kyser	Geological Sci & Geological Eng	*Tracing element migration in the near-surface environment*	$141,000
Dr. GM Narbonne	Geological Sci & Geological Eng	*Neoproterozoic paleobiology*	$77,000
Dr. GR Olivo	Geological Sci & Geological Eng	*Source-migration-trap models for precious metal deposits*	$30,000

Dr. KE Pyke	Kinesiology & Health Studies, School of	*The role of shear stress and sympathetic nervous activity in the regulation of human arterial function and structure*	$25,000
Dr. FI Alajaji	Math & Stats	*Joint source-channel coding theory with applications to wireless communication networks*	$56,000
Dr. AV Geramita	Math & Stats	*Algebraic geometry and commutative algebra*	$28,000
Dr. CD Lin	Math & Stats	*The design and analysis of large-scale computer experiments/variance estimations in complex surveys*	$13,000
Dr. N Yui	Math & Stats	*Arithmetic of Calabi-Yau varieties and mirror symmetry*	$16,000
Dr. JD Boyd	Mechanical & Materials Eng	*Microstructure-property relationships in steels having dual phase microstructures*	$30,000
Dr. G Ciccarelli	Mechanical & Materials Eng	*Research in gaseous explosion physics and prevention*	$25,000
Dr. MR Daymond	Mechanical & Materials Eng	*Influence of local crystallographic anisotropy on failure of metals*	$55,000
Dr. KJ Deluzio	Mechanical & Materials Eng	*Gait waveform analysis tools: application to knee osteoarthritis*	$25,000
Dr. GA Dumas	Mechanical & Materials Eng	*Biomechanics of the back for prevention of occupational musculoskeletal disorders*	$30,000
Dr. VD Krstic	Mechanical & Materials Eng	*Development of high toughness silicon nitride ceramics*	$23,000
Dr. L Notash	Mechanical & Materials Eng	*High performance parallel manipulators*	$25,000
Dr. PH Oosthuizen	Mechanical & Materials Eng	*Numerical and experimental studies of heat transfer in steady and unsteady laminar or turbulent natural and mixed convective flows*	$21,000
Dr. JM Pearce	Mechanical & Materials Eng	*Effects of nanostructure and defect states in solar photovoltaic materials*	$21,000
Dr. U Piomelli	Mechanical & Materials Eng	*Large-eddy simulations of complex flows*	$57,000
Dr. BW Surgenor	Mechanical & Materials Eng	*Advances in Intelligent Control and Manufacturing Automation*	$25,000
Dr. SD Waldman	Mechanical & Materials Eng	*Tensile stimulation of tissue-engineered cartilage*	$21,000
Dr. KF Jarrell	Microbiology & Immunology	*Genetics and biochemistry of surface structures of methanogenic archaea*	$70,000
Dr. PD Katsabanis	Mining Eng	*Investigation of fumes in commercial blasting*	$19,000
Dr. SJ Courteau	Physics	*Towards an understanding of galaxy structure*	$53,000
Dr. MJ Duncan	Physics	*Formation and dynamical evolution of planetary systems*	$45,000
Dr. SH Hughes	Physics	*Cavity-QED enabled light sources and disorder-induced light localization in photonic crystal chips*	$41,000
Dr. GR Lockwood	Physics	*A hybrid piezoelectric/silicon array for ultrasound intravascular/intracardiac imaging*	$48,000
Dr. AB McLean	Physics	*Microscopy and spectroscopy of molecular nano-systems*	$33,000

Dr. MC Dorris	Physiology	*The role of the frontal cortex in selecting strategic actions*	$30,260
Dr. M Paré	Physiology	*Parietal cortex persistent activity and working memory capacity*	$50,000
Dr. LL Cuddy	Psychology	*Music perception and cognition*	$25,000
Dr. JR Flanagan	Psychology	*Representing object weight in action and perception*	$45,000
Dr. BJ Frost	Psychology	*Neural mechanisms of complex motion analysis and insect migration*	$18,000
Dr. KG Munhall	Psychology	*Audiovisual speech perception*	$52,000
Dr. LB McLean	Rehabilitation Therapy, School of	*Ultrasound imaging to evaluate the biomechanics of the female pelvic floor*	$21,000

NSERC Research Tools and Instruments: 17 new grants for a total of $1,272,619

Name	**Dept**	**Title**	**Awarded**
Dr. WA Nelson	Biology	*Aquatic mesocosms to study the influence of zooplankton migration on predator-prey dynamics*	$39,659
Dr. BG Amsden	Chemical Eng	*Quartz crystal microbalance with dissipation monitoring*	$108,078
Dr. M Kontopoulou	Chemical Eng	*Twin-screw extruder for the production of polymer blends and composites*	$150,000
Dr. TFL McKenna	Chemical Eng	*Miniplant for the production of structured particles*	$150,000
Dr. RJ Neufeld	Chemical Eng	*UV/VIS spectrophotometer*	$24,664
Dr. JA Ramsay	Chemical Eng	*Microbial production of value-added products*	$68,956
Dr. RP Lemieux	Chemistry	*High-sensitivity differential scanning calorimeter*	$82,870
Dr. H-P Loock	Chemistry	*Fourier transform IR spectrometer for thin film characterization*	$90,451
Dr. RD Oleschuk	Chemistry	*Micro-structured optical fibers (MSFs) for open tubular chromatography and multi-nanoelectrospray mass spectrometry*	$81,280
Dr. G Wu	Chemistry	*A circular dichroism spectropolarimeter*	$117,455
Dr. RK Rowe	Civil Eng	*Stress-crack resistance of aged geomembranes*	$73,030
Dr. P Abolmaesumi	Computing, School of	*Ultrasound system with high frame rate and dynamic focus for prostate cancer diagnosis and intervention*	$61,124
Dr. JM Pearce	Mechanical & Materials Eng	*Emittance of solar selective absorbers*	$16,487
Dr. A Pollard	Mechanical & Materials Eng	*Light guide for PIV system*	$15,919
Dr. KF Jarrell	Microbiology & Immunology	*Anaerobic chamber*	$31,811
Dr. J Gao	Physics	*Non-contact profiling of soft condensed matter*	$61,276
Dr. IS Johnsrude	Psychology	*Steacie Supplement: Audiological and Cognitive Assessment Equipment, and Equipment for fMRI studies*	$99,559

Social Sciences and Humanities Research Council of Canada (SSHRC)

Standard Research Grants

Dr. J Bergin	Economics	*Optimal pricing with ex-post participation: Strategic issues in the use of intellectual property*	$62,000
Dr. R Boadway	Economics	*Designing tax – Transfer policy to achieve equality of opportunity*	$61,416
Dr. S Brodt	Business	*Promoting a cultural mosaic in a multicultural workplace: Balancing cultural identities to build productive, trusting and satisfying work relationships*	$82,700
Dr. K Brohman	Business	*Customer managed interactions*	$101,800
Dr. J Collins	History	*Christendom compromised: Statecraft, political theory, and religion in Britain, 1660-1760*	$45,000
Dr. Z Csergo	Political Studies	*The cohabitation of nationalism and transnational integration in post-communist Europe*	$75,493
Dr. P Cunningham	Business	*An open network approach to stakeholder engagement: The impact of power, respect and emotion*	$53,370
Dr. A D'Elia	History	*The pagan renaissance of Sigismondo Malatesta*	$51,000
Dr. J Gunn	Political Studies	*Search for consensus: Themes in 19th century French political thought*	$31,740
Dr. S Gyimah	Sociology	*Religion, religiosity, and reproductive behavior in Sub-Sahara Africa*	$79,000
Dr. J Helland	Art	*Collaboration, cooperatives and "Fair Trade": The early years of the arts and crafts movement*	$52,723
Dr. J Hiebert	Political Studies	*Australia and the parliamentary rights model*	$64,311
Dr. M Hird	Sociology	*Health research and society: A sociological analysis of ethical, public understanding and knowledge translation issues*	$89,695
Dr. J Holmes	Geography	*The impact of economic integration on workplace governance in the Ontario-U.S. Great Lakes States Cross-border Region*	$87,034
Dr. L-J Ji	Psychology	*Why do North Americans and Chinese predict the future differently?*	$91,600
Dr. F Kay	Sociology	*Gendered career trajectories: A longitudinal study of women and men lawyers' law practices and pro bono service commitments*	$102,576
Dr. R Kumar	Philosophy	*Contractualism and the contours of morality*	$51,300
Dr. D Lehoux	Classics	*What did the Romans know? An inquiry into worldmaking*	$59,000
Dr. S Lehrer	Policy Studies	*Understanding the dynamic relationship between substance use and academic performance in adolescence*	$60,000
Dr. R Lindsay	Psychology	*Increasing lineup size to reduce wrongful convictions*	$86,934

Dr. R Luce-Kapler	Education	*Developing critical awareness of normative structures: A study of senior learners' engagements with literary reading and memoir writing practices*	$124,604
Dr. J MacKinnon	Economics	*Reliable inference with clustered data*	$62,000
Dr. S Majumdar	Economics	*Leadership, belief formation and change*	$65,000
Dr. J Mckeen	Business	*CIO role perceptions: In-group favouritism and self-fulfilling prophecy*	$83,840
Dr. W Morrow	Religious Studies	*Akkadian literacy in Iron Age Judah?*	$30,907
Dr. M Nielsen	Economics	*Fractional cointegration in a vector autoregressive model*	$59,568
Dr. K Nossal	Political Studies	*The domestic politics of international stabilization missions*	$71,600
Dr. V Sacco	Sociology	*Community social capital, crime and victimization*	$49,835
Dr. L Snider	Sociology	*Corporate crime, surveillance and the asymmetries of power*	$110,000
Dr. H Sun	Economics	*Monetary theory with distributions*	$62,000
Dr. L Wade-Woolley	Education	*The role of speech rhythm in reading development and skilled reading*	$126,854
Dr. M Welker	Business	*The effects of mandatory international financial reporting standards adoption on market participants*	$71,860

SSHRC: Strategic Research Grant, Canadian Environmental Issues

Dr. J Webster	Business	*Implementing environmental responsibility in organizations through information technologies and systems*	$231,190

Principal's Development Fund, Fund for Support of Artistic Production (FSAP)

Dr. K Allik	Music	*Audio CD*	$5,000
Dr. J Fisher	Drama	*Twelfth Night in the twenties*	$5,000
Dr. K Renders	Drama	*East of Berlin*	$5,000
Dr. J Salverson	Drama	*The Banff Centre: The Secrets of Others: An Atomic Memoir*	$2,834
Dr. K Sellars	Art	*Robotic Sculpture*	$5,000

Canadian Institutes of Health Research (CIHR)

- Dr. John MacLeod (Physiology) received a one-year, non-renewable grant in the amount of $100,000 for his project *Novel Wnt paracrine signaling mediated by the intestinal extracellular calcium-sensing receptor (CaSR) inhibits defective Wnt signaling and stimulates differentiation*

- Dr. Laurent Seroude (Biology) received a one-year, non-renewable grant in the amount of $100,000 for his project *Investigation into the role of bacteria on aging in Drosophila*

- Dr. Graham Smith (Obstetrics and Gynecology) received a one-year, non-renewable grant in the amount of $100,000 for his project *The development of pre-eclampsia should lead to early cardiovascular risk screening*

- Dr. Daren Heyland (Medicine) received a Meetings, Planning and Dissemination Grant: Aging in the amount of $19,000 for *Aging and Critical Care: Building a National Multidisciplinary Research Program*

- Dr. Lucie Levesque (School of Kinesiology and Health Studies) received an Intervention Research (Healthy Living and Chronic Disease Prevention) grant in the amount of $300,000 for her project *Implementation and impact evaluation of an Aboriginal supplement to the Everybody gets to play Community Mobilization Tool Kit*

- Dr. Patricia Minnes (Psychology) received an Emerging Team grant: Children with Disabilities (Bright Futures for Kids with Disabilities) in the amount of $898,312 for her project *Developing Health, Education and Parent Partnerships to Promote Social Inclusion of Children with Developmental Disabilities*

- Dr. Robert Brison (Emergency Medicine) received a Randomized Controlled Trial in the amount of $741,776 for his project *Efficacy of a physical therapy intervention for the early treatment of acute ankle sprains identified in the emergency department*

- Dr. Robert Ross (School of Kinesiology and Health Studies) received a Randomized Controlled Trial in the amount of $1,828,298 for his project *Dose-response effects of exercise on abdominal obesity and risk factors for cardiovascular disease in women and men*

- Dr. Eric Dumont (Anesthesiology) received a Catalyst Grant: Prevention and Treatment of Illicit Substance Use in the amount of $100,000 for his project *Neurobiological basis of the effects of methamphetamine (Crystal Meth): a behavioural and electrophysiological study*

- Dr. Karen Yeates (Nephrology) received a Meetings, Planning and Dissemination Grant: Aboriginal Peoples' Health in the amount of $21,410 for *Meeting to develop an RCT Trials outline for a Canadian Aboriginal Polypill Trial*

National Cancer Institute of Canada (NCIC – now Canadian Cancer Society Research Institute):

- Dr. Michael Brundage (Oncology) received, but declined, an award of $249,866 for his project *A national "patterns of care" study in prostate cancer radiation therapy: development and use of quality indicators*

- Dr. Andrew Craig (Biochemistry) received an award of $382,500 for his project *F-BAR-containing adaptor proteins in EGFR signaling and lung cancer*

- Dr. Patti Groome (Community Health and Epidemiology) received an award of $158,601 for her project *Health care utilization and diagnostic delay in oral cavity cancer*

- Dr. Jeremy Squire (Pathology and Molecular Medicine) received an award of $668,680 for his project *Integrative genomics and epigenomics of osteosarcoma: a model of chromosomal instability in human cancer*

Collaborative Health Research Projects (CHRP) Award

- Dr. Parvin Mousavi (School of Computing) and her co-investigators, Dr. Purang Abolmaesumi (Queen's School of Computing), Dr. Alexander Boag (Queen's, Pathology), Dr. Gabor Fichtinger (Queen's School of Computing), Dr. David Siemens (Queen's, Urology), Dr. Stanislav Emelianov (U. Texas at Austin) and Dr. Shahram Shirani (McMaster U.) have been awarded $231,500 over the next 3 years for his *Decision support for augmented ultrasound-guided prostate biopsy*