RSC
The Royal Society of Canada
The Academies of Arts, Humanities and Sciences of Canada

SRC
La Société royale du Canada
Les Académies des arts, des lettres et des sciences du Canada

CLASS OF 2012
LIST OF NEW FELLOWS

ACADEMY OF THE ARTS AND HUMANITIES

HUMANITIES DIVISION

BURGESS, Richard - Department of Classical and Religious Studies, University of Ottawa
Richard Burgess is the pre-eminent historian of the Later Roman Empire in Canada. He is especially notable for his accuracy and his proficiency in a variety of auxiliary sciences. He has produced an impressive stream of important and original work involving the history, historiography, and coinage of the century and a half that led to the fall of the Western Roman Empire.

CAMERON, Christina - School of Architecture, Faculty of Environmental Design, Université de Montréal
Christina Cameron is an internationally recognized expert on UNESCO's World Heritage Convention, and is highly regarded for her outstanding contributions to present-day discussions of heritage theory and policy. She has been a speaker, panellist and moderator on prestigious Canadian and international forums in the course of a long career in the federal Public Service and at the Université de Montréal, where she has held the Canada Research Chair on Built Heritage since 2005.

DUFFIN, Jacalyn - History of Medicine, Queen's University
Jacalyn Duffin, MD (Toronto), FRCP(C), PhD (Sorbonne), hematologist and historian, occupies the Hannah Chair of the History of Medicine at Queen's University. A former President of both the American and Canadian societies for medical history, she is author of seven books and holds several awards for research, writing, teaching, and service. She teaches in medicine, history and philosophy and participates in a research project on music, memory and dementia. Her current clinical activity is in cancer care.

KEITH, Alison M. - Department of Classics, University of Toronto
Alison Keith's daring and imaginative cross-disciplinary research has established her as a leading authority on the ancient Latin poet Ovid, and broken new ground in the understanding of Roman literature and social history. Her pioneering contribution to the field of feminist studies in Latin literature disseminated through her many articles and books, engender a deeper understanding of ancient texts and ancient society.

LECKER, Robert - Department of English, McGill University
Robert Lecker is a leading authority on Canadian literature. His internationally recognized studies have explained the evolution of literary value in English Canada and have transformed our understanding of Canadian cultural identity.

MATTHEN, Mohan - Department of Philosophy, University of Toronto
Mohan Matthen has contributed importantly to three philosophical sub disciplines. He showed how Greek ontology was shaped by the syntax of the Greek verb "to be", and how Greek cosmology treats the universe as a single substance. He pioneered the statistical interpretation of the neo-Darwinian Theory of Natural Selection and espoused a relational view of species. He has played a synthesizing role in perception by treating knowledge formation as a kind of action.

ORCHARD, **Andy - Centre for Medieval Studies, University of Toronto**
Andy Orchard is widely acknowledged as one of the most influential and innovative scholars in the world in the field of Anglo-Saxon, Norse, and Celtic languages and literatures. He is particularly known for his scholarship on a range of material spanning more than eight centuries and including such iconic works and authors as Alcuin, Aldhelm, *Beowulf*, Boniface, Cynewulf, the *Poetic Edda*, Wulfstan, and the Anglo-Saxon riddle tradition.

ORWIN, Donna Tussing - Department of Slavic Languages and Literatures, University of Toronto
Donna Tussing Orwin is among the world's leading experts in Russian psychological prose, and especially Turgenev, Dostoevsky, and Tolstoy. She served as Editor of Tolstoy Studies Journal for eight years. She also studies literature and war in the Russian eighteenth and nineteenth centuries. In 2008 she received the Pushkin Medal from the Russian government for her contributions to Russian culture.

POPE, Peter E. - Department of Archaeology and Department of History, Memorial University of Newfoundland
Peter Pope's methodologically innovative research has shifted historical opinion to recognize the central place of Newfoundland and the cod fishery in the early-modern Atlantic world. He has raised thought-provoking questions about the invention of tradition, early modern vernacular capitalism and maritime cultural landscapes, giving a clear voice to a Canadian perspective, among those who are trying to better understand the evolution of the Atlantic world.

RICE, **Keren - Department of Linguistics, University of Toronto**
Keren Rice is a linguist who has done work in theoretical phonology, theoretical morphology, language description, and indigenous-community linguistics, focusing on Athabaskan languages of the Northwest Territories, Canada in particular. Her book, *A Grammar of Slave*, won the Leonard Bloomfield book award from the Linguistic Society of America. She has been honoured with the Killam Prize, the Molson Prize, and an eagle feather from First Nations House (University of Toronto).

STAINTON, **Robert - Department of Philosophy, Western University**
Robert Stainton's research lies at the intersection of philosophy and linguistics. Trained in functional linguistics at Glendon College (BA, 1988) and in generative grammar at MIT (Ph.D., 1993), most recently he has contributed to team projects on the history of philosophy of language, and on impairments in linguistic pragmatics in Autism Spectrum Disorders. He is Distinguished University Professor in the Department of Philosophy at Western, and Director of its Graduate Program in Linguistics.

STEVENS, **Paul - Department of English, University of Toronto**
Paul Stevens is an internationally renowned scholar of early modern English literature and culture and a world-class authority on the works of John Milton. His numerous publications have made ground-breaking contributions to Milton's politics and poetics, Shakespeare, early modern nationalism and colonialism, and the new historicism. He is Professor and CRC in English Literature at the University of Toronto and founder of the Canada Milton Seminar.

DIVISION DES LETTRES ET SCIENCES HUMAINES

ANCTIL, Pierre - Department of History, University of Ottawa
Pierre Anctil is Professor of History at the University of Ottawa. He was the first francophone researcher to take a close interest in Montreal's Jewish community, which he has studied for over thirty years. By introducing Yiddish as a third major cultural current with French and English, his work has entirely changed the way in which the history of Montreal is understood.

CAMPBELL, Bonnie - Department of Political Science, Université du Québec à Montreal (UQAM)
Dr. Bonnie Campbell's studies on international development, cooperation and natural resource development have influenced decision makers in United Nations agencies and continue to fuel current discussions and political processes internationally, particularly in Africa. She is the director of the Interdisciplinary Centre for Research on International Development and Society (CIRDIS) at UQAM and has written or co-authored a dozen books and over fifty journal articles, research studies and policy papers.

DELISLE, Jean - School of Translation and Interpretation, University of Ottawa
Jean Delisle is Professor Emeritus at the University of Ottawa. A doctoral graduate of the Sorbonne, his work has given fresh impetus to research on the history of translation and has renewed the pedagogy of translation by the conception of a new method of introducing students to translation disciplines. He is the author of numerous books and articles which have appeared in seventeen languages—a testimony to his work's originality and influence internationally.

ACADEMY OF SOCIAL SCIENCES

SOCIAL SCIENCES DIVISION

BANTING, Keith - School of Policy Studies, Queen's University
Keith Banting, a world-renowned expert on social policy, has advanced our understanding of the impact of federalism, globalization, and multiculturalism on the welfare state. Banting is widely respected for his ability to bridge theory and practice and for redefining complex policy issues. Banting holds the Queen's Research Chair in Public Policy. He is a former President of the CPSA, a former Vice-President of SSHRC, and a member of the Order of Canada.

BOYD, Susan B. - Faculty of Law, The University of British Columbia
Susan Boyd is internationally recognized as a leading socio-legal scholar who has made exceptional contributions to family law and feminist legal studies. She publishes prolifically on issues of fundamental importance to our times, such as the changing definitions of "family", "spouse", and "parent". Her scholarship questions the precise role of law in fields such as child custody by situating law within its larger socio-economic and ideological contexts.

COSSMAN, Brenda - Faculty of Law, University of Toronto
Brenda Cossman has achieved international recognition for her scholarship on issues that are fundamental to how Canadians see themselves, including freedom of expression, sexuality, and the legal regulation of intimate relationships. Across a broad range of disciplines and through a wide array of publications, including five books, a wealth of articles, newspaper columns, media interviews, and a number of law reform reports for governments, she has worked to make us think critically about how the law functions in the most public and private aspects of our lives, including the ways we value and experience family, intimacy, sexuality, and identity.

CURTIS, **Bruce - Department of History, Carleton University**
Bruce Curtis's work extends from the history of weights and measures to the contemporary regulation of youth sexuality, and from the politics and practices of census-making in nineteenth century Canada and the development of schooling in Quebec to the sociology of African-American music.

FELDMAN BARRETT, Lisa - Department of Psychology, Northeastern University
Lisa Feldman Barrett is an internationally recognized pioneer in the scientific study of emotion. Her work seamlessly integrates philosophy, psychology, and neuroscience. She is best known for her groundbreaking work on emotional experience in humans, and for demonstrating the importance of language in the ability to perceive emotional expressions. In a series of seminal conceptual papers that quickly became modern classics in the field, her work challenged dominant emotion models, leading a paradigm shift in the field.

FORTH, Gregory - Department of Anthropology, University of Alberta
Gregory Forth is an internationally recognized social anthropologist and ethnobiologist working in Indonesian studies. His reputation is founded on his extensive field research and the exemplary quality of his numerous books and published papers, in regard to theoretical advances, analytical insight, and their basis in substantial and meticulous ethnography. Professor Forth's research on indigenous hominoid images first published in 1998, anticipated palaeoanthropological research leading to the discovery of *Homo floresiensis* in 2003.

HALL, John A. - Department of Sociology, McGill University
John A. Hall has made important scholarly contributions in a prolific career in the areas of nationalism, liberalism, state theory and international relations. He has been the recipient of the Marcel Vincent Prize from Quebec. He served as Dean of the Faculty of Arts during a crucial period of renewal. He is currently completing a book on nations, states and empires.

JAMES, Carl E. - Faculty of Education, York University
Carl James is a nationally and internationally recognized scholar in the areas of youth studies, race and ethnic relations, immigration, and education. A sociologist, his eminence is evidenced by his formidable and consistent scholarship in a career spanning more than 25 years. A highly respected educator, researcher, mentor and teacher, James has made important contributions to our understanding of the social and educational issues affecting marginalized people in Canada and elsewhere.

KINGSTONE, Alan - Department of Psychology, The University of British Columbia
Alan Kingstone has changed the fields of cognitive science and cognitive neuroscience through key insights, critical data and groundbreaking theory. For instance, his new field of research, Cognitive Ethology, emphasizes that the processes of brain and mind depend critically on the situational contexts within which humans are embedded. This work poses a fundamental challenge to the status quo, and presents novel ways to study and conceptualize the human experience.

PETERSON, Carole - Department of Psychology, Memorial University of Newfoundland
Carole Peterson, through developing new methodologies, has pioneered three new areas of child psychology: narrative ability, eye-witness memory and early childhood amnesia. Her impact has been profound: illiterate parents are being trained to help their children communicate in ways that lay the foundation for reading; children now have a legitimate voice in court; and powerful public response to her newest work is raising awareness of the importance of social science research.

DIVISION DES SCIENCES SOCIALES

BOURHIS, Richard Yvon - Department of Psychology, Université du Québec à Montréal
Richard Bourhis is an internationally renowned social psychologist, whose studies have been concerned with issues of discrimination, acculturation and bilingual communication. His contributions have earned him an honorary doctorate at the Université de Lorraine in France, and election as a fellow of several learned societies. His concern for ethnic minorities has made him a key academic influence on issues of managing cultural diversity and fighting discrimination.

CRÉPEAU, François - Faculty of Law, McGill University
Hans & Tamar Oppenheimer Professor in Public International Law and scientific director of the Centre for Human Rights and Legal Pluralism, Faculty of Law, McGill University. United Nations Special Rapporteur on the Human Rights of Migrants. Guest Professor at Université catholique de Louvain. Fellow 2008-2011 of the Pierre Elliott Trudeau Foundation. Member of several editorial boards: Journal of Refugee Studies, International Journal of Refugee Law, Refuge, Droits fondamentaux, Refugee Law Reader.

OTIS, Ghislain - Civil Law Section, Faculty of Law, University of Ottawa
Ghislain Otis holds the Canada Research Chair on Legal Diversity and Aboriginal Peoples in the Faculty of Law at the University of Ottawa. His work as the leader of international multidisciplinary teams is concerned primarily with the rights of Aboriginal peoples, and more specifically with the interactions between Aboriginal and Western legal cultures in an effort to break with colonialist logic through the development of models with shared legal norms.

PARÉ, Guy - Department of Information Technologies, HEC Montréal
Guy Paré has gained international recognition for his research on information technology in the healthcare sector. His work over the years has made it possible to better understand and manage the organizational, strategic, political, technological and human risks associated with the introduction of clinical IT systems in healthcare institutions and explain the clinical, behavioural, structural and economic effects of health telematics ("telehealth").

PELLETIER, Réjean - Department of Political Science, Université Laval
Réjean Pelletier is a nationally and internationally renowned student of politics in Canada and Quebec. His highly original work, with its critical and comparative perspective, largely based on empirical studies of parliamentarianism, political parties, women in politics, Canadian federalism and political trust, has called many conventionally accepted ideas into question and ranked him as one of the leading researchers in these fields.

ACADEMY OF SCIENCE

APPLIED SCIENCES AND ENGINEERING DIVISION

CAÑIZARES, Claudio Adrián - Department of Electrical and Computer Engineering, University of Waterloo
Claudio Cañizares has done pioneering work in the field of voltage stability analysis of power systems, which has helped electric utilities worldwide, understand and prevent voltage collapse. He is currently working on various aspects of power system analysis, control and optimization in the context of Smart Grids, renewable resources, energy systems and competitive electricity markets. He is considered one of the top power engineering researchers in Canada.

EDWARDS, Elizabeth - Department of Chemical Engineering and Applied Chemistry, University of Toronto
Elizabeth Edwards has achieved international recognition for her pioneering research on how biological processes affect pollutants in the environment. Her research was largely responsible for disproving the belief that monoaromatic hydrocarbons such as benzene could not be biologically degraded under anaerobic conditions. She also developed a microbial culture called KB-1, dominated by unusual organohalide-respiring bacteria, that is an effective low-cost solution for cleaning up industrial sites contaminated by chlorinated solvents.

KSCHISCHANG, Frank R. - **Department of Electrical and Computer Engineering, University of Toronto**
Frank Kschischang is an international authority and leading researcher in digital communications and coding theory. He is a co-inventor of the factor graph, a type of graphical model that implements an efficient probabilistic-inference algorithm with wide-ranging applications. His work on subspace codes for network coding introduced a radically new approach to error-control for coded networks and his groundbreaking work on optical communications has had both theoretical and industrial impact.

LARTER, **Stephen - Department of Geoscience, University of Calgary**
Steve Larter is a geoscientist who has contributed to many aspects of our understanding of the origin and alteration of petroleum (oil and gas) in the Earth. The work has ranged from basic studies of organic matter and microbial life in the crust of the Earth to practical technology developments related to energy supply and carbon management. Steve is also a Fellow of the Royal Society and a foreign member of the Norwegian Academy of Science and Arts.

MORANDOTTI, **Roberto - Centre Énergie Matériaux et Télécommunications, Institut National de la Recherche Scientifique (INRS)**
Roberto Morandotti is a pioneer in nonlinear and integrated optics, two fields of research where his work has opened new exciting possibilities towards all-optical computing and information processing. In particular, his numerous and novel contributions in the study of photonics lattices are considered as milestones in revealing the nonlinear dynamics of discrete systems. His career is characterized by numerous high profile international collaborations and publications. Dr. Morandotti is the recipient of an E.W.R. Steacie Memorial Fellowship 2011, a Fellow of the Optical Society of America and a Fellow of the SPIE.

PEDRYCZ, Witold - Department of Electrical & Computer Engineering, University of Alberta
For recognition of pioneering, highly original, and influential contributions to Computational Intelligence and its applications to system analysis; W. Pedrycz developed fundamental concepts and algorithmic foundations in the disciplines of neurocomputing, fuzzy sets, and evolutionary optimization, forming the essence of Computational Intelligence. He has made fundamental and high-ranking contributions to the concepts and practice of Granular Computing, profoundly facilitating human-oriented processing in intelligent systems.

RAGHAVAN, Vijaya - Department of Bioresource Engineering, McGill University
Vijaya Raghavan is a research scientist and engineer who studies and develops pre- and post-production technologies and processes for growing and handling crops and horticultural produce. His work on soil management, controlled environment storage, drying, and thermal processing have led to the development of technologies and techniques that are being applied in developmental work in India and potentially in Africa to address issues of food security and safety, and poverty.

ROSE, **Jonathan Scott - Department of Electrical & Computer Engineering, University of Toronto**
Jonathan Rose is a world leader in the area of Field-Programmable Gate Arrays, which are pre-fabricated digital chips that can be programmed to become any digital circuit. These devices form the backbone of the Internet, cellular networks and many other systems that required digital hardware. Rose and his students have done pioneering work on the global structure of these devices, and the software algorithms and tools needed in their use.

EARTH, OCEAN AND ATMOSPHERIC SCIENCES DIVISION

CULLEN, John J. - Department of Oceanography, Dalhousie University
John Cullen has made fundamental and lasting contributions to our understanding of marine phytoplankton. They have included basic and applied contributions in fields as diverse as development of ocean observation technologies; the environmental impact of enhanced UV radiation arising from ozone depletion; the science and public policy underlying ocean fertilization; and the ecology, detection and management of harmful algal blooms.

ENGLAND, John H. - Department of Earth and Atmospheric Sciences, University of Alberta
John England is internationally acclaimed for his 45-year survey throughout Arctic Canada reconstructing the behaviour of ancient ice sheets, sea ice and sea level that illuminate our understanding of modern Arctic environments. He is one of Canada's prestigious NSERC Northern Research Chairs, spearheaded the establishment of Canada's northernmost National Park, is a leading advocate for a Canadian Polar Policy and is actively engaged in mentoring Inuit and Inuvialuit students.

FERRIS, Frederick Grant - Department of Geology, Earth Sciences Centre, University of Toronto
The transformative work of Professor Grant Ferris, notable for its depth, breadth, interdisciplinary nature and fundamental role in defining the new discipline of microbial geochemistry, has made him one of the world's premier scientists exploring problems at the interface between the biological and physical sciences. He has established a profound new understanding of the pervasive importance of microbial activity throughout Earth's diverse environments, credited with the discovery and development of a range of novel contributions to his discipline.

HANNINGTON, **Mark - Department of Earth Sciences, University of Ottawa**
Mark Hannington is an award-winning economic geologist whose research spans the exploration of mineral resources on the modern seafloor to ancient ore deposits in Canada's major mining districts. His pioneering work on the geology and geochemical evolution of actively forming mineral deposits in the oceans has revised conventional ideas of ore genesis on land and strongly influenced mining exploration in Canada.

MOORE, **Timothy - Department of Geography, McGill University**
Dr. Tim Moore has made outstanding contributions to our understanding of the interactions between soils and the environment in a variety of settings. He is an acknowledged expert in both field and laboratory studies. A leader in the biogeochemistry of soils and ecosystems, Dr. Moore has investigated greenhouse gas exchange and carbon cycling under both natural and disturbed conditions in Canada and elsewhere, published widely and been cited frequently.

LIFE SCIENCES DIVISION

BEAUDET, **Alain - Canadian Institutes of Health Research**
Dr. Alain Beaudet is a visionary, extraordinary leader, neuroscientist and research administrator. He has played a major role in developing Canada's health research enterprise. As a scientist, he has shed new light on mechanisms underlying neuronal communication and was the first to propose the existence of non-synaptic neurotransmission in mammalian brain. Dr. Beaudet enjoys a well-deserved international reputation as a science innovation catalyst for his remarkable leadership and collaborative abilities.

BERNSTEIN, **Charles Noah - Health Sciences Centre, University of Manitoba**
Charles Bernstein is an internationally recognized leader in the study of inflammatory bowel disease (IBD). His main academic focus is the pursuit of epidemiological and etiological research in IBD. He has received numerous awards and has published 286 peer reviewed papers and 26 book chapters. He is the editor of the Inflammatory Bowel Disease Yearbook, now in its 7th edition. He holds the Bingham Chair in Gastroenterology at the University of Manitoba.

BLACK, **Sandra E. - Sunnybrook Health Sciences Centre, University of Toronto**
Dr. Sandra Black is a pre-eminent cognitive neurologist, recognized internationally as a research leader and clinical trialist in both stroke and dementia. She has exploited leading-edge neuroimaging techniques for detection, diagnosis, monitoring outcomes and studying brain-behaviour relationships. She has developed research infrastructure, exemplified by the Heart and Stroke Foundation Centre for Stroke Recovery, and has won many mentorship awards. She combines enormous dedication to patients with cutting-edge science.

DENNIS, **James W. - Mount Sinai Hospital, University of Toronto**
Dr. Dennis has done pioneering work in cancer research leading to an understanding of genetic and structural changes that promote metastatic spread. In an elegant series of experiments, Dr. Dennis characterized the biochemical pathway that adds complex carbohydrate structures to cell surface proteins, and developed a unifying model of growth factor receptor regulation. The model has been applied to the discovery of heritable genetic and metabolic susceptibility in autoimmune disease.

DOEBELI, **Michael - Department of Zoology, The University of British Columbia**
Michael Doebeli is a world-renowned mathematical evolutionary biologist whose theoretical and experimental research has generated a paradigm shift in our understanding of the evolution of biological diversity. Once viewed as theoretically impossible, speciation in sympatry, i.e. without geographic isolation, is now accepted as a plausible evolutionary process. Doebeli also made foundational contributions to a unified theory of the evolution of cooperation.

DRUCKER, **Daniel J. - Mount Sinai Hospital, University of Toronto**
Daniel Drucker is recognized for innovative science focused on identifying novel actions of the glucagon-like peptides and their receptors, and for efforts illuminating the utility of glucagon-like peptides and DPP-4 inhibitors for the treatment of diabetes and intestinal disorders.

GUYATT, **Gordon H. - Department of Clinical Epidemiology and Biostatistics, McMaster University**
In 1990, Gordon Guyatt coined the term "evidence based medicine" (EBM). Since then, he has championed evidence-based approaches to clinical decision making, including enormous contributions in clinical research, training hundreds of clinicians-educators and dozens of clinician scientists. His Users' Guides to the Medical Literature laid the groundwork for subsequent EBM writings. His contributions include seminal work in methodology underlying randomized trials, systematic reviews, health status measurement, and clinical practice guidelines.

ILLES, Judy - Department of Medicine, The University of British Columbia
As a pioneer and eminent scholar in the field of Neuroethics, Judy Illes has made groundbreaking contributions to ethical, social, legal, and policy challenges at the intersection of biomedical ethics and neuroscience. These intersections span advances in neuroimaging, stem cells, dementia, neurodevelopmental disorders, addiction, gene therapy, communication and knowledge sharing about the brain sciences, and the commercialization of health care.

KENNEDY, **James L. - Centre for Addiction and Mental Health, University of Toronto**
James Kennedy's innovative research has resulted in pioneering discoveries relating gene variants to psychiatric disorders, brain imaging and treatment response. He has found genetic predictors of risk for attention deficit disorder, schizophrenia, obsessive compulsive disorder, mood disorders, and medication side effects including tardive dyskinesia, drug-induced mania and weight gain. He has translated these findings into pharmacogenetic tests in clinical care, and influenced pharmacogenetic research and its application at an international level.

NAROD, **Steven - Women's College Research Institute, University of Toronto**
Dr. Steven Narod has proven that hereditary breast/ovarian cancers are preventable, and he has also found that many Ontario women with *BRCA1/2* mutations are ineligible for provincially funded genetic testing. For women unwilling to undergo radical surgeries, he is pinpointing dietary options that reduce risk. His database of 12,000+ women from 30 countries supports numerous international collaborations. Author of over 550 peer-reviewed publications, Dr. Narod has an H-index of 84.

OUELLETTE, **Marc - Centre de Recherche en Infectiologie, Université Laval**
Professor Marc Ouellette is the Canada Research Chair in Antimicrobial Resistance at Université Laval. He obtained his B.Sc. from Université d'Ottawa in 1983 and a Ph.D. from Université Laval in 1987. He carried out post-doctoral work at the Netherlands Cancer Institute. In 1990, he established a research program in the genomics of antimicrobial resistance at Université Laval. He has published over 165 peer-reviewed articles, 15 book chapters and is the author of 6 patents.

PARK, David S. - Department of Cellular and Molecular Medicine, University of Ottawa
David S. Park is a renowned neuroscientist and leader in Parkinson's disease and stroke research. His work in defining novel neuronal death signaling pathways, and deciphering how Parkinson's genes regulate critical biological processes involved in mitochondrial dynamics, have provided important insight into the mechanisms underlying degenerative brain diseases.

PROUD, **David - Department of Physiology and Pharmacology, University of Calgary**
Dr. David Proud has made important contributions to our understanding of the molecular mechanisms that trigger the symptoms of inflammatory airway diseases, such as asthma. In addition, his translational studies on how common respiratory viruses trigger attacks of asthma and other lower airway diseases, and on the body's own defense mechanisms against such viruses, have identified novel treatment approaches for viral exacerbations of lower airway diseases.

ROGER, Andrew J. - Department of Biochemistry and Molecular Biology, Dalhousie University
Andrew Roger's work has led to an important shift in understanding the early evolutionary history of Life. He showed that the last common ancestor of all nucleus-containing organisms (eukaryotes) was a fully complex cell and that the eukaryotic domain is comprised of half a dozen major super-kingdom-level lineages. He pioneered the development of new statistical models of molecular evolution and computational methods for determining evolutionary relationships.

VOGEL, **Hans J. - Department of Biological Sciences, University of Calgary**
Dr. Hans Vogel is one of Canada's leading biochemists, who have made numerous contributions to our understanding of metalloproteins. His research also focuses on antimicrobial and host-defense proteins that are integral to the innate immune defense that protects us against various diseases. Recently his group has also started to work on "metabolomics" attempting to develop new diagnostic and prognostic methods in the areas of cancer and infectious or inflammatory diseases.

WRIGHT, Gerard D. - Department of Biochemistry and Biomedical Sciences, McMaster University
Dr. Wright's research is centered on understanding the origins, evolution and molecular mechanisms of antibiotic resistance in bacteria. This information is applied in the discovery new anti-infective compounds in particular from microbial natural products.

YAN, Norman - Department of Biology, York University
Norman Yan's research has led to a deep understanding of the role of freshwater animal plankton, or zooplankton, in the ecology of lakes. He is a world leader in analyzing both the damage to zooplankton caused by acid rain and metal pollution, and more recent recovery from these pollutants. He is also internationally recognized for his research on the effects of predatory invaders and environmental calcium decline on lakes.

MATHEMATICAL AND PHYSICAL SCIENCES DIVISION

CONDON, Anne - Department of Computer Science, The University of British Columbia
Anne Condon, a researcher in computational complexity theory and algorithms, has advanced understanding of the computing time and memory needed to solve classical computational problems. She has also developed creative means for programming at the nanometer scale with DNA molecules. Her algorithms for predicting and designing nucleic acid secondary structures have had significant practical impact.

FAHLMAN, Gregory G. - Herzberg Institute of Astrophysics, National Research Council of Canada
Dr. Gregory G. Fahlman has contributed broadly to research excellence in the field of astrophysics chiefly in the field of stellar populations. His continuing research contributions have fed his vision for the participation of Canadian researchers, engineers and industrial collaborators in major international astronomy projects, contributing to Canada's status as a world leading nation in astronomy and astrophysics.

HENDREN, Laurie - School of Computer Science, McGill University
Professor Laurie Hendren is a world leader in the area of compilers. Her McGill research team is renowned for both new compiler techniques that automatically analyze, transform and optimize programs, and for novel compiler toolkits that are used by researchers world-wide. She is a Fellow of the ACM and holds a Canada Research Chair in Compiler Tools and Techniques.

LENNOX, Bruce - Department of Chemistry, McGill University
R.B. Lennox specializes in the synthesis and application of molecules and nanoscale materials that are encoded to self-assemble. The resulting self-assembled materials provide an entry to applications ranging from biosensors to photonics to biomedical devices.

LI, Chao-Jun - Department of Chemistry, McGill University
Chao-Jun Li is an international leader in Green Chemistry—the vitally important field involving the discovery and development of environmentally benign chemicals and chemical processes. He has received both the US Presidential Green Chemistry Challenge Award and the Canadian Green Chemistry and Engineering Award on the subject. In 2007, the Canadian Chemical News listed his research as "one of the most important chemistry discoveries of the past century in Canada".

PAGE, Don N. - Department of Physics, University of Alberta
Don Nelson Page has made profound contributions to theoretical gravitational physics, cosmology, and quantum theory. Among his accomplishments are the determination of the colour and intensity of Hawking radiation from black holes; new solutions to Einstein's gravitational field equations and a demonstration of the non-chaotic nature of free fall in them; the discovery of the Hawking-Page phase transition; and the refutation of three major claims by Stephen Hawking.

ROSENTHAL, Jeffrey S. - Department of Statistics, University of Toronto
For profound and deep contributions to probability and statistics, including highly original and influential results on the mathematical analysis of Markov chain Monte Carlo methods. For exceptional breadth of application of statistics and statistical computing to problems in science and social science. For dedicated and skilled communication of probability and statistics to the broader public through his best-selling book, *Struck by Lightning*.

SHAM, Tsun-Kong - Department of Chemistry, Western University
For three decades, Prof. T.K. Sham has been a Canadian and international leader in the development and use of soft X-ray synchrotron techniques for the study of matter and has become internationally known for his unique studies of nanomaterials. He has developed three novel techniques: conductivity XAFS of liquids; x-ray excited optical luminescence (XEOL); and time-resolved XEOL (TRXEOL). The latter two have been applied to obtain unique structural and electronic information for a variety of technologically important materials.

SLATER, Gary W. - Department of Physics, University of Ottawa
Professor Slater is known internationally for his fundamental and interdisciplinary contributions to separation science, including DNA electrophoresis—the key laboratory method used to sequence the Human Genome. He has proposed innovative ideas for new bioanalytical instruments that can exploit the subtle properties of biological molecules in very small systems. He has also pioneered the use of advanced computational simulation methods to study complex problems in biological physics and analytical chemistry.

FOREIGN FELLOW

SOMASUNDARAN, Ponisseril - Department of Earth and Environmental Engineering, Columbia University
Ponisseril Somasundaran is recognized for his ground-breaking contributions towards unraveling complex nano-scale structures and energetics of surfactant self-assemblies and polymer-surfactant hybrids at interfaces. He pioneered the use of spectroscopic methods for probing surfactant self-assemblies. His work forms the backbone of many of the current practices in ultra-lean ores beneficiation, hazardous materials/waste water treatment and personal care industry. His seminal work continues to be vital for meeting today's environmental and sustainability needs.

HONORARY FELLOW

CHARLEBOIS, Robert - Singer, Songwriter
Through his prolific career of more than 50 years as songwriter, musician and singer, Robert Charlebois has become a key figure of Quebec and of French-language music throughout the world. He has left his stamp on his period and exerted a profound influence on numerous Quebec authors, composers and singers. During his career, Robert Charlebois has received many prizes and awards that speak of his reputation among his peers and of the quality of his thousands of live performances and of his thirty albums. His last opus, *Tout est bien*, released in Fall 2010 could very well be his best work since the 70s, with new songs on par with the classic hits of his repertoire. Robert Charlebois has a unique voice that is, as always, an essential part of French-language song—the voice of an icon.