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The Academies of Arts, Humanities and Sciences of Canada
Les Académies des arts, des lettres et des sciences du Canada

2007 New Fellow Citations

Notices académiques des membres élus en 2007

ACADEMY OF THE ARTS AND HUMANITIES

ACADÉMIE DES ARTS, DES LETTRES ET DES SCIENCES HUMAINES

Division of Humanities

BAYLIS, Françoise - Departments of Bioethics and Philosophy, Dalhousie University

Françoise Baylis is a philosopher whose innovative work in bioethics has stretched the very boundaries of the field. Her extensive publication record spans many topics, including research involving children, the role of bioethics consultants, women's health, human embryo research, and novel genetic technologies. At the center of her research lie questions of justice, especially intergenerational justice as it applies to our responsibility to future generations when we undertake research programs that may alter the nature of humans. Her work challenges readers to think broadly and deeply about the direction of health research and technology.

BOSE, Mandakranta - Professor Emerita, University of British Columbia

Mandakranta Bose is a leading scholar of the classical performing arts of India, especially the arts of dance and mime, and her many publications are acknowledged internationally. Her reconstruction of the ancient tradition of dance and mime in India is based on all extant Sanskrit texts on dance, drama and music. Her mapping of the evolving discourse of Indian performing arts has gained her world-wide recognition from both scholars and performing artists. Her current work extends her research to gender representations in India's performing arts and epic literature, thereby throwing fresh light on the ideological foundation of Indian culture.

BROWN, James Robert - Department of Philosophy, University of Toronto

James Robert Brown has been a prominent Canadian philosopher for more than two decades. He is very well known for his work in at least three areas: thought experiments in the natural sciences, visual reasoning in mathematics, and various issues involving the relation between science and society. His views--from Platonism in thought experiments, to pictures as genuine mathematical proofs, to his call for the end of patents in medical research--are often controversial, but have frequently won favour and invariably provoked stimulating and fruitful debate.

***BUBENIK, Vit – Department of Linguistics, Memorial University of Newfoundland**

Vit Bubenik is a master of several Humanities disciplines: Classics, Indology, Slavic, Semitic, Medieval Studies, Comparative and Historical Linguistics, who has added a new dimension to such studies. His monographs *The Phonological Interpretation of Ancient Greek and Hellenistic and Roman Greek as a Sociolinguistic Area* present new sociolinguistic insights to the study of ancient languages, based on the extensive corpora of Ancient Greek inscriptions, product of the massive archaeological work of the 19th and 20th centuries. He has established that linguistic idiosyncrasies recorded on long-buried stones can yield important new information on life and languages of the past.

***CARTER, Sarah A. - Department of History and Classics, University of Alberta**

Sarah Carter is a renowned Western Canadian historian. She has transformed the field with her award-winning books, which have contributed to a rethinking of Canada's Western past, particularly the need to see the West as a shared place, created by diverse women and men, and as a place that must be understood within a colonial framework. Using feminist and postcolonial filters, her books and articles have charted new directions in Canadian history. Her work is used in university courses, in land claims and treaty rights research and as resources to assist the public to understand the history of race relations in the West.

FINDLAY, L.M. (Len) - Department of English, University of Saskatchewan

Len Findlay trained at Oxford in European cultural history and produced influential work on Romantic and Victorian authors and movements. He has more recently turned to the reciprocal nineteenth-century flows of radical thought between Europe and Canada, and to the failure of Canadian radicals to show common cause with Canada's First Nations, Inuit, and Métis. He works on and for academic freedom, on decolonizing universities, and on the role of culture in nation-formation. For the past decade he has collaborated with Aboriginal colleagues in defining and promoting the Indigenous Humanities.

GRODEN, Michael - Department of English, University of Western Ontario

Michael Groden is an internationally recognized authority on the works of James Joyce, especially Joyce's novel *Ulysses*, and the world's leading authority on the manuscripts for *Ulysses*. He has produced a groundbreaking book on Joyce's writing of *Ulysses* based on surviving manuscripts; a unique 63-volume photo-facsimile edition of all of Joyce's surviving manuscripts; and a detailed report for the National Library of Ireland when new Joyce manuscripts were discovered in 2001. He is the co-editor of an acclaimed guide to literary theory and criticism, now in its second edition, and of a book of translated French essays on manuscript study.

LANCASHIRE, Ian - Department of English, University of Toronto

Ian Lancashire is Canada's pioneer and premier theorist and practitioner of humanities computing. Through his creative research and teaching, he has revealed the rich scholarly possibilities of electronic technology and, in the process, revolutionized the work of teachers and scholars around the world. The recent recipient of a lifetime achievement award, he is the co-developer of the widely recognized text-analysis program, TACT; the creator of five public research and educational Internet databases, including the award-winning *Representative Poetry Online*; and a Senior Principal Investigator for TAPoR--a multi-university research consortium. Almost single-handedly, he has placed Canada in the forefront of the digital humanities.

***MIKI, Roy A. - Department of English, Simon Fraser University**

Roy Miki's career is distinguished by his remarkable achievements in the three entwined areas of activity that shape his profile as an outstanding public intellectual. He is a leading critic and scholar of North American literature, especially contemporary Canadian poetry and Asian-Canadian literary

studies, the latter a significant field that he established almost single-handedly. He is a writer who has received the country's highest honour, the Governor General's Award for Poetry. He is also a human rights activist whose work in the Japanese redress movement during the 1980s helped change the shape of Canadian society, and whose sense of social commitment now focuses on the power imbalances created by globalization.

***PHILLIPS, Mark S. - Department of History, Carleton University**

Mark Salber Phillips has helped to bring a new literary and philosophical sophistication to the study of the historical thought of both the Italian Renaissance and early modern Britain. Phillips's scholarship has been marked by its unusually wide chronological range as well as by its interdisciplinarity. The result is a body of work that has had an important impact not only for intellectual historians, but also for students of 18th and early 19th-century literature. His international reputation as a leader in his field has been signalled by many forms of scholarly recognitions, including a long list of international fellowships.

***PHILLIPS, Ruth - School for Studies in Art and Culture, Carleton University**

Ruth Phillips is the leading figure in the study of the First Nations arts of Canada and one of the main architects of the change that has taken place in the Canadian reception of those arts during the last thirty years. Through her work as a curator and museum director as well as her art-historical scholarship, she has uncovered and analyzed Aboriginal works that lay hidden in museum storerooms in North America, Europe and Russia and introduced new collaborative models in which academic and community-based Aboriginal knowledge is combined to dismantle stereotypes and improve the accuracy of public representations.

WAISER, William A. - Department of History, University of Saskatchewan

W.A. (Bill) Waiser combines an impressive record of scholarly publication with effective communication of scholarship to the general public and service to his professional peers to make a profound contribution both to the academic world and Canada's general citizenry. His scholarship always ties the western region on which it is focused to the wider concerns and interests of the nation of which the West is a part, and he regularly communicates his findings to the general public through television and the press. These practices extend Waiser's valuable scholarship from the ivory tower to the public square.

Division des lettres et sciences humaines

***COHEN, Yolande – Département d'histoire, Université du Québec à Montréal**

Outre son enseignement sur l'histoire de la France contemporaine au département d'histoire de l'Université du Québec à Montréal, Yolande Cohen a contribué à développer l'histoire des femmes au Québec et au Canada comme sujet d'enseignement et de recherche. Chercheuse de renommée internationale, ses travaux sur l'histoire des identités sociales en Occident ont ouvert un nouveau champ en histoire politique. Son histoire des jeunes en France est aujourd'hui une référence incontournable pour tous ceux qui veulent comprendre la genèse des conflits entre les générations au XX^e siècle. Repérant la marginalisation précoce des jeunes dans la vie politique, elle entreprend de mettre en lumière les multiples résistances et revendications avancées par leurs regroupements. Elle en déduit une perspective dynamique d'analyse qu'elle appliquera à l'étude des femmes, exclues également de la vie politique. Ses travaux sur l'histoire des femmes au Québec lui ont permis de mettre à jour les processus par lesquels les femmes ont participé à la modernisation et à la laïcisation du Québec bien avant la révolution tranquille (professionnalisation, socialisation des savoirs et établissement d'un nouveau système de compétences et d'expertise). Ses deux principales monographies consacrées à l'histoire des Cercles de fermières et aux infirmières concluent à l'influence déterminante de leurs associations volontaires et professionnelles

dans la transformation de leur statut. Elle travaille actuellement à une vaste enquête comparative sur le rôle des associations philanthropiques dans la démocratisation des sociétés (Canada-France), sous le titre de Femmes et démocratie (dont plusieurs articles sont déjà parus dans des revues scientifiques).

CORMIER, Monique C. – Département de linguistique et de traduction, Université de Montréal

Monique Cormier est une spécialiste internationale de la lexicographie et de la terminologie dont les travaux, écrits en français ou en anglais, ont été diffusés dans les meilleures revues scientifiques d'Europe et d'Amérique du Nord. En terminologie, elle s'est particulièrement distinguée par sa recherche sur le métalangage de la traduction. Elle a dirigé en collaboration une *Terminologie de la traduction*, réalisée en quatre langues et traduite dans dix autres, qui fait autorité. En lexicographie, son nom est attaché à la recherche sur la filiation des dictionnaires, notamment en rapport avec le *Dictionnaire de l'Académie française*.

***LAMOUREUX, Johanne – Département d'histoire de l'art et d'études cinématographiques, Université de Montréal**

Chef de file dans le domaine de l'histoire de l'art ainsi que de la gestion et de la mise en valeur des œuvres, Johanne Lamoureux se distingue par sa production de haut niveau et sa vaste portée intellectuelle. La recherche novatrice, les publications et les expositions de cette éminente et dynamique professeure d'université lui ont valu une réputation enviable à l'échelle du Canada et sur la scène internationale. M^{me} Lamoureux est reconnue comme une autorité dans ses divers domaines de spécialisation – peinture française de la fin du xviii^e siècle et du début du xix^e, art moderne et contemporain et histoire de l'interdisciplinarité. Son appui crucial et dévoué aux arts visuels au Canada s'est avéré important pour l'avancement de ce champ d'activité.

Division of the Arts / Division des arts

ANHALT, István - Professor Emeritus, Queen's University

István Anhalt is one of Canada's best known classical composers. Complex both in detail and in underlying motive, his music is born of intellectual clarity and absolute conviction, speaking strongly with contemporary eloquence. Each of his works reveals a discriminating creative personality whose artistic ideals are of the highest order, and who takes infinite pains to achieve them. As a teacher and an administrator, he guided the education of several distinguished Canadian musicians and musical scholars. Named an Officer of the Order of Canada in 2003, he was honoured with the Juno Award for Best Classical Composition of 2004.

BELL, Allan G. – Department of Music, University of Calgary

Allan Bell's contributions to Canadian Music are consistent, varied and high quality. As composer, his works have been performed nationally and internationally, including the United States, the United Kingdom, West Germany, Israel, and Japan. He has four recordings including CBC Records' *Spirit Trail: The Music of Allan Gordon Bell*. He is a founder of the University of Calgary doctoral program in Music Theory and Composition and his former students are setting their names securely in the annals of Canadian serious music. As thinker, he has a probing and brilliant mind and has brought his superior philosophical bent to bear upon his musical endeavours.

***BLOORE, Ronald – Visual Arts and Painting**

Ron Bloore is one of Canada's major artists and a central figure in the development of non-figurative work in this country. He continues to exhibit nationally and internationally and has been awarded the Order of Canada and two honorary doctorates. He is also a historical and enduring creative link between the East and the Prairies, through his ground-breaking exhibition *Five Painters from Regina*, which he

organized in Regina and exhibited at the National Gallery. This exhibition forever changed the rest of the country's perception of Prairie art. In everything Ron Bloore acted as a catalyst, and with an uncompromising set of values promoted his ideas on the nature of regionalism in art making, values that endure to this day.

***EHNES, James – Violinist, Arts/Music**

Widely considered one of the finest violinists of his generation, James Ehnes has established an international reputation of rare distinction for his performances of uncommon expressivity and musicianship with the world's most renowned conductors and orchestras. Possessing a remarkable, award-winning discography of 20 CDs at the young age of 30, he also gives generously of his time to aspiring young musicians in the cities in which he travels. James Ehnes is one of Canada's brightest cultural exports as he consistently reminds international critics and audiences of Canada's rich musical depth.

ELDER, R. Bruce – School of Image Arts, Ryerson University

In more than three decades of artistic excellence, critical insight and inspired teaching, R. Bruce Elder has profoundly influenced the making and understanding of Canadian cinema and Canadian culture as a whole. A filmmaker of international reputation, Elder has informed the sensibility of the *avant garde* through screenings at the world's most prestigious cinemathèques and art museums. His prolific writings are known to anyone with an interest in the nature and possibilities of cinema. A dedicated teacher and academic administrator, Professor Elder's many students have peopled the future of filmmaking and film thought in Canada and abroad.

***GEUER, Juan – Visual Artist**

Juan Geuer is an originator of interdisciplinary art practice in Canada, and a continuing pioneer in interactive art installation. He is nationally and internationally acclaimed for bridging the dichotomy between art and science. He has produced a body of highly complex, as well elegantly simple, technologically and philosophically based works and large scale installations, as well as publishing articles on science and the arts. He continues to serve as mentor to students and young artists in interdisciplinary practices. His works have been exhibited and collected in major institutions in Canada and throughout the world, and he has received major grants and awards throughout his career.

***POLLOCK, Sharon – Performing Arts/Theatre**

One of Canada's best-known theatre artists, Sharon Pollock's career has spanned all aspects from dramaturgy, directing, acting, theatre administration, to teaching, criticism, adjudication and mentoring. Persistently “engaged in an internal, and eternal questioning of what is, what isn't and why”, her ambition is always to stimulate, both emotionally and intellectually. She has always been generous to fellow artists, and chief among her numerous awards are two Governor General's Awards for Drama, four honorary doctorates, the Canada/Australia Literary Award, the Japan Foundation Award, the ACTRA Award for radio drama and a Golden Sheaf Award for her writing for television.

***RIVARD LE MOYNE, Suzanne – Visual Arts**

Our present art world and its institutions owe much of their vitality and strength to the vision and innovations of Suzanne Rivard Le Moyne. From the creation of the Art Bank to new programs for emerging art forms to innovative university programs, Suzanne Rivard Le Moyne has touched all of our visual culture. In recognition of her outstanding contribution to the arts, she was awarded the Governor General's Award as well as the Royal Canadian Academy Medal. Suzanne Rivard Le Moyne's most audacious and inventive undertaking was the founding of the Canada Council Art Bank. The Art Bank forever changed the relationship of art and artist to the public and government. Suzanne Rivard Le

Moyne's visionary spirit and enduring contributions to the visual arts continue to touch us all, as individuals, in our arts programs, and in our institutions.

**ACADEMY OF SOCIAL SCIENCES
ACADÉMIE DES SCIENCES SOCIALES**

Division of Humanities

ADAMOWICZ, Wiktor L. – Department of Rural Economy, University of Alberta

Wiktor Adamowicz is an international expert in resource and environmental economics. His research spans many aspects of consumer behaviour, particularly with respect to environmental goods and services. He focuses on integrating the environment into economic analysis to enhance policy formation and resource management. In the context of forestry his research contributes to issues of sustainable forest management, biodiversity conservation and forest policy. In the context of human health his research includes economic valuation of health risk reductions from improved environmental quality. In a broader context, his research is focused on improving the modeling of consumer behaviour given context and complexity in choice. He is a pioneer in the development of approaches to evaluating consumer choice with a combination of revealed preference and stated preference data; developments that have become the basis for economic valuation of environmental goods and services throughout the world.

BORROWS, John – Department of Law, University of Victoria

Professor Borrows is widely regarded as the leading Aboriginal legal academic in Canada. He is a recipient of a National Aboriginal Achievement Award for his work in law and justice. He holds five degrees and the Law Foundation Chair in Aboriginal Justice at UVIC. He is a prolific scholar. His *Recovering Canada: The Resurgence of Indigenous Law*, was awarded the Donald Smiley Prize by the Canadian Political Science Association 2002. His *Aboriginal Legal Issues: Cases, Materials and Commentary* is used in almost every law school in Canada and his articles are frequently cited by the Supreme and other Courts. He works tirelessly with the Department of Justice, inquiries, treaty and mediation negotiators, and Aboriginal organizations to promote dialogue among Aboriginal and non-Aboriginal peoples in Canada and internationally.

***CAULFIELD, Timothy – Department of Law, University of Alberta**

Professor Caulfield is an international leader in the field of health law. His influential research, particularly his analysis of the legal and social issues associated with emerging technologies, has been cited by numerous provincial, national and international policy makers, including the Supreme Court of Canada, the OECD and the Parliamentary Standing Committee on Health. Professor Caulfield is an international leader in the field of health law. His scholarly activity has resulted in over 120 academic publications and book chapters. His influential research, particularly his analysis of the legal and social issues associated with emerging technologies, has been cited by numerous provincial, national and international policy makers, including the Supreme Court of Canada, the OECD and the Parliamentary Standing Committee on Health. He has been closely involved in the production of many influential policy documents, including several by the Canadian Biotechnology Advisory Committee, the Canadian Institute of Health Research and the Royal Society of Canada.

CRAWFORD, Gary – Department of Anthropology, University of Toronto at Mississauga

Gary Crawford is a leader in the investigation of human-plant interaction in prehistory. Among his discoveries he demonstrated that the Ainu of Northern Japan were farmers, not hunter-gatherers as was

presumed for well over a century, thereby also impacting views on Japanese origins. Crawford also led a team that discovered how and when agriculture developed in pre-contact Ontario. Most recently, he is the first to document the nature and timing of the development of North Chinese agriculture that early in its history relied on millets, legumes, rice and wheat. He has coauthored two general anthropology texts and developed and hosted an archaeology series for TVOntario.

***HAYDEN, Brian D. – Department of Archaeology, Simon Fraser University**

Brian Hayden has developed and tested hypotheses to explain how complex human social organization emerged in egalitarian societies. He argues that ambitious individuals create multiple strategies to acquire prestige and social power, notably through manipulation of surpluses and possession of arcane knowledge, and that these ambitions transform societies. His fieldwork throughout the world provides an empirical basis for hypotheses that explore the origins of agriculture, the function of religion, and the emergence of social inequality. Controversial and influential, his work has been widely published.

LEITHWOOD, Kenneth – Ontario Institute for Studies in Education, University of Toronto

Ken Leithwood is regarded as a global leader in the field of education. He has made an enormous, sustained contribution over almost three decades to the study and understanding of leadership, school organization, and educational reform. The worldwide movement that is now emerging, to base education policy in education research, owes a significant part of its momentum to Professor Leithwood's work: to his advocacy of research as a central basis for making decisions about the kind of schools that best serve children and communities and the unparalleled contribution that he has himself made to building this research base in Canada and beyond.

***MAURER, Daphne - Department of Psychology, Neuroscience and Behaviour, McMaster University**

Daphne Maurer is an internationally acclaimed researcher who has examined long-standing scientific and philosophical issues regarding the perceptual world of infants. Professor Maurer's research overturned William James' view that infants experienced a 'blooming, buzzing confusion', and instead perceived an organized world of forms and colours. Her research also showed that perception changes substantially during development. Daphne's work during the past three decades has described these perceptual changes and linked them to anatomical and physiological changes in the brains of infants and children with and without visual abnormalities. She is one of the most highly regarded developmental scientists in the world today.

***NORMAN, Geoffrey R. – Educational Research and Development, McMaster University**

Geoff Norman is a highly accomplished academic who has achieved world-class stature in medical education. His research centers on clinical reasoning - the thinking processes doctors use in arriving at a diagnosis, which is uniquely placed at the interface between theory and practice in the field of medical education. He has won international recognition for his accomplishments in improving the teaching and assessment of medical students. He is the author or co-author of over 200 journal articles, as well as numerous books and book chapters. He has won a number of prestigious national and international awards.

SINGER, Peter A. – McLaughlin-Rotman Centre for Global Health, University Health Network and University of Toronto

Peter Singer, an internationally recognized bioethicist and expert in science policy and global health, has been recognized by the nation's highest health research awards including the CIHR Distinguished Investigator and Michael Smith finalist awards. Singer has published over 225 articles, obtained over \$50 million in research grants, trained over 50 graduate students and fellows, and made important, original contributions in transplant ethics, end-of-life care, resource allocation, bioethics teaching, public health ethics and global health. He has advised the Gates Foundation and the United Nations, and founded the University of Toronto Joint Centre for Bioethics, one of the world's leading bioethics centres.

WELLMAN, Barry – Department of Sociology, University of Toronto

Barry Wellman ranks among Canada's most prominent sociologists and among the world's foundational leaders in social network analysis. His substantive, theoretical and methodological innovations revolutionized the study of community, work, the Internet and family life. A pioneer in the field, he formulated an internationally respected paradigm for understanding human interaction as social networks. His research has produced an extensive and influential body of literature and provides a framework for future studies on community technology and social change. He has also played key roles in several professional associations, advancing the field of social network analysis and sociology as a whole.

Division des sciences sociales

ANDREW, Caroline – École d'études politiques, Université d'Ottawa

Caroline Andrew a largement contribué à l'étude de la politique urbaine au Canada, dont le rôle des politiques municipales et la capacité d'adaptation du système politique à l'urbanisation de la société. Elle s'est particulièrement intéressée au défi de l'inclusion au tissu urbain par le biais d'abord des politiques visant la sécurité urbaine des femmes puis l'intégration des communautés ethnoculturelles. Caroline Andrew a aussi travaillé à construire un champ d'études par la formation, la diffusion de la connaissance et les associations professionnelles. Elle a ainsi contribué à l'essor des études urbaines et féministes au Canada ainsi qu'à leur rayonnement international.

BROCHU, Serge – École de criminologie, Université de Montréal

Serge Brochu est un chercheur de renommée internationale, et un grand professeur, dont les travaux permettent de mieux saisir les liens entre drogue et délinquance. Parmi son abondante publication, son ouvrage « Drogue et criminalité » est une référence incontournable sur la relation drogue-crime. Fondateur d'un groupe d'experts internationaux, et directeur de plusieurs équipes de recherche, il pilote une des trois parties d'une importante étude canadienne de prescription d'héroïne injectée, destinée à une clientèle toxicomane. Il est membre de plusieurs sociétés de criminologie, et, comme Secrétaire général de l'Association internationale des criminologues de langue française, organise périodiquement des colloques internationaux.

DE KONINCK, Joseph – École de psychologie, Université d'Ottawa

Joseph De Koninck est un chercheur de renommée internationale qui étudie ce tiers de notre vie que nous consacrons à dormir et rêver. Les sources du rêve et son impact sur la vie éveillée, le rôle du sommeil

dans l'apprentissage et la mémoire, les facteurs chronobiologiques sous-jacents à la sieste et le traitement de l'insomnie sont parmi les sujets où il a innové, nous permettant de mieux comprendre l'importance du sommeil et des rêves dans l'adaptation psychologique. Comme administrateur universitaire il a été un ardent promoteur, tant au niveau national qu'international, de l'interdisciplinarité et de l'encadrement des études supérieures et postdoctorales.

***DES ROSIERS, François – Département de management, Université Laval**

Les travaux de François Des Rosiers dans le domaine de la gestion urbaine et immobilière lui valent une renommée internationale. Ses analyses empiriques de la formation des prix résidentiels et des rentes commerciales ont été publiées dans les meilleures revues du domaine en Amérique et en Europe. Elles proposent des évaluations quantitatives fiables de toute une gamme d'externalités urbaines considérées jusqu'ici comme très difficiles à mesurer. Elles contribuent également à renouveler la théorie et la pratique de l'évaluation foncière et immobilière en perfectionnant la modélisation statistique du fonctionnement des marchés urbains. Elles débouchent enfin sur une interprétation de la ville comme étant un lieu d'interdépendances fortes où les effets de voisinage omniprésents produisent tantôt des économies externes, tantôt des déséconomies externes, qui appellent des formes de gestion collective sophistiquées que le professeur Des Rosiers s'emploie à diffuser par sa forte implication dans la vie de la Cité.

PERRAKIS, Stylianos – Département de finance, Université Concordia

Stylianos Perrakis est l'auteur d'une soixantaine de contributions de tout premier ordre dans le domaine des sciences économique et financière. Les revues savantes les plus renommées, tant canadiennes qu'étrangères, ont publié ses travaux. Il est cité dans des articles de recherche, des anthologies, des manuels de tous niveaux et dans un dictionnaire d'économie. Les phénomènes qu'il a analysés ont généralement lieu en univers incertain : réaction d'un service public à la réglementation, mise en place de barrières à l'entrée dans une industrie, évaluation du cours d'un produit dérivé. Dans tous ces domaines, il a renouvelé des pans complets de l'analyse traditionnelle.

***SIMARD, Jean-Jacques – Département de sociologie, Université Laval**

Jean-Jacques Simard, sociologue, est un incurable généraliste dans un univers de spécialistes. Il affirme « travailler comme un plombier, sur appel ». Il a publié des ouvrages majeurs qui font désormais autorité : *La longue marche des technocrates* (1979), sur la Révolution tranquille et le développement régional au Québec; *Tendances nordiques, Les changements sociaux chez les Cris et Inuit du Québec, 1970-1990* (1996); *La Réduction, L'Autochtone inventé et les Amérindiens d'aujourd'hui*, qui s'est mérité le prestigieux Prix du Gouverneur général du Canada en 2004; et *L'Écllosion, De l'Ethnie-cité canadienne-française à la société québécoise* (Québec, 2005).

**ACADEMY OF SCIENCE
ACADÉMIE DES SCIENCES**

**Division of Applied Sciences and Engineering / Division des sciences appliquées et
genie**

HAYNES, Charles A. – Department of Chemical and Biological Engineering, University of British Columbia

Dr. Charles Haynes is a scholar of international stature in the field of bioseparations and downstream bioprocessing. His fundamental and applied research crosses disciplinary boundaries, combining engineering unit operations with thermodynamics, surface science, biological sciences and modelling to devise original methods of recovering and separating products of biological significance from solutions and mixtures. He has established himself as one of the pre-eminent biochemical engineers working experimentally and theoretically on the advancement of chromatography and related separation techniques applied to the purification of proteins, oligonucleotides and other biological products.

***MACGREGOR, John F. – Department of Chemical Engineering, McMaster University**

John MacGregor's contributions span the areas of data analytic methods, advanced process control and polymer reaction engineering. His pioneering research on latent variable modeling approaches to interrogate large industrial databases led to an explosion in the use of these methods for the analysis, monitoring and control of industrial processes. His research on batch processes has been particularly influential. Recent research on digital imaging for process control and on the rapid development of new products is also noteworthy. His earlier research on polymer reaction engineering, involving fundamental modeling and advanced polymer property control, was instrumental in helping to define that field.

***MYLOPOULOS, John – Department of Computer Science, University of Toronto**

John Mylopoulos is the first and still most influential researcher to have made lasting and deep contributions to the three separate computer science fields of artificial intelligence, data management, and software engineering. He pioneered the use of conceptual modeling within all three fields. His seminal work on requirements modeling has had a lasting impact on academic research and industrial practice, and provides a foundation for the popular software engineering practice of model-driven software development. He is an academic leader, and has been elected to top research positions in all three fields.

NG, Flora T. T. – Department of Chemical Engineering, University of Waterloo

Professor Ng has made exceptional seminal contributions in catalysis, green chemistry and engineering for the chemical, petrochemical and oil industry. She pioneered a new method to determine the Co-C bond dissociation energy which helps to elucidate the role of Co in vitamin B12 catalysis. She is a world leader in catalytic distillation, a novel green reactor technology which is highly energy efficient. She invented catalysts and new green processes, one of which, the Avada process for the production of ethyl acetate, won the Best Green Chemistry and Engineering Process award from the UK Institute of Chemical Engineers in 2002.

***SELVADURAI, A. Patrick S. – Department of Civil Engineering and Applied Mechanics, McGill University**

Patrick Selvadurai, a world authority in continuum geomechanics, theoretical, computational and experimental geomechanics, has profoundly influenced engineering modelling activities in nuclear waste management, soil-structure interaction, northern and environmental geomechanics. He has published extensively in journals and authored *Elastic Analysis of Soil-Foundation Interaction, Elasticity and Geomechanics* and *Plasticity and Geomechanics* (with R.O. Davis), *Partial Differential Equations in Mechanics Vols. 1 & 2*. Dr. Selvadurai is a Fellow of the Engineering Institute of Canada, American Academy of Mechanics, Canadian Society for Civil Engineering, Canadian Academy of Engineering and Institute for Mathematics and its Applications, and the recipient of the Max Planck, Killam and Humboldt Awards.

WONG, K. Max – Department of Electrical and Computer Engineering, McMaster University

K. Max Wong is a leader in signal processing. His research ranges from fundamental theory and algorithms to applications and designs of signal processors in communication, radar, and sonar systems. His work brought high resolution array processing methods into practical use in non-ideal environments. He pioneered applications of convex optimization to signal processing and solved design problems in line and wireless communications previously considered impossible. Author of over 200 technical papers, his inventions include the transmultiplexer and the wavelet echo canceller used in daily telephone systems while his algorithms in target detection and estimation are implemented in our defence systems.

YOUNG, R. Paul – Department of Civil Engineering, University of Toronto

Professor R. Paul Young is an outstanding scientist who for over 25 years has been a pioneer in rock mechanics and geophysics, applying his research to mining, deep geological disposal of radioactive waste investigations and petroleum engineering. His most significant contributions are in the areas of Induced Seismicity, Rock Fracture Micromechanics, and Rock Fracture Dynamics and Acoustic Emission. He demonstrates a remarkable ability for understanding the areas of synchrony at the interfaces between Geophysics and Engineering and he is exceptional in being able to move science from the laboratory to the engineered environment.

Division of Earth, Ocean and Atmospheric Sciences / Division des sciences de la Terre, de l'océan et de l'atmosphère

***GOODARZI, F. Fariborz – Geological Survey of Canada, Natural Resources Canada**

Dr. Goodarzi is Canada's leading expert and is world renowned for his contributions to coal petrology, geochemistry and environmental issues as related to natural and anthropogenic impact of large stationary point contaminant sources (coal-fired power plants and smelters). His research involves the study of the depositional setting and the sedimentary processes of coal and hydrocarbons that have determined their compositions (coal seam thickness, carbon richness) , inorganic geochemistry of coal as related to the elements, notably arsenic, cadmium and mercury and sulphur, which are serious environmental pollutants, impact of coal-burning and metal smelting on the environment. Dr. Goodarzi has designed specialized methodologies for differentiating anthropogenic from natural contaminants utilizing natural organic deposits which are now accepted as standard practice in the environmental sector.

HEAMAN, Larry M. – Department of Earth and Atmospheric Sciences, University of Alberta

Larry Heaman's studies on the timing of magmas produced from Earth's mantle have revolutionized our understanding of large-scale connections between mantle dynamics and crustal tectonics. His pioneering studies on the use of new minerals for precise isotopic age dating of mantle magmas has revealed new details about past configuration of Earth's continental plates. His research on diamond-bearing rocks (kimberlites) has shown a relationship to mantle "hot-spot" tracks, and an origin for some diamonds in deeply subducted ocean crust. Dr. Larry Heaman is a world leader in the field of geochronology - the science of precise and accurate determination of geologic time.

***SHEPHERD, Theodore G. – Department of Physics, University of Toronto**

Theodore Shepherd is the leading Canadian atmospheric dynamicist of his generation. His contributions, based upon sophisticated analyses of the interactions between atmospheric waves and the stratospheric circulation, have led to seminal insights. Through his creative scientific leadership of the Canadian Middle Atmospheric Model (CMAM) collaboration, and contributions to the international stratosphere-related SPARC programme and the most recent WMO/UN Ozone Assessments, he has brought great credit to the Canadian community. His recent service as Chief Editor of the Journal of the Atmospheric Sciences, the leading journal in the field internationally, is further confirmation of his high stature.

ZAWADZKI, Isztar I. – Department of Atmospheric and Oceanic Sciences, McGill University

Isztar Zawadzki has made exceptional and long-lasting contributions to our understanding of precipitation processes using radar measurements. He has related the statistical properties of raindrops to their physical origin and has parameterized their attributes. He then directed the incorporation of his raindrop parameterization scheme into an advanced mesoscale numerical weather prediction model for the benefit of the meteorological community. He has designed novel experiments, and followed them through with superb quantitative interpretations. For his many contributions to radar meteorology, Prof. Zawadzki was awarded in 2006 the first-ever Remote Sensing Prize of the American Meteorology Society.

Foreign Fellow / Membre étranger

BERGER, André – Institut d'astronomie et de géophysique Georges Lemaître, Université catholique de Louvain, Belgique

André Berger est une sommité de la paléoclimatologie dont l'oeuvre a fortement marqué l'évolution des recherches au plan international. Ses travaux sur les paramètres orbitaux de la Terre au cours des millions d'années du passé servent maintenant de fondation à la reconstruction du paléoclimat et de sa simulation à l'aide de modèles climatiques. Il fut également un pionnier dans l'élaboration de modèles climatiques dits de complexité intermédiaire qui se sont avérés de puissants outils de recherche. En 1996 sa Majesté Albert II, Roi de Belgique, lui conféra le titre de Chevalier. En 2004 il fut nommé Chevalier de la Légion d'Honneur de la République française.

Division of Life Sciences / Division des sciences de la vie

DONNER, Allan – Department of Epidemiology and Biostatistics, Schulich School of Medicine and Dentistry, University of Western Ontario

Dr. Allan Donner has attained international recognition as a driving force in the development of biostatistical methodology in two distinct areas: (i) the design and analysis of cluster randomization trials and (ii) statistical methods for the analysis of interobserver agreement studies. These methods have led to significant improvements in the conduct of health research in Canada and beyond. In addition to his independent research, Dr. Donner has collaborated extensively both in Canada and with internationally respected health research organizations, including the World Health Organization, the International Vaccine Institute and the Centers for Disease Control.

***HALLORAN, Philip F. – Department of Medicine, University of Alberta**

Dr. Halloran is an international leader and pioneer in organ transplantation. His seminal contributions include: delineating the role of interferon- γ in injury and rejection and its effect on MHC I and II; describing mechanisms of T cell mediated and antibody mediated rejection; describing the effects of somatic cell senescence on transplant performance; and developing diagnostic systems for transplantation. Recently, he has annotated the transcriptome of rejecting kidney to significantly advance a mechanistic understanding of allograft rejection. Dr. Halloran has significantly advanced clinical transplant medicine through the study and optimization of immunosuppressive therapy resulting in improved outcomes for transplant patients worldwide. Dr. Halloran is founding Editor of the American Journal of Transplantation, the leading journal in transplantation, and was recently named an Officer of the Order of Canada.

HAYNES, R. Brian – Department of Clinical Epidemiology and Biostatistics, McMaster University

Dr. R. Brian Haynes is the world leader in medical information research and knowledge translation as a means to improve clinical and health care through improving the retrieval, distillation, synthesis, dissemination and application of validated health care knowledge. He was the first person ever to systematically research a worldwide array of clinical medical journal articles on diagnosis, prognosis, therapeutics, economics, and quality-of-care, establishing that less than 1% of them were both scientifically valid and clinically applicable. He then led the worldwide scientific effort to correct this deficiency by creating a health knowledge refinery and leading the scientific development of both evidence-based journals and internet information services.

KISILEVSKY, Robert – Department of Pathology, Queen's University

Dr. Kisilevsky's basic studies on abnormal protein folding (amyloid) have led to therapy for some of the important diseases of our time. He has designed agents and drugs to arrest and reverse this process, which are approved for the treatment of amyloidosis, and are in a FDA expedited Phase III clinical trials for the treatment of Alzheimer's disease. Similar blocking agents are used to treat malaria. Finally, the physiological function of one of these amyloid proteins in cholesterol transport have led to mechanisms to treat atherosclerosis which leads to stroke and heart attacks. Two highly successful biotechnology companies have been founded on his research.

LOPASCHUK, Gary D. – Department of Pediatrics and Pharmacology, University of Alberta

Gary Lopaschuk is a scientific leader in the area of how energy metabolism is controlled in the heart under both normal and pathological conditions. His research has clarified the molecular mechanisms responsible for the rapid maturation of fatty acid oxidation in the heart following birth and the high rates of fatty acid oxidation in the myocardium of the diabetic, as well as how excess use of fatty acids by the heart contributes to ischemic heart disease. Dr. Lopaschuk demonstrated that alterations in the control of fatty acid oxidation contribute to a number of cardiac pathologies, including ischemic heart disease, hypertrophy and heart failure, and diabetic cardiomyopathies. He has also shown that modifying fatty acid oxidation is a novel approach to treating various forms of heart disease. He is an inventor on a number of patents and has a prolific publication record.

MACVICAR, Brian A. – Department of Psychiatry, University of British Columbia

Dr. Brian MacVicar is a superb electrophysiologist and a pioneer in the development and application of cellular imaging to models of normal and pathological brain function. His fundamental contributions have advanced knowledge about cell excitability, synaptic transmission, glial cell function, and neuronal trauma (ischemia, hypoxia, and epilepsy). Most importantly, his research has direct application to topics of immense clinical relevance, including stroke, epilepsy, and Alzheimer's disease. He is recognized internationally as one of Canada's most creative, original, and outstanding scientists in the field of neuroscience research.

***MARRA, Marco A. – Department of Medical Genetics, University of British Columbia**

Dr. Marra has made significant contributions to genome science and health research. One major contribution was the construction of a human genome map. This key resource allowed an International Consortium to efficiently complete and make publicly available the human genome sequence. Dr. Marra's mapping approach has been used to analyze more than 30 genomes from organisms of major importance to research. Another major contribution was in sequencing the SARS coronavirus genome. The speed of the sequencing and the availability of the sequence made international headlines, and emphasized the central role that genome science could play in combating emerging infectious diseases.

MCELHANEY, Ronald M. – Department of Biochemistry, University of Alberta

Ronald McElhaney is an international leader in research on the roles of lipids in biological membranes. He demonstrated that physical properties of lipids determine the permeability of membranes and modulate the activity of proteins. His work on the phase behaviour of lipids has direct relevance to the role of lipid rafts in cell signalling. His research has provided key insights into the mechanisms by which antimicrobial peptides disrupt bacterial membranes providing the basis for design of effective anti-microbial agents. He is a Fellow of the Biophysical Society (USA) and received the prestigious Avanti Award in Lipids from the Biophysical Society.

MEANEY, Michael J. – Douglas Hospital Research Centre, McGill University

Michael Meaney has developed an internationally unique research program that includes studies at the level of cell and molecular mechanism to human child development. The research supported by Canadian and international funding agencies is considered as a model for multidisciplinary, translational research. Meaney's ability to create a remarkably productive basic science laboratory and, at the same time, to head an ambitious project on human child development, places him in an internationally unique position as a scientist.

MICHALAK, Marek – Department of Biochemistry, University of Alberta

Dr. Marek Michalak is an internationally recognized world authority in the field of protein folding, calcium homeostasis and their role in pathology of human diseases. His pioneering work on membrane associate chaperones calreticulin and calnexin (proteins that assist in protein folding) has had a major impact on our understanding and treatment of many protein folding disorders including congenital heart diseases, Alzheimer's disease, Parkinson's disease, multiple sclerosis and prion diseases. He leads an internationally renowned research group that investigates membrane proteins and their role in human diseases. He now chairs the Department of Biochemistry where he continues to shape and build its academic program into an internationally recognized research and teaching centre in Canada.

***PALMER, A. Richard – Department of Biological Sciences, University of Alberta**

Dr. A. Richard Palmer's research lies at the crossroads of three central lines of biological inquiry: development, functional morphology, and evolution. He has made world-leading contributions in these areas through his extensive research on asymmetry, developmental plasticity, and skeletal growth and function of marine animals. Palmer's landmark contributions have yielded major insights into both biology (how development evolves) and science culture (how scientists publish their research). His research published in internationally elite journals, including *Science*, *Nature*, and *Proceedings of the National Academy of Science USA*, is widely read and cited and has pioneered important new lines of investigation and thinking.

***PARK, Morag – Royal Victoria Hospital, McGill University**

Morag Park is an international leader in the fields of receptor tyrosine kinase signalling in epithelial invasion and cancer. She isolated the Met receptor tyrosine kinase and pioneered its use to understand the mechanisms of its activation in human cancer. She discovered constitutive dimerization for oncogene activation of receptor tyrosine kinases and demonstrated the importance of ubiquitylation in the downregulation of Met and as a paradigm for oncogenic activation of tyrosine kinases in human cancer. She uncovered signals that involve the scaffold protein Gab1 that regulate invasion in epithelial models applicable to metastasis. Her work now focuses on the tumour microenvironment relevant to human breast cancer.

PEARSON, Keir G. – Department of Physiology, University of Alberta

Dr. Keir Pearson is a leading authority on the neurobiology of locomotion. His research has identified key principles related to the neural control of walking in invertebrates and vertebrates. These contributions have been germane for developing strategies for enhancing functional recovery after spinal cord injury and for the design of walking robots. Dr. Pearson has written many influential manuscripts and book chapters, and is recognized internationally for his ability to communicate science to a wide audience. He holds a Canada Research Chair in movement physiology, and is Director of the Centre for Neuroscience at the University of Alberta.

***SADDLER, John N. – Faculty of Forestry, University of British Columbia**

John (Jack) N. Saddler, Chair of Forest Products Biotechnology at the University of British Columbia, is trained as a microbiologist/biochemist and has been working in the general area of applied microbiology/enzymology. He has published more than 300 papers in the peer reviewed literature, has published in top ranked applied and fundamental "biotechnology" journals and his work is among the most cited in the field with many of his papers receiving in excess of 200 citations. He has worked in the primary areas of applications of enzymes to fibre modification and in the bioconversion of wood

residues to fuels and chemicals. He has received the International Union of Forest Research Organizations (IUFRO) award for Research Excellence (awarded every 5 years) and the Charles D. Scott Award (1998) which "recognizes distinguished individuals in the application of Biotechnology for Fuels and Chemicals". He was the first non-American to receive this award since its inception. His research occurs at the enzyme-substrate interface, with his work elucidating the fundamental structure and mechanisms involved in enzyme modification of lignocellulosics and forming the basis of the pretreatment/enzymatic hydrolysis steps of several of the commercial "biomass-to-ethanol" facilities that are currently under construction. He is an invited reviewer of several national renewable energy programs such as Sweden, US, EU and Australia and has given many plenary talks at international conferences.

***STIRLING, Ian G. – Canadian Wildlife Service**

Dr. Ian Stirling's world-leading research on polar bears has provided new understandings of their ecology and evolution. His studies of the behaviour and ecology of several seal species in the Arctic and Antarctic stand cumulatively as a world class contribution on marine mammals. His long-term research on polar bear population ecology and predator-prey relationships provided the first documentation of long-term fluctuations in the arctic marine ecosystem and confirmation of the negative effects of climate warming on polar bears. Dr. Stirling is one of Canada's and the world's leading scientists and most recognized spokespersons on climate warming in the Arctic.

TAYLOR, Diane E. – Department of Medical Microbiology and Immunology, University of Alberta

Diane Taylor is an internationally recognized microbiologist whose major contributions include the application of genetics and molecular biology to understand bacterial antibiotic resistance. Her work led in the discovery of genetics behind the virulence and disease mechanisms of two bacteria: *Helicobacter pylori*, responsible for gastric ulcers and cancer, and *Campylobacter*, found in food and drinking water, and an important cause of gastroenteritis. She has developed methods for their genetic analysis used worldwide and has identified important resistance mechanisms. Her research on plasmids (small circles of DNA) ranges from understanding how they have evolved over time to how they transfer between bacterial cells, creating dangerous antibiotic resistance.

WHITFIELD, Chris – Department of Molecular and Cellular Biology, University of Guelph

Dr. Chris Whitfield is a world authority on the assembly of glycoconjugates (complex carbohydrates) on the surfaces of pathogenic bacteria. His work has provided broad insight into how these large molecules move through bacterial cell walls, and their potential as targets for antimicrobial therapy. He holds a Canada Research Chair in Molecular Microbiology at the University of Guelph and is the founding Chair of the Department of Molecular and Cellular Biology. His awards include the CSM/Roche Prize, a CIHR Senior Investigator Award and Fellowship in the American Academy of Microbiology.

Division of Mathematical and Physical Sciences / Division des mathématiques et sciences physiques

BRYDGES, David C. – Department of Mathematics, University of British Columbia

David Brydges is an outstanding mathematical physicist with a sustained record spanning thirty years of inventive and highly creative achievements in the fields of constructive quantum field theory and

mathematical statistical mechanics. He is particularly known for his introduction of new techniques, including random walk representations in spin systems, the lace expansion, and mathematically rigorous non-perturbative implementations of the renormalization group. His work on quantum field theories, self-avoiding walks, branched polymers and Coulomb systems established many of the fundamental properties of these systems and laid the foundation for much important subsequent work by him and others.

***CHARETTE, André – Département de chimie, Université de Montréal**

For his creative and ingenious invention of stereoselective methods of synthesis utilizing a combination of catalytic and non-catalytic methods of bond formation, leading to architecturally unique organic compounds of industrial and academic interest. For his exemplary work ethic and superb mentoring ability in training many young Canadian coworkers. For the excellence and relevance of his published work putting Canadian science at the forefront on a worldwide basis.

CRAIG, Walter – Department of Mathematics and Statistics, McMaster University

Walter Craig is one of the world leaders in nonlinear partial differential equations (PDEs) and their applications, particularly as they apply to the mathematical study of water waves. He has made deep and lasting contributions to others areas of PDEs which are among the milestones in the field including Kolmogorov-Arnold-Moser theory for Hamiltonian PDEs through his work on the small divisor problem, and progress on the Navier-Stokes and Boltzmann equations. He is the Director of the Applied and Industrial Mathematics Laboratory at McMaster and has provided mentorship to an enormous number of young mathematicians through his academic leadership.

DOUGLAS, Donald J. – Department of Chemistry, University of British Columbia

Donald Douglas is known for his contributions to mass spectrometry. First in industry, then at the University of British Columbia through an Industrial Research Chair, Douglas has used his strong background in physical chemistry to make many innovative contributions to new instrumentation and to fundamental studies of ion chemistry. He is noted for developing the first commercial inductively coupled plasma mass spectrometer system for trace element analysis, for new technologies leading to high performance bench top mass spectrometers, and for his fundamental studies of protein ions. Many of his inventions have been commercialized in Canada.

GUO, Hong – Department of Physics, McGill University

Hong Guo is internationally renowned for his pioneering contributions to theoretical and computational modeling of quantum transport in nanoelectronic systems. His research spans and influences several fields of condensed matter theory, including quantum transport theory and modeling for nanoelectronic devices, mesoscopic physics, strongly correlated electrons in quantum dots, density functional theory and computational physics, polymer theory, materials physics and statistical physics.

***JEFFREY, Lisa – Department of Computer and Mathematical Sciences, University of Toronto at Scarborough**

Lisa Jeffrey made fundamental contributions to symplectic geometry, module spaces and mathematical physics. Her groundbreaking work with Frances Kirwan led to their celebrated proof of the Witten formulas for stable vector bundles, a landmark achievement in the theory of module spaces; their techniques are now standard tools in symplectic geometry and other areas of mathematics and physics. The interdisciplinary nature of Jeffrey's work has an enormous value to both mathematics and theoretical

physics, and especially to quantum field theory and string theory. Jeffrey's research accomplishments have been honoured by the André Aisenstadt Prize, a Sloan Fellowship, a Premier's Research Excellence Award, the McLean Award, the Krieger-Nelson Prize, the Coxeter-James Prize, and a Steacie Fellowship.

***KUMACHEVA, Eugenia – Department of Chemistry, University of Toronto**

Eugenia Kumacheva is known for her contributions in the field of complex fluids, polymer science and materials chemistry. She is known for her discoveries of phase transitions in simple liquids confined to molecularly thin layers and entropically-driven lubrication in polymer brushes. She investigated convection in phase separating polymer liquids. She proposed new strategies for the self-assembly in complex fluids and new concepts of materials for high-density optical data storage and security documents. She proposed new approaches to hybrid polymer-inorganic materials and developed continuous microfluidic reactors for polymer synthesis. Eugenia Kumacheva has 8 patents (plus 5 applications filed), 115 publications and 99 invited lectures. Her former students and postdoctoral fellows have positions in academia and industry. Her work was highlighted in numerous public reports.

MARTIN, Peter G. – Department of Astronomy and Astrophysics, University of Toronto

Peter G. Martin is one of Canada's most distinguished astrophysical leaders and mentors. He is universally recognized as a major world figure in studies of the physics and chemistry of the interstellar medium. He has made fundamental contributions to our understanding of cosmic dust, interstellar light propagation, and the complex Galactic ecosystem in which stars are born and die. He led a massive theoretical effort to compute essential and widely-used hydrogen molecule reaction rates for star and planet formation. He plays a defining role in many major ISM observing campaigns, including the unique Canadian survey of the Galactic plane.

NORTON, Peter R. – Department of Chemistry, University of Western Ontario

Peter Norton is Canada's most distinguished surface/interface scientist. Many of his surface science studies (determination of surface structure, quantitative surface composition, and oscillatory behaviour, using several novel techniques) are classics. Recently, he constructed the second interfacial force microscope (IFM) in the world, he invented a new form of IFM and sold the technology, and he has become a world leader in the quantitative use of scanning probe microscopy in a wide variety of chemical, biological, and tribological surfaces and interfaces. He has published over 260 papers and has won several Canadian and international research awards.

SCHAEFFER, Jonathan – Department of Computing Science, University of Alberta

Jonathan Schaeffer is Canada's leading researcher and world leader in research on artificial intelligence (AI) applied to games. In 1986 his *Phoenix* program tied for 1st place in the World Computer Chess Championship. *Chinook* in 1990 was the first program to earn the right to play for the human World Checkers Championship, earning a place in the Guinness Book of World Records as the first program to win a human world championship in a non-trivial game of skill. Jonathan has been a key leader in the development of high speed and parallel computing in Canada. His next feat will be to solve poker!

TAILLEFER, Louis – Département de physique et RQMP, Université de Sherbrooke

Louis Taillefer is internationally renowned for innovative experimental research on new states of matter. He pioneered the use of heat transport at ultra-low temperatures to determine the symmetry of the superconducting state, probe critical behaviour at quantum phase transitions, and elucidate the nature of

excited states in magnetic insulators. He was the first to directly measure the giant electron masses of *f*-electron materials. He discovered the first instance of multi-component superconductivity and the first violation of the Wiedemann-Franz law - the physical law that determines the universal ratio of charge and heat conductivities of a metal at absolute zero.

Specially Elected Fellow / Membre à titre spécial

HACKETT, Peter – Department of Mathematical and Physical Sciences, Alberta Ingenuity Fund

Peter Hackett made major contributions while at NRC in chemical physics that led to improved synthesis of vitamin D and isotopic enrichment via infrared multiphoton dissociation. He developed methods now widely used to study reactions at metal centers and was among the first to delineate potential revolutionary chemical properties of nanoscale metal clusters. He was pivotal in establishing the National Institute for Nanotechnology, a ground-breaking university-government collaboration. His vision and leadership has positioned Canada at the forefront of emerging fields such as nanotechnology, photonics, genomics and information technologies, and challenged Canadians to work together to develop technologies to raise the standards of living in developing countries.