

Education at the Leading Edge of Change

CASE FOR SUPPORT

*Faculty of Education
2009-2010*



Dean's Address



Dean Hélène Perrault

The Faculty of Education is uniquely positioned to investigate complex issues that have multiple causes and require thinking across many disciplines, such as the high-school dropout rate, learning disabilities and overall well-being across the lifespan. In addition, our Faculty's four academic units provide an unrivalled setting for *transdisciplinary* research, an increasingly important approach to inquiry that seeks to go beyond the boundaries of existing disciplines.

World-class researchers are tackling some of society's most urgent challenges – the development of coping mechanisms for enhancing physical, mental and emotional health for the aging population, the urgent need for more math and science teachers, and the design of physical and cognitive developmental trajectories for typical and atypical behaviour. The impact of our discoveries can be seen and felt in so many areas, from insights into muscle movement at the cellular and molecular level to combating cyber-bullying. At the same time, we are transforming how we prepare tomorrow's teaching professionals through powerful synergies between the Faculty's research, academic programs and outreach initiatives.

The short and long-term aspirations of the Faculty of Education are perfectly aligned with the ambitious goals of Campaign McGill. We aim to bring together the very best minds – professors, graduate students and undergraduates – and create an environment in which they can thrive. Our fundraising priorities also mirror those of Campaign McGill: to advance health, build prosperity, create the next generation of science and technology, and strengthen culture and civil society. To successfully respond to these challenges, the Faculty of Education is focusing its energy on advancing knowledge in three strategic areas:

- Applied Human Development & Well-being
- Educational Leadership in the 21st Century
- Information Management, Cognition & Learning Environments

I invite you to read on and learn more about the Faculty's plans to realize each of these objectives.

Yours sincerely,

Hélène Perrault, PhD
Dean

FACULTY OF EDUCATION

Applied Human Development and Well-Being



The *Applied Human Development and Well-Being* campaign supports our faculty’s unique capacity for groundbreaking research in the areas of emotional, social, psychological, and physical well-being throughout one’s life. By any measure, the most essential asset we have is our health, and more than ever fulfilling our health potential is a responsibility of the individual. Our diverse and transdisciplinary researchers focus on all age groups, from early childhood to the elderly, and examine a variety of educational and psychological approaches to develop healthy lifestyle habits and coping skills for emotional disorders and addiction behaviours. Critical areas in need of support include:

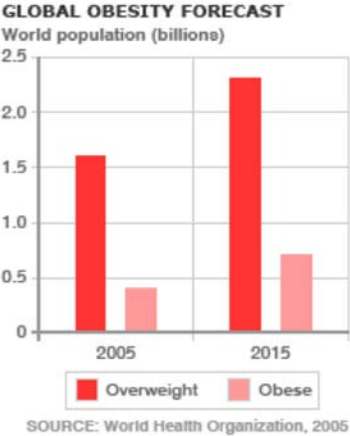
Promoting Self-Regulating Behaviours

Youth Gambling & Addiction: The widespread proliferation of gambling venues and increased participation of underage youth in both legal and illegal forms of gambling has led to a worrying trend: between 4 and 8% of adolescents report significant problem patterns of gambling, and 10–15% remain at risk for the development of severe problems. Jeff Derevensky’s work in the area of youth gambling has led to award-winning prevention initiatives and effective training for treatment providers. His work has also impacted social policy and legislation here in Canada and around the world; for instance, his research recently supported a provincial law prohibiting underage minors from purchasing lottery tickets in Quebec.



Professor Jeff Derevensky

Sedentary Lifestyles: The evidence is undeniable: a sedentary lifestyle is a major underlying cause for disease and disability. Being sedentary doubles the risk of cardiovascular disease, type 2 diabetes and obesity and increases the risks of colon and breast cancer, high blood pressure, lipid disorders, osteoporosis, depression and anxiety.



Dr. Catherine Sabiston researches the factors that will determine who is more susceptible to adopt an active lifestyle or not. Her work examines whether behavior drive emotions or the reverse, in the context of physical activity practices. In addition, Dr. Sabiston studies the psychosocial experiences of coping with chronic diseases such as cancer, and other mental and physical disabilities throughout the lifespan.

Dr Annett Körner specializes in psychosocial oncology interventions that facilitate health behaviour in individuals diagnosed with skin cancer. At the Jewish General Hospital, she examines how melanoma patients can best be lead through their care trajectory right from the point of diagnosis- through the tumor and cancer treatment phases, and into the resources offered in their community.

Obesity is a major consequence of a downward spiral of diet, exercise, lifestyle choices, depression and other psycho-social factors. Particularly among the elderly, whose body composition has proportionally less muscle mass, obesity increases the risk of injury by falling, hampers the ability to recover from an injury, and accelerates the severity the other existing health conditions.

Professor Ross Andersen (CRC) examines both childhood and adult obesity and studies holistic strategies to promote long term weight control through exercise programs and practices. With the average Canadian kid spending three to five hours a day sitting in front of a TV or computer screen, Professor Anderson’s leading research aims to reverse the downward spiral of health.



McGillian Nicholas Pham instructing Ray Chen at REACH

Self-Injury Among Youth: About two million people in the U.S. are self-injurers and approximately three million people have inflicted physical injury upon themselves at some time in their life as a way to manage their stress and cope with overwhelming negative feelings. In other parts of the world the numbers are considerably higher. Nancy Heath contributes to an international alliance to reduce self-injury in youth and has led to the development of school protocols for handling suicidal related behaviors, including self-injury.

Interventions for Developmental, Biological & Genetic Disorders

Autism and other Development Disorders: Autism is the fastest-growing development disability and affecting up to 1 in 150 births, Steven Shaw, Tara Flanagan and Jake Burack have formed a powerful partnership to build an exciting “safe-space” research laboratory for the applied study of autism and other developmental disorders.

Tara Flanagan is researching ways to prepare our youth with autism for the transition between the school system and the workforce, while Jake Burack’s focus in on the development of attention and cognition among persons with autism, other specific syndromes associated with intellectual disabilities. At the same time, Steven Shaw’s research interests include educational, social and psychological issues for children with borderline intellectual functioning, and medical and genetic aspects of severe developmental disabilities.

The Faculty of Education houses a one-of-a-kind Neuroscience Laboratory in which Kim Cornish and her research team is exploring brain-behavior in infants and children with genetic disorders, such as Fragile X syndrome (the world’s most common cause of hereditary mental retardation) and more general disorders such as Attention Deficit/Hyperactivity Disorder (ADHD). Kim’s novel research epitomizes our Faculty’s transdisciplinary spirit- incorporating expertise from molecular genetics, developmental neuroscience and cognitive psychology.



Graduate Students at work in Kim Cornish’s Neuroscience Laboratory

Adapted Physical Activity Interventions: Professor Greg Reid’s research involves individualized instruction, and matching personal strengths and interests with appropriate activities to promote full participation for people with intellectual disabilities, learning disabilities, developmental coordination disorders, and autism.



Tanja Taivassalo and her team

Tanja Taivassalo studies the impact of exercise and therapeutic interventions on the quality of life of persons with skeletal muscle mitochondrial disorders. Integrative methodologies in the laboratory including clinical exercise testing and gas exchange, MRI and spectroscopy, ultrasound and NIR, biochemical and molecular analyses are used to measure cardiovascular, pulmonary, metabolic and muscle responses to exercise and training.

The research conducted in Paul Stapley’s lab focuses on how humans coordinate the seemingly straightforward act of reaching, touching or grasping objects while maintaining their balance. Everyday tasks such as these are taken for granted by able-bodied persons, but are often the source of destabilisation, falls or injury among the elderly, Parkinson's disease, cerebral palsy or those who have

disabled and people with conditions such as obesity, suffered a stroke.

Muscle Movement and Motor Control:

Dr. Dilson Rassier uses emerging scientific technology called “nanotechnologies” to explore how muscles contract and generate force. Using devices that measure 100 millionth of a millimeter in size, he examines how molecules that make up the muscle cell interact to produce the muscle contraction.



Students at work in Professor Dilson Rassier’s Nanotechnology Lab

Dr. Theodore Milner conducts functional brain imaging studies that investigate the roles of different brain areas in motor control and motor learning. He is interested in the rehabilitation of impaired motor function after damage to the brain and, together with his collaborators, has developed novel robotic devices for the rehabilitation of hand function following a stroke. Dr. Milner’s rehabilitation research is particularly relevant for the aging population.

In addition, our researchers are actively engaged in society. Several have established laboratory facilities in hospitals to study the clinical management of chronic diseases and disability. For instance, Julie Côté’s lab is situated in the Jewish Rehabilitation Hospital and H el ene Perrault’s research space is located in the Montreal Chest Institute, at the McGill University Health Centre (MUHC).

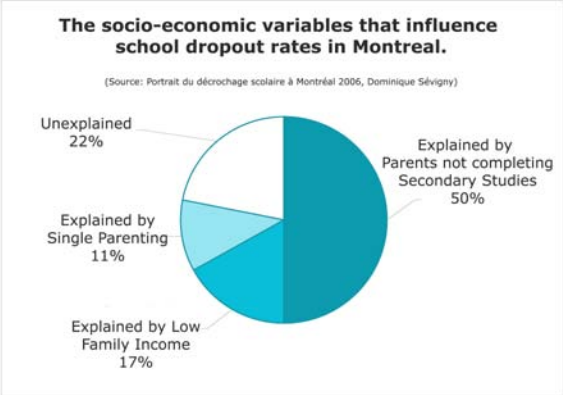
Educational Leadership in the 21st Century



The backbone of a prosperous and peaceful society is a strong education system. The mission of the *Educational Leadership in the 21st Century* campaign is to support transdisciplinary research across our academic units that helps our education professionals meet new objectives on multiple fronts. For instance, our teachers must find ways to reverse the complex drop-out problem, while at the same time prepare our students for occupations in math, science and technology. Critical areas in need of your support include:

Perseverance and Retention

The drop-out challenge is an overarching one: it is the result of multiple interdependent problems, many of which are highlighted in this report. Although progress has been made at a national level in reducing the high school drop-out rate among Canada's youth, drop-out rates remain very high in rural areas and in small towns, especially in Quebec. Our researchers are addressing the drop-out problem by focusing on issues such as literacy, generating interest in mathematics and science, combating harassment and bullying, and promoting ethnic diversity and inclusion.



A Multi-Literate Society: To succeed in today’s knowledge-based society; students must be “multi-literate,” having the capacity to easily navigate a wide variety of media, contexts and environments. Michael Hoechsmann for example, studies how we use media and technology in professional and teacher education contexts and is actively involved in policies concerning media education at the provincial and national levels.

At the same time, we face a basic literacy challenge. In Québec, 800,000 people aged 16 to 65 are unable to fully comprehend everyday written information and rely on others to understand newspapers, dosage information, flyers, etc. In the US the picture appears even bleaker; 30 million adults may not be able to make sense of a simple pamphlet and 1 in 20 is not literate in English. In addition, illiteracy is closely correlated with unemployment and criminal behavior: 90% of welfare recipients are high school dropouts and 85 percent of all juveniles who interface with the juvenile court system are functionally illiterate. To take on these literacy problems, our professors are transcending the boundaries of traditional disciplines.



Abracadabra Program

As the Director of *The Centre for the Study of Learning and Performance (CSLP)*, Robert Savage researches the development of cognitive processes in reading and spelling in the early years and has built an interactive web-based literacy program called ABRACADABRA, designed for early elementary school-aged students, their educators, teachers and parents. ABRACADABRA has enjoyed international success in battling the alarmingly high percentage of low ability readers in countries throughout the world. In the area of immersion and second language learning and teaching, an especially pertinent topic in Canada, Roy Lister is conducting research on language education policy in Quebec and its effects on classroom curriculum and practice, and TESL teacher education in Quebec.

Harassment and Bullying: 42% of kids have been bullied and 35% of kids have been threatened while online. Shaheen Shariff’s research on cyber-bullying and other forms of school-based violence helps develop guidelines for schools on balancing free expression, safety, privacy and supervision in cyber-space. The impact of her work is far reaching, and involves collaboration with educators from India, Europe, Oceania, and North America. Shaheen is a leading international expert on law and school policies as they relate to cyber bullying.



Professor Shaheen Shariff



Mathematics, Science and Information Technology Education: Macro-level economic trends are putting immense pressure on our society to compete for future occupations in the science and technology sectors. Our society needs 300,000 more people educated in areas of Physical Science, Engineering and Technology to support these growth industries, but interest levels in these areas are lowering, and 50% of 13 year-olds and 60% of 16 year olds report that science is more difficult than other subjects.



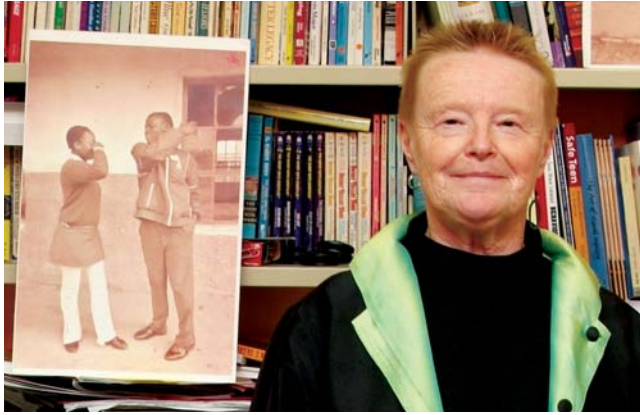
Students at the Tyndale St. Georges Community Centre

The Faculty of Education is responding to this challenge in several ways. Elizabeth Wood, Associate Dean of Academic Integrated Studies in Education, is co-chairing a joint committee with the Faculty of Science to enhance science education at McGill. Her work on this committee will expand science education programs within our Faculty and eventually lead to more effective teaching of science in our schools.

Gale Seiler researches math and science education within inner-city communities of poor and marginalized youth in Canada and the US. She recently launched an innovative evening course called “Mastering Math & Science” for high-risk youth at the Tyndale St. Georges Community Centre in Montreal. Similarly, Annie Savard’s research focuses on the contribution of mathematics in elementary school to the development of citizenship competencies such as decision making and critical thinking.

Bruce M. Shore studies giftedness, expertise, and cognitive differences in learning and thinking and his research aims to reduce boredom, behavior problems, and the risk of dropping out, and to help society benefit from the essential talents and skills of gifted young people. Mark Aulls is researching the effects of student-teacher interaction on the development of students' intellectual skills.

Trans-Cultural Educational Leadership:



James McGill Professor Claudia Mitchell

Our leading researchers are addressing an array of challenges around the globe. For instance, James McGill Professor Claudia Mitchell has pioneered research on HIV/AIDS education in South Africa and Rwanda. Her research includes the areas of youth participation, sexual violence in and around schools, and the uses of media and popular culture for social change. Claudia has received a SSHRC grant to work with Eun Park in our School of Information Studies (SIS) on a visual and arts-based research project entitled “Giving life (to data) to save lives (in the age of AIDS).” She also serves as a special advisor to the UN Secretary General.

Steven Jordan’s work focuses on enhancing the learning of adults and aboriginal peoples in Canada. He is especially interested in immigrant and marginalized groups, vis-à-vis skills training and has established the Immigrant Workers Centre (IWC) of Montreal, which addresses the learning experiences of immigrant workers in the Montreal labour market, and an after school program in the Cree Nation of Wemindji.

Ratna Ghosh is interested in comparative perspectives on multicultural and international education, globalization, and gender and education. Her current research projects focus on peace building through critical discourse analysis via history textbooks in India and Pakistan. Bronwen Low explores the implications and challenges of popular culture—and Hip Hop, spoken word, and slam poetry in particular—for education, youth identities, and language practices across Canada.



(Left) A workshop for Cree Women in Wemindji, (right) computer classes at the Montreal Immigrant Workers Centre

Information Management, Cognition and Learning Environments



The role of technology as a facilitator in the transfer of knowledge and information is growing every day. The School of Information Studies focuses upon the knowledge and skills necessary for identification, acquisition, organization, retrieval, and dissemination of information to meet people's needs. Our professors are also leading the way in the fascinating areas of cognition, psychology and learning in the context of Human-Information Interaction. Critical areas in need of your support include:

Information and Knowledge Management: Kim Dalkir is a world-class expert in knowledge management, intellectual capital, and organizational learning. Her research aims to stem the tide of *corporate amnesia* by investigating how organizations learn from past successes and failures and how critical knowledge can be retained as employees retire. Her work has contributed to the knowledge-sharing strategy and evaluation framework used by the Canadian antiterrorist organization, CRTI.

Professor France Bouthillier focuses on knowledge management as it relates to the evaluation of competitive intelligence software applications for small businesses and business information services.



Kim Dalkir

Eun Park is a leader in the areas of digital archives, digital preservation, electronic records systems and enterprise content management, and her research tackles authenticity, reliability, and system integration problems with electronic medical, business and library records. Her work is having a direct impact on corporate and government policy in these areas. Elaine Ménard researches the organization of information and in particular cross-language information retrieval.

Human Information Interaction: James McGill Professor, Susanne Lajoie is a world-leader in the design and evaluation of intelligent tutoring systems for classroom and real-world applications. Her approach has been used to support learning in mathematics and science classrooms as well as work place situations pertaining to diagnostic reasoning in medicine and avionics troubleshooting.

Andrew Large is an expert on the design and use of information technology for elementary school students and how children interface with library information. With the support of his research team, he has designed web-based retrieval systems and a bilingual web portal called *History Trek*, which has been endorsed by several ministries of education across Canada.



Professor Catherine Guastavino



Student testing in Martin Drapeau's Lab

Catherine Guastavino is leading the way in the fields of human-computer interaction, sound perception and cognition. She is currently the Associate Director of the *Center for Interdisciplinary Research on Music Media and Technology (CIRMMT)* and studies how humans process and organize multisensory information both in real life and in simulated environments. She has developed software interfaces capable of (re)creating virtual environments used for testing in academic settings and in the aerospace industry.

Martin Drapeau leads the *McGill Psychotherapy Process Research Group (MPPRG)*, a one-of-a-kind venue for spearheading new techniques in psychotherapy, including cyber-psychology and virtual reality. The MPPRG collaborates with researchers and clinicians in diverse fields and from various universities and hospitals, both locally and internationally.

Learning, Stories and Electronic Media: Teresa Strong-Wilson is interested in the influence of stories, and experiences with story, on educational formation and the learning processes. She conducts this research with social justice education in mind and a current project focuses on these areas in light of the shift in classrooms from print to electronic media.

Campaign McGill and the Faculty of Education



Undergraduate Support

McGill Education graduates and professors have been making history for 150 years and their impact can be seen and felt in classrooms around the world. The Organization for Economic Co-operation and Development (OECD) ranks Canada in the top 10 per cent of 57 countries that participated in a global literacy assessment study. The results of the study place Canadian youth among the best in the world in reading, mathematics and science. McGill’s Faculty of Education is proud to have contributed to this success.

Through Campaign McGill, the Faculty is seeking the private support required to maintain its leadership role in educational research and training. To fulfill its unique potential, McGill Education needs support most urgently in the following areas:

Endowed Chairs (\$9 million)

Government programs and endowed chairs have enabled McGill to recruit close to 800 new professors since 2000 and retain many more of its stars. However, the international battle for recruiting and retaining talent is intensifying. McGill Education seeks funding for the following three positions:

Chair in Science, Math, Technology (\$3 million) to support ongoing research and teaching in this vital area;

Chair in Information Management (\$3 million) to allow the Faculty to build on its expertise in the organization and transmission of knowledge and information; and

Chair in Applied Human Development - Typical and Atypical (\$3 million) to push forward new boundaries in the Faculty’s leadership in the area of higher education.



Student Support (\$18.88 million)

At the undergraduate level, financial aid and scholarships are particularly important to enable potential teachers to pursue university studies in education. In addition, strong action is needed to provide financial support for graduate students who make a defining contribution to McGill Education’s academic excellence. The following initiatives will address these issues:

Undergraduate student support (\$8.28 million) in the form of scholarships and bursaries will allow the Faculty to attract talented students from around the globe;

Graduate student support (\$10.1 million) to increase the Faculty’s ability to compete with the world’s leading universities for the highest calibre of graduate students; and

A fund to foster careers in teaching Science and Math (\$250,000) to improve the quality of research and field experience of science and math student teachers through more effective interaction with high level professionals in the field.

A fund to foster careers in initiatives towards school perseverance (\$250,000)

McGill Research Centre for Physical Activity, Health & Wellbeing (\$12 million)

Director – Chair in Physical Activity & Health (\$3,000,000)

Renovation of Existing Building (\$4,000,000)

Equipment Support (\$3,000,000)

Post-Doctoral Support Direct (10) x 4year (\$2,000,000)

Other Initiatives and Programs (\$0.5 million)

Education Lecture Series (\$500,000)

Only at McGill



Student working in the Education Computer Lab

Outstanding Students, Remarkable Impact

Resting at the foot of Mont Royal, the Faculty of Education traces its beginnings back to 1857 when the McGill Normal School was established at McGill. In 1907, it was moved to Ste. Anne de Bellevue where it became part of Macdonald College. The first graduate program was inaugurated in 1930, and in 1953 the University established the BEd degree. In 1970, the Faculty of Education relocated to a new building on the McGill Campus. Today, undergraduates enter the University with Canada's highest average grades and London-based *Times Higher Education Supplement* ranked McGill the top Canadian university and among the top 20 universities in the world in 2008.

Faculty of Education Facts and Figures

- McGill's sixth-largest faculty: 1,797 Undergraduate Students; 864 Graduate Students;
- 60 Tenured Professors; 87 full-time academic staff
- Faculty Renewal: aided by a pool of innovative government initiatives such as the Canada Foundation for Innovation and its Canada Research Chairs program, the Faculty has recruited 37 new professors since 2000.



➤ **Structure of the Faculty of Education**

- **The Department of Integrated Studies in Education** at the undergraduate level DISE is responsible for generalist and specialist teacher education, through six degree programs. At the graduate level, it offers three MA programs, as well as a PhD program. In addition, DISE houses the Centre for the Study and Teaching of Writing (CSTW), the Centre for Educational Leadership (CEL) and First Nations & Inuit Education.
- **The Department of Educational and Counselling Psychology** offers programs in the areas of professional education, cognition and instruction, and professional psychology. It offers 28 programs, including MEd, MA (non-thesis), MA (thesis) and PhD programs in Counselling Psychology and Educational Psychology, as well as diplomas, certificates, graduate certificates and post-PhD graduate diplomas.
- **The Department of Kinesiology and Physical Education** offers two undergraduate programs and two programs at the graduate level including a doctoral degree through an Ad Hoc PhD program.
- **The School of Information Studies** focuses upon the knowledge and skills necessary to identify, acquire, organize, retrieve and disseminate information for people's varied information needs. The School offers a two-year program, accredited by the American Library Association, leading to the Master of Library and Information Studies (MLIS).



*Development and Alumni Relations
McGill University
1430 Peel Street
Montreal, Quebec, Canada
H3A 3T3*

<http://www.mcgill.ca>