The Centre for Medical Education aims to promote innovation and excellence in health sciences education through research and scholarship, leadership and mentorship, and dissemination of best practices in medical education. With 16 Core Faculty and 38 Centre Members, we have had a very productive year as we have witnessed significant growth in educational research and scholarship, new teaching and learning initiatives, and involvement in the larger community.

RESEARCH AND PUBLICATIONS

**Grants and Research Awards Received**

This year, Centre Members held 56 grants in medical education totaling $15,343,897. This was a significant increase in grant capture from 2011, with 22 new research grants totaling $6,300,000. More importantly, our number of grants and funding has more than doubled since 2010. In addition, these research grants were obtained by a broad spectrum of individuals, at all levels of health sciences education and focused on the following topics: Teaching and Learning, Simulation and Technology-Rich Environments, Clinical Reasoning and Decision-Making, Assessment of Learners, Instructional Methods and Faculty Development.

A number of new grants were obtained this year. Of note is the LEADS Partnership, led by Dr. Susanne Lajoie in the Faculty of Education at McGill University, with significant involvement from Dr. Jeffrey Wiseman (Core Faculty) and Dr. Kevin Lachapelle (Centre Member). This inter-disciplinary team is funded by the Social Sciences and Humanities Research Council (SSHRC) Partnership Grant to examine how emotional engagement relates to learning processes and outcomes as assessed in the context of technology-rich learning environments (TREs). A number of specific projects are also underway as part of the LEADS partnership, with Drs. Jeffrey Wiseman and Susanne Lajoie as the lead investigators: the Deteriorating Patient Smartphone project, with the support of the Group on Educational Media at Aalborg University in Denmark; the Socio-Cognitive Conflict, Epistemic Emotions and Learning project, with researchers at Ludwig-Maximilians University in Munich, Germany; and Theory-Driven Designs to Support International Medical Communities of Practice: Fostering Emotional Regulation and Cultural Diversity Using a Problem-based Learning Approach, in collaboration with researchers from universities in New Jersey, New York and Hong Kong.

Dr. Meredith Young, together with collaborating researchers, received continued funding from the Medical Council of Canada (MCC) to explore the underlying cognitive processes underpinning diagnostic accuracy and clinical reasoning. Two separate projects were supported to investigate the role of instruction for diagnosis and distraction on the diagnostic performance of residents and a third funded an experimental study investigating the role of testing as a tool for learning. The College of Family Physicians Janus Research Fund supported work investigating the value of integrating simulation-based assessment into undergraduate family medicine skill-based examinations; this project was conducted in collaboration with Dr. Leonora Lalla. Finally, the Conseil Québécois de Développement Professionnel Continu des Médecins supported the investigation of interpersonal communication and medical management under times of stress through the examination and evaluation of performance of health professionals during a large-scale high fidelity disaster simulation; this project was conducted with Dr. Ilana Bank and other colleagues at the Montreal Children's Hospital.

Dr. Stuart Lubarsky, together with other colleagues at the Centre, was awarded an Educational Research Grant from the American Academy of Neurology to develop and implement a Multiple Mini Interview
for selecting applicants to a residency training program in neurology. Drs. Farhan Bhanji and Ronald Gottesman received grants from the McGill Collaborative Research and Development Fund to examine *The Impact of Emotions on Medical Decision-Making in a Dynamic Multi-Agent Simulation Training Environment*. Drs. Aliki Thomas and Adriana Venturini received a grant from the McBurney Professional Training Program at the Institute for Health and Social Policy to proceed with their research on: *Supporting the Training of Rehabilitation Providers in Haiti*. Dr. Linda Snell and her students received a grant from la Fédération des Médecins Résidents du Québec to study *The Effect of Resident Duty Hour Reform on the Evolving Concept of Professionalism in Medicine – A Qualitative Study*.

Dr. Mary Ellen Macdonald, together with Dr. Colin Chalk and Dr. Samuel Lapalme-Remis (a colleague from the University of Ottawa), received funding for a project on *The Patient Experience of Lumbar Puncture at a Teaching Hospital*. This project is especially innovative in that it bridges patient experience and resident education, using patient feedback of trainee performance directly to improve resident training. Dr. Charo Rodriguez is currently the principal investigator in three funded research projects. The first concerns processes of intra-professional clinical collaboration between family physicians and specialists for specific patient profiles, namely patients suffering from diabetes or mental health problems, and vulnerable elders. The second, carried out in multi-hospital university centres, aims to understand how these organizations become knowledge intensive organizations through the configuration and implementation of a new clinical information system. In the third, which is an international investigation involving four medical schools from four different countries, she intends to document the strategies adopted by academic family physicians in order to enhance the reputation of the discipline.

Lastly, Core Faculty and Centre Members with ongoing grants have continued their research, with the results being disseminated widely. For example, Dr. Saleem Razack, funded by SSHRC and together with colleagues at the Centre, the Faculty of Education and the University of Toronto, continued to undertake a discourse analysis of the admissions process to medical school, with focus on the key concepts of excellence, equity, and diversity. This has resulted in several presentations at national and international health professions educations meetings as well as a publication in *Academic Medicine*. Similarly, funding continued to support Dr. Meredith Young's collaborative work surrounding the role of evidence presentation on the role of health-related decision making. A CIHR large team training grant and a CIHR operating grant continued to support this work with a focus on health inequalities and social determinants of health measurement. (All new and ongoing grants are included in Appendix A.)

In an effort to keep our faculty members up-to-date and to promote research capacity, the Centre hosted eight research capacity building sessions in 2012. These meetings were led by various members of the Centre, the Department of Psychiatry and the Department of Family Medicine. Subjects included: *An Introduction to Validity: From Basic Concepts to Nuts and Bolts; Designing Questionnaires and Survey Instruments; and Applications of Knowledge Translation in Medical Education: From A to Z*. In the coming year, a focus on knowledge translation and medical education will continue to play an important role in capacity building at the Centre.

The Centre for Medical Education has been chosen as the Canadian representative on the Best Evidence Medical Education (BEME) Board. BEME is an international group of individuals, universities and professional organizations committed to the development of evidence informed education in the medical and health profession. Along with Universities in the United Kingdom, the United States, the
Netherlands and Australia, McGill will be part of the BEME International Collaborating Centres (BICCs), centres of excellence in relation to evidence-informed teaching. In this capacity, we will provide consultation to BEME reviewers, review BEME protocols and work towards establishing knowledge-translation processes in medical education.

**Publications**
The dissemination of scholarly work remains a key priority for the Centre. This year, Core Faculty and Centre Members published a total of 66 articles and book chapters (outlined in Appendix B). These publications focused on teaching and learning, which included clinical reasoning and decision-making, skill acquisition, and the impact of duty hours; professionalism and other core competencies; technology-rich environments; research methods; and faculty development. Articles were published in high-ranking educational journals and several of our faculty members’ publications were part of the ‘top 10 downloads’ from *Medical Teacher*, one of the influential journals in the field.

**Presentation of Scholarly Work**
Dissemination at national and international meetings was another indicator of success this past year. Core Faculty and Centre Members contributed approximately 200 papers, workshops and posters at scientific meetings. In particular, the Centre was well-represented at the 2012 Canadian Conference on Medical Education (CCME), which was held in Banff, Alberta in April, the 2012 International Conference on Residency Education (ICRE), which was held in Ottawa, Ontario in October, and the annual meeting of the Association for Medical Education in Europe (AMEE), which was held in Lyon, France in August 2012. In addition to these major educational meetings, our faculty traveled the world to teach and work with colleagues in countries such as Australia, Brazil, Chile, Ireland, Japan, the Netherlands, New Zealand, Oman, Portugal, Saudi Arabia and the United States.

**TEACHING AND LEARNING**

**Initiatives and Innovations**
The Centre for Medical Education continues to be a ‘think tank’ for educational innovation as Core Faculty and Centre Members present their educational innovations and challenges for feedback and discussion.

Core Faculty and Centre Members were involved in a number of new and innovative teaching initiatives in 2012. Of particular note is the involvement of Centre staff in the design and development of the new undergraduate medical curriculum. To prepare future generations of health care professionals to take their place as leading medical practitioners, educators and researchers, McGill embarked on an ambitious journey to revise the Undergraduate Medical Curriculum, which will be implemented in the fall of 2013. The design of the first 18 months of the curriculum, Foundations of Medicine and Dentistry, is being led by Dr. Colin Chalk. In addition, Dr. Leonora Lalla has led the development and implementation of the longitudinal Family Medicine experience, as well as a number of other components related to Family Medicine in the new curriculum. Drs. Miriam Boillat, Donald Boudreau, Jim Brawer, Beth-Ann Cummings, Robin Featherstone, Peter McLeod, Saleem Razack, Yvonne Steinert, Aliki Thomas and Meredith Young are also actively involved. In addition, Dr. Linda Snell was asked to chair the Educational Strategic Planning Group for the Faculty of Medicine.
At the same time, Dr. Donald Boudreau, together with Drs. Richard and Sylvia Cruess and many other colleagues, is involved in the continued development and deployment of *Physicianship* in the undergraduate curriculum. He is also designing and delivering the modules on the Clinical Method, which include clinical observation, attentive listening, and clinical reasoning. Fraser Moore is the block leader for the new “Human Behaviour” course and a member of the Transitions to Clinical Practice Committee in the new curriculum. He is also working on a project to study the expectations of students doing elective rotations in neurology to determine if their needs are being met. Lastly, the following Centre Members are Osler Fellows for the Class of 2012: Drs. Lorraine Bell, Michelle Elizov, Kevin Waschke, and Jeffrey Wiseman.

A significant educational and research innovation this year was the City of Montreal’s Disaster Simulation Exercise, spearheaded by Dr. Ilana Bank and colleagues. This simulation exercise involved all levels of city personnel, including the police, firemen, STM, and hospitals. The MUHC was chosen as the pediatric site, and this simulation provided a unique opportunity to study communication and team functioning of ER and its personnel during a disaster. Dr. Lily Nguyen, together with Centre members, is also involved in a number of educational innovations that focus on simulation; these educational initiatives include the development and implementation of a simulation-based Interspecialty Team Training Program in Crisis Resource Management for OTL-HNS, Anesthesia and Paediatric Emergency Medicine residents; a four-year simulation-based Ethics & Communication Curriculum; and a four-year simulation-based Pediatric Airway Management Curriculum.

**Educational Programs**

In line with the mission of developing future health professionals and medical educators, the Centre for Medical Education welcomed two medical students and three residents who spent between 1 – 3 months at the Centre. Student and resident projects involved some of the following topics: *When the Learning Environment is Suboptimal: A Qualitative Study on What Medical Students Consider as Mistreatment; Script Concordance Test in ICU Evaluation of Residents and Fellows; Simulation-Based Ethics Education for Pediatric Residents; and Residents as Role Models: Impact on Undergraduate Trainees.* We also welcomed two postgraduate fellows in medical education: Dr. Mazin Fatani (Cardiac Surgery) whose project was entitled *Focused Echocardiography Training for Cardiac Surgery Residents: Opinions with Respect to Training Objectives,* and Dr. Sonia McFarlane (Obstetrics and Gynecology), who focused on *Theatre Techniques and the Training of Obstetrics and Gynecologists.* Lastly, 12 students were enrolled in the MA in Educational Psychology (Health Professions Stream).

With respect to student “success”, it is worth mentioning that Dr. Lily Nguyen, a Centre Member and former Teaching Scholar, was accepted to the Masters in Health Profession Education Program at the University of Illinois in Chicago (UIC). In addition, Dr. Robert Sternszuz, a former medical education elective participant published his research project on “Residents as Role Models: Impact on Undergraduate Trainees” in *Academic Medicine* and was accepted for a Masters in Educational Psychology at McGill. On a related note, Dr. Elisa Ruano-Cea, a former medical education elective participant was honored by the McGill University Health Centre for exceptional contributions and has been accepted for a Masters in Health Profession Education degree at UIC.

Other former students also had their work accepted for presentation and publication. Of note is Dr. Daniel Zigman’s paper on *Using Simulation to Train Junior Psychiatry Residents to Work with Agitated Patients: A Pilot Study* that was accepted for publication in *Academic Psychiatry.* Centre trainees also
received a number of honors. Hieu Nguyen, supervised by Dr. Saleem Razack, received the Dr. Clarke K. McLeod Memorial Scholarship, a bursary that supports the research work of undergraduate medical students. He also presented his research findings via an interactive poster presentation at Student Research Day in November 2012. Wid Kattan, a student of Dr. Linda Snell, received first place for her poster presentation at the CPA and Dr. Catherine Patocka’s elective research project was the co-recipient of the top research prize in the Emergency Medicine residency program. In addition, this work was accepted in the original research category for AMEE and as an oral presentation at the Canadian Association of Emergency Physicians Conference. Catherine is also pursuing a Master’s in Health Professions Education at Maastricht University in the Netherlands.

INVolvement in the Community

In 2012, the Centre welcomed a number of individuals from the McGill community and elsewhere to speak at the Centre and at Medical Education Rounds. Guests from McGill included Dr. Norbert Schmitz (Psychiatry) and Dr. Alenoush Saroyan and colleagues (Educational and Counselling Psychology). The joint meeting with colleagues from the Faculty of Education was very fruitful in terms of promoting exchange and further collaboration. We also welcomed national and international guests, including Dr. Itiel Dror (Miami), Drs. Regina and Stewart Mennin (Brazil), and Dr. Glenn Regher (British Columbia).

The Centre also hosted a number of Visiting Scholars in 2012, including educators from Brazil, New Zealand, Japan, the West Indies, Ireland and Australia, all of whom spent differing lengths of time to learn from Centre colleagues. As an example, in October 2012, the Centre welcomed a group of visiting scholars from Holland whose goal was to learn about the teaching and learning of CanMEDS competencies from the perspective of medical educators, teachers, program directors, associate deans and residents here at McGill. In 2013, the Centre will host 15 medical educators from the University of Bern’s Master of Medical Education program. During their 2.5 day stay, these faculty members will participate in a Faculty Development Course, jointly organized by the Centre and the Faculty Development Office. The Centre and its activities are becoming more visible on the international scene, prompting interest and requests for visits and exchanges.

Interaction with colleagues at l’Université de Montréal also continued and in April 2012, we held our 6th Education Research Day in the Health Sciences with colleagues from the University of Montreal. This day, which is designed to facilitate a discussion of common interests and challenges in health sciences education and the development of new collaborations, featured presentations by Dr. Rachel Fisher on Developing an Integrated Simulation-Based Orientation Program for Junior Anesthesia Residents, and Dr. Saleem Razack and Laura Easty (a medical student) on Standardized Patients’ as Performance Evaluators in Simulation-Based Multiple Mini-Interviews for Selection for Entry into Medical School: Would the Same Candidates Get In?

In addition, Core Faculty members were involved in the planning of several international conferences. Drs. Stuart Lubarsky and Meredith Young helped to organize the First International Conference on Clinical Reasoning, together with colleagues from the Collège des médecins du Québec, l’Université de Montréal, in Montreal in October 2012. This conference, which addressed a wide international audience, established McGill (and U de M) as a central hub for innovative and scholarly work in the field of clinical reasoning. Dr. Linda Snell was the co-chair of the Latin American Conference on Residency Education, the co-chair of the International Conference on Residency Education, and a member of the International Advisory Committee for the World Congress of Internal Medicine that was held in
Santiago, Chile, November 2012. Additionally, Dr. Yvonne Steinert was actively involved in the planning of the 2nd International Conference on Faculty Development, to be held in Prague in 2013. This conference builds on the work of McGill and the University of Toronto in creating the 1st International Conference on Faculty Development, held in 2011. We are delighted to see that this conference has now become part of the landscape of medical education.

MILESTONES
The Centre welcomed five new Centre members for 2012: Drs. Sero Andonian, Lorraine Bell, Robin Featherstone, Leonora Lalla, Lily Ha-Nam Nguyen. These individuals have brought additional knowledge and expertise in the fields of Urology, Pediatrics, Library Sciences, Family Medicine and Otolaryngology. The Centre was actively involved in several recruitment activities in 2012. This included the search for an Assistant Professor in Health Sciences Education Research and an Assistant Professor in Assessment and Evaluation for Postgraduate Medical Education. We were successful in hiring Dr. Peter Nugus, a Sociologist from Australia, for the Health Science Education Research position beginning January 2013. The search for Postgraduate Medical Education continues. At the same time, we are very pleased that we are beginning to build our team of Educational Research Scientists, who will clearly enhance our research capacity in medical education.

HONOURS, AWARDS, AND PRIZES
A number of Core Faculty and Centre Members were honored this year. At the national level, the following individuals were recognized: Drs. Richard and Sylvia Cruess were both awarded The Queen Elizabeth II Diamond Jubilee Medal, in recognition of his innovations in the field of ethics in medicine and the key role she played in drafting an international code of conduct for physicians; Dr. Richard Cruess also received the 2012 Canadian Medical Association’s (CMA) Medal of Service in recognition of his outstanding and exceptional contribution to the advancement of health care in Canada; Dr. Saleem Razack received the 2012 Association of Faculties of Medicine of Canada May Cohen Gender Equity Award for his achievements in improving the gender equity environment in academic medicine in Canada; and Dr. Peter McLeod received the 2012 Duncan Graham Award from the Royal College of Physicians and Surgeons of Canada for his lifelong contribution to medical education. In addition, Dr. Beth-Ann Cummings received the CAME Certificate of Merit, and at McGill, Dr. Thomas Hutchinson and Dr. Aliki Thomas were named to the Faculty Honour List for Educational Excellence. Lastly, Dr. Michelle Elizov was named The Richard and Sylvia Cruess Faculty Scholar in Medical Education and Dr. Ning-Zi Sun received The Jonathan Campbell Meakins & Family Memorial Fellowship.

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Looking back, educational scholarship and research productivity were key priorities for the Centre for Medical Education and we are pleased to report that these objectives were met. I would also like to acknowledge the following individuals: Dr. David Eidelman for his vision and support for the Centre for Medical Education; Dr. Linda Snell for leading the Centre from February to August 2012 as the Acting Director of the Centre; Ms. Audrey Lew for her skilled management and exemplary administration of the Centre; Drs. Donald Boudreau and Mary Ellen Macdonald for co-chairing the McRIME (McGill Research in Medical Education) Committee; and Drs. Michelle Elizov and Farhan Bhanji for their capable leadership of the Medical Education Electives and Postgraduate Fellowship Programs.