McGill | Faculty of Medicine | Faculté de médecine

EDUCATION STRATEGIC PLAN

Project Renaissance

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in collaboration with
the Steering Educational Excellence (SEE) Committee

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EDUCATION STRATEGIC PLAN:
Statement of Purpose

VISION

"Healthier societies through education, discovery, collaboration and clinical care."

The Faculty of Medicine's activities are rooted in this **vision**. Education comprises the training of **health professionals** in medicine, nursing, occupational therapy, physical therapy and speech language pathology, as well as the training of **biomedical and health scientists**. Our social accountability goal of building healthier societies through education, discovery, collaboration and clinical care depends upon robust and comprehensive health science educational and professional training programs at all points of the higher education continuum.

MISSION

The Faculty's **mission** is "to educate future and current health care professionals and scientists based on the highest standards of excellence and principles of life-long learning together with the pursuit of novel research and clinical innovation, to improve the health of individuals and populations worldwide."

OVERVIEW

Our students in the health professions programs are well-prepared to preserve and promote the health of their patients. As members of interprofessional teams, our students are clinically competent, collaborative and are guided by values of professionalism and compassionate care. As part of their professional development, they are exposed to and participate in health research and are expected to apply evidence-based approaches to ensure health care is based on best practices.

Our learners in the biomedical sciences create and synthesize knowledge furthering our understanding of health and disease, with the goal of pursuing scientific discoveries that will ultimately translate into enhanced health of individuals and populations. Our graduate trainees are immersed in outstanding research programs, and have the opportunity to collaborate with and learn from all disciplines within the basic and clinical sciences.

Faculty of Medicine's MISSION:

To **educate** future and current health care professionals and scientists based on the **highest standards of excellence** and principles of life-long learning, together with the pursuit of novel **research** and clinical innovation, to improve the health of individuals and populations **worldwide**

EDUCATION

EDUCATIONAL RESEARCH

Centre for Medical Education

Many other Departments/Schools and Offices/Centres also contribute to educational research

EDUCATION: DEGREE PROGRAMS

Health Professions Programs

- Medicine (UGME)
  - Gatineau
- Nursing
- Occupational Therapy
- Physical Therapy
  - UQÀC
- Speech & Language Pathology
- Residency (PGME)

Undergraduate Programs

- Biomedical Sciences

Graduate Programs

- MSc
- PhD
- Certificates

OFFICES/CENTRES PROMOTING EXCELLENCE

- **Accreditation**
- **Admissions**
- **Assessment & Evaluation**
- **Continuing Professional Development**
- **Faculty Development**
- **Interprofessional Education**
- **Molson Informatics**
- **Steinberg Centre for Simulation & Interactive Learning**
- **Social Accountability & Community Engagement**
- **The WELL**

OUTREACH WORLDWIDE

- **Public Education**
- **Professional Development**
- **International Education**
  - Global Health

The educational enterprise is linked to all facets of the Faculty of Medicine's Mission. Each entity was listed in the **primary** column that best represents their activities, although many have multiple additional functions and could be in multiple columns.

NEW STRATEGIC DIRECTIONS

Our educational programs in the health professions and biomedical sciences have numerous strengths. There is a highly competitive pool of applicants, the expertise of our faculty is exceptional and the quality of the education is outstanding. Of note, there are at least ten offices/centres that support educational excellence. In our efforts to build on and leverage existing organizational strengths and capitalize on new opportunities, it is essential that the Faculty of Medicine develop an overarching and comprehensive Education Strategic Plan.

Well-articulated goals and actionable strategies will enable us to address current challenges, and more importantly, allow us to pursue innovative and ground-breaking directions that are value-added and will nurture a thriving learning community. There are unprecedented opportunities to open communications, to bridge silos across the Schools, Departments, Centres and Units, work collaboratively to generate novel ideas regarding teaching and learning and disseminate and assimilate these educational innovations.

We want our learners to be articulate, effective communicators and team players, collaborative leaders and creative problem-solvers, who persevere in the face of challenge, are motivated and passionate about what they are learning and are committed to lifelong learning and evidence-informed health care research and translational interactions. Richer biomedical training with a focus on innovation in the basic sciences that includes better integration between basic and clinical research and between research and practice will be prioritized. This will include more explicit training on how to translate basic research into clinical and industrial applications. We will enhance our ability to conduct and fully integrate educational research in our pedagogical practices and pursue strategies that will enrich the learning spaces, so as to enable evidence-based learner-centred and interprofessional approaches.

Future graduates we are aiming to produce:

In the biomedical sciences: Our graduates will benefit from a more interactive and interdisciplinary learning experience and be better prepared for multiple career trajectories in academia, health care, industry or government so as to better meet societal needs.

In the health professions: Our graduates will more successfully transition from learner to practitioner and teacher, and will effectively translate research evidence and mobilize and integrate interprofessional patient-centred teams for better health care.

Our faculty of the future will apply more evidence-based approaches to teaching and will be recognized for their scholarship and innovation in education.

Our Education Strategic Plan aims to target and cultivate particular skills, spaces and attitudes by amplifying connections between students, faculty and community members and by purposefully synergizing educational research with teaching and learning practices. The Education Strategic Plan will ultimately transform the teaching and learning enterprise to optimally promote the health of individuals and populations, and meet the Faculty of Medicine's mission of the highest standards of excellence.

> "Education is not the filling of a pail but the lighting of a fire"
>
> -W.B. Yeats

EDUCATION STRATEGIC PLAN:
Strategic Planning Process

The Vice Dean - Education was given the mandate to develop an Education Strategic Plan (2016-17). She assembled a committee called Steering Educational Excellence (SEE), which includes the following individuals: Rajesh Aggarwal, Farhan Bhanji, Elaine Davis, Adam Finkelstein, Terry Hébert, Demetra Kafantaris, Yvonne Steinert (replaced by Don Boudreau while on sabbatical), Saleem Razack, Aliki Thomas and Meredith Young. In order to capture the thematic areas of greatest importance to the educational mission, a SWOT analysis was conducted with the input of members of the Education Leadership Council (ELC) and the SEE committee. Eight primary themes emerged from the qualitative analysis of the SWOT data. The SEE then developed an online survey, which presented 8 potential strategic goals:

1. Fostering an environment that promotes excellence in educational research and scholarship.
2. Embracing and prioritizing student-centred learning and patient-centred values.
3. Facilitating educational opportunities and training programs that support interdisciplinary, interprofessional and collaborative educational environments.
4. Integrating effective and appropriate technologies that complement current teaching strategies to support learning.
5. Ensuring that our assessment and evaluation approaches support learning, program innovation and monitoring.
6. Promoting and supporting life-long learning for our teachers, professionals, and scientists.
7. Advancing our educational contribution to local and global communities.
8. Enhancing the recognition and value of teaching and education.

360 FACULTY
568 STUDENTS

Respondents were asked to rate, using a Likert scale, the current performance of the Faculty in the domain described in the goal and the priority or importance that should be given to each goal.

This online survey was sent to all faculty (June 27-July 18, 2016), with 360 survey respondents. This survey was also sent to all students in the Faculty of Medicine (Sept 12-Oct 7, 2016) and 568 responded. Respondents of both constituent groups (faculty and students) represented a broad distribution of faculty and learner profiles. Responses included many written comments, greatly enriching their respective contributions to our strategic planning process (see Table 1).

STRATEGIC PLANNING RESULTS

All eight areas were determined to be of importance by faculty and students alike, however inclusion of all eight goals into the strategic plan was deemed infeasible. Selection of the specific subset of goals that would become the primary focus for this plan was guided by reflection on the educational domains that currently lack adequate resources and need strategic investment, and would require compelling initiatives that can foster their ongoing development and advancement.

The goals must also be 'strategic'; a clear immediate advantage should drive their focus. Specifically, greater consideration was given to the goals that could position McGill as leaders in health science education, that were areas that were in great need of resource investment, and that would greatly enhance the learning experience. Following these principles, the SEE committee, in consultation with the Dean and the Dean's Operations Committee, selected three areas that were felt to be timely and of greatest strategic importance; i) learning-centred approaches and student engagement, ii) interprofessional and interdisciplinary approaches, iii) educational research and scholarship. These areas were felt to be of significant importance to the Faculty of Medicine as a whole, each requiring deliberate and timely new directions and innovation. At the same time, the SEE committee will monitor the annual progress of the remaining five goals cited above that were not selected as strategic goals (i.e. key operational goals: listed on page 10), so as to ensure that these areas strive for excellence and are also appropriately supported.

STAKEHOLDER ENGAGEMENT

Engagement of relevant stakeholders in the conceptualization of the Education Strategic Plan was essential in order to enrich our understanding of the educational needs, and also to benefit from the creative input of teachers and learners. Following review of the responses to the online surveys from faculty and students, the SEE committee noted that respondents from the basic science departments had a different pattern of responses. A focus group was therefore held on November 1, 2016, with faculty representatives from the Basic Science Departments and several members of the SEE committee, to better appreciate their particular educational needs and gaps. Three different brainstorming sessions were held in February 2017 (February 2 – Goal #1; February 8 – Goal #2; February 14 – Goal #3), with 15-20 representatives from key constituents of the educational enterprise, including students, faculty within the health professions programs and the basic science departments, clinician teachers, educational leaders and educational researchers. Each brainstorming session had different participants and focused on only one of the three goals (Table 2). The purpose was to generate possible concrete actions for each of these goals. The SEE committee worked to synthesize and triangulate the multiple sources of data collected over the past year, and the content of the Education Strategic Plan began to crystallize.

The Vice Dean - Education presented the concepts of the Strategic Plan to the faculty at large at the Medical Education Rounds on May 11, 2017. She also met with the Associate Deans of the Health Professions Programs (ISON, PGME, SCSD, SPOT, UGME) on May 29, 2017 to determine what resonates most with their educational program needs and strategic directions. Similarly, the Vice Dean – Education met with the Chairs of the Basic Science Departments on June 26, 2017 and with the Chairs of the Clinical Departments on July 6, 2017 to obtain feedback from the departmental leadership on the key components of the plan. The SEE committee held twelve 2-hour meetings over this period (March 2016-June 2017) to work on development of the strategic plan.

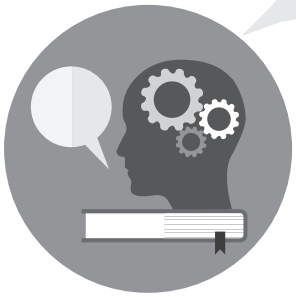
In addition, the SEE committee had two half-day retreats (July 4 and July 6) to focus specifically on articulating the advantages and disadvantages of two potential initiatives: creation of a Department of Health Science Education and creation of a Learning Institute. There was strong consensus to maintain these two concepts within the strategic plan. A draft document was then prepared with constructive input by the SEE committee (July 14, 2017) and was subsequently sent to members of the Centre for Medical Education and the Education Leadership Council for feedback. Feedback from leaders (meetings May-July) and oral and written feedback was then integrated into the final draft of this document. The Vice Dean – Education also met with members of the Centre for Medical Education on October 3, 2017, to further elaborate and discuss the strategic plan.

The strategic planning process maintained several organizational tenets and guiding principles:

- The needs and benefits to key stakeholders are paramount. The primary stakeholders are our learners and through them, the society at large.
- Equity across programs (health professions and basic sciences) should be valued and sought out.
- Transparency and stakeholder engagement is critical in developing and implementing the strategic plan.
- The process should be iterative with continuous monitoring and adjustments made to maximize outcomes and impact.
- The strategic plan should be nimble; flexible enough to add new directions, approaches or new goals in order to leverage new opportunities as they arise.

EDUCATION STRATEGIC PLAN:
Strategic Goals and Specific Objectives

OVERARCHING STRATEGIC GOALS



GOAL 1

The Faculty of Medicine embraces **evidence-based, learning-centred educational** approaches that foster deep learning and value student engagement in the education mandate.

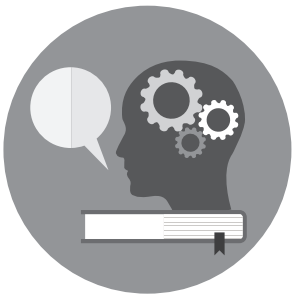
GOAL 2

The Faculty of Medicine fosters and encourages a culture that supports **interdisciplinary and interprofessional partnerships** underpinned by a collaborative educational environment.

GOAL 3

The Faculty of Medicine promotes **educational research and scholarship and innovation** in the health sciences in order to advance our understanding of teaching and learning and to inform policy and practice within and beyond the University.

SPECIFIC OBJECTIVES



GOAL 1

1A Ensure learners are contributing partners as members of all relevant committees related to the education mandate.

1B Support the use of evidence by our teachers on learning-centred approaches to guide educational activities in the classroom, laboratory and in the clinical setting.

1C Cultivate a supportive learning environment in clinical settings that optimizes educational experiences of learners and supports professional development of faculty members.

1D Support and recognize learner-driven initiatives and create new mechanisms for students to provide ongoing feedback on the quality of their education.

1E Support faculty-driven initiatives that enhance the learning experience and are linked to new scientific inquiry (inquiry-based teaching) and recognize teaching excellence that is learner-centred.

1F (Re)Design teaching and learning spaces to optimize the learning experiences, professional development and a sense of community of our students and our faculty.

"Teaching is listening, learning is talking"

-Deborah Meier

GOAL 2

2A Continue to develop and evaluate the benefit of an interprofessional education curriculum that aims to foster teamwork, mutual respect and professionalism in the classroom and in the clinical setting.

2B Develop new interdisciplinary educational initiatives at the undergraduate and graduate levels in the biomedical sciences, in response to student needs.

2C Provide teachers with training in interprofessional and interdisciplinary teaching and learning approaches and their value.

2D (Re)Design and utilize teaching and learning spaces, technologies and other infrastructure that promote interaction between learners and teachers across programs.

2E Recognize and reward leadership in interprofessional and interdisciplinary collaboration.

2F Ensure equitable access to services and centres that support educational excellence.

"None of us is as smart as all of us"

-Ken Blanchard

SPECIFIC OBJECTIVES

GOAL 3

3A Recognize, value and promote educational research, scholarship and innovation in the health sciences.

3B Facilitate interprofessional/interdisciplinary research collaboration in the university and in clinical settings, across the health professions and the foundational academic disciplines, including the traditional basic sciences.

3C Develop effective strategies that promote dissemination and uptake of educational research to inform practices and policy (i.e. knowledge translation and exchange).

3D Explore new organizational structures and investments that support educational research growth and development.

3E Strengthen our position as national and international leaders in educational research in the health sciences.

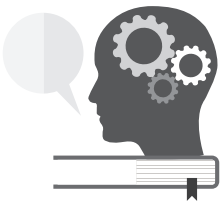
3F Develop our capacity to enable individual and collective leadership and innovation, in teaching and learning, research and scholarship, and knowledge translation of educational evidence.

> "In learning you will teach, and in teaching you will learn"
>
> -Phil Collins

OPERATIONAL GOALS

In addition, as referred to on page 6, a number of operational goals that were not selected for the faculty-wide Education Strategic Plan will be monitored on an annual basis, to ensure ongoing success and realization of our educational mission. The Faculty of Medicine has several initiatives as well as offices and centres that are focused on these particular areas of education. These include:

1. Integrate effective and appropriate technologies that complement current teaching strategies, to support learning.
2. Ensure that our assessment and evaluation approaches support learning, program innovation and monitoring.
3. Promote and support life-long learning for our teachers, professionals, and scientists.
4. Advance our educational contribution to local and global communities.
5. Enhance the recognition and value of teaching and education.



GOAL 1:

CONNECT with our learners... to support learning

The Faculty of Medicine embraces learning-centred education approaches that foster deep learning and values student engagement in the education mandate.

DEFINITION OF LEARNER-CENTRED APPROACHES

A learner-centred approach is an instructional perspective that implies that students are active participants in the learning process and are authentically engaged in the Faculty's education enterprise. Learner-centred approaches optimize the learning experience and are associated with rich, deep life-long learning. Surface learners focus on memorization of facts they must retain for the exam whereas deep learning requires greater understanding of the new knowledge and an ability to apply it in different contexts. Learners are more engaged and interested with deep learning approaches and the new information is more likely to be retained in the long term (Baeten et al, 2010; Freeman et al, 2014; Gow & Kember, 1993; Prosser & Sze 2014). A broad range of instructional perspectives should be considered in the implementation of learner-centred approaches to include universal design (i.e. teaching and learning spaces), active learning strategies and distributed learning approaches. We hope to embrace a **learning-centred** approach by carefully considering learner-centred pedagogical strategies in the context of an optimal learning environment.

Baeten M, Kyndt E, Struyven K, & et al. (2010) Using student-centred learning environments to stimulate deep approaches to learning: Factors encouraging or discouraging their effectiveness. Educational Research Review 5(3), 243–260.

Freeman S, Eddy SL, McDonough M et al. (2014) Active learning increases student performance in science, engineering and mathematics. PNAS, 111(23): 8410-15.

Gow L, & Kember D. (1993) Conceptions of teaching and their relationship to student learning. British Journal of Educational Psychology 63: 20–23.

Prosser M, & Sze D. (2014) Problem-based learning: student learning experiences and outcomes. Clinical Linguistics & Phonetics 28(1–2): 131–142.

An umbrella review (of systematic reviews) was conducted (Lemay et al, submitted) to synthesize the benefits of learner-centred teaching approaches in the health professions and health sciences education literature, as compared to traditional teacher-centred instructional approaches. Findings appear to demonstrate that small to moderate gains in knowledge retention are achieved, however greater gains are made in interpersonal and clinical skills, greater self-efficacy for clinical practice, and greater motivation within the learning environment. Studies using longitudinal designs suggest that learner-centred approaches are associated with more positive attitudes towards continuing professional development and long-term knowledge retention. A scoping review is now being undertaken to identify the key process variables fostering effective student-centred instruction in the health sciences (Lemay et al, submitted).

MARYELLEN WEIMER'S FIVE CHARACTERISTICS OF LEARNER-CENTRED APPROACHES

The SEE Committee has elected to apply the framework developed by Maryellen Weimer (Weimer, 2002) to enhance scholarly learner-centred practices by our faculty members. This body of work provides a pragmatic roadmap to learner-centred teaching that fosters student engagement and active learning.

The five key attributes are described below :

1. **Learner-centred teaching engages students in the hard, messy work of learning**
   Didactic, monologue-based learning is teacher-centred and learners remain passive in the learning process. With learner-centred approaches, the learner takes more responsibility in the learning, which is more self-directed, motivated and engaged, whereas the teacher acts as a guide.

2. **Learner-centred teaching includes explicit skill instruction**
   Learners are provided with explicit instruction on how to problem solve, gather and evaluate evidence, analyze arguments and generate hypotheses. Competency in critical appraisal skills is a focus of learning.

3. **Learner-centred teaching encourages students to reflect on what they are learning, and how they are learning it**
   Students reflect on what and how they are learning. They accept responsibility for how they are learning and become more self-aware as learners.

Lemay DJ, Thomas A, Torabi N, Doleck T, Majnemer A. (Submitted) Student-centered instructional approaches in biomedical sciences and health professions education: Umbrella review of the experimental literature.

Weimer, M. (2002) Learner-Centered Teaching: Five Key Changes to Practice, 1st edition. San Francisco: John Wiley & Sons, Inc. http://www.dartmouth.edu/~physteach/ArticleArchive/Weimer_excerpt.pdf

4. **Learner-centred teaching motivates students by giving them some control over learning processes**

   With a teacher-centred approach, the teacher works much harder than the learner to develop and prepare the course, deliver the content and evaluate the learner. Learner-centred teaching implies that the teacher shares the power with students (e.g. choice re timeline, criteria for assessment); the teacher becomes a learning facilitator who promotes student motivation and engagement. Students may lead aspects of the learning, teaching others. Learners may assess each other and themselves as part of the evaluation process.

5. **Learner-centred teaching encourages collaboration**

   Learner-centred strategies promote formation of a community of learners who learn from each other. Peer teaching and a shared commitment to learning are attributes of this approach.

APPLICATION TO HEALTH SCIENCE EDUCATION

Teacher-centred learning focuses on coverage of content driven by teacher preferences. The learner is passive in the acquisition of knowledge. Instructional methods that embrace a learning-enriched and learner-centred approach require the learner to be more actively engaged in the learning process. Approaches in this toolbox would include, among other strategies, blended learning, flipped classroom, case- or problem-based learning and use of simulation and virtual patients. Collaborative, team-based or peer-to-peer teaching strategies are often used in small group or breakout formats, so as to apply new knowledge to real-life contexts. The effectiveness of flipped classrooms and blended learning is linked to greater learner motivation and engagement (Chen et al, 2017).

Educating health professionals in medicine, nursing, occupational therapy, physical therapy and speech language pathology based on the highest standards of excellence is integral to the mission of the Faculty of Medicine. By utilizing scientifically-informed evidence-based content and applying state of the art teaching and learning methods, we are preparing our learners to best meet the health care needs of individuals and populations. There are numerous strengths in the current delivery of health professions education in our Faculty, particularly with respect to the evidence-based curricula and the teaching methods used. Our faculty should be recognized for their enormous dedication and commitment to training the next generation of health professionals, in spite of limited time, resources or compensation. Of note, the one-on-one relationship between clinical mentors and trainees is a core common component of our health professions education, and cannot be replaced by other methods. These role models maximize experiential learning through their supervision of clinical skills training and

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Chen F, Lui AM, Martinelli SM. (2017) A systematic review of the effectiveness of flipped classrooms in medical education. Medical Education 51: 585-597.

their support of personal reflection and integration of new knowledge.

Collaborative interprofessional education models are being increasingly integrated in the learning context to enhance teamwork and coordinated care. Furthermore, there has been greater adoption of learner-centred pedagogical approaches in our health profession programs (as per Maryellen Weimer's attributes above) that promote collaborative activity and authentic student engagement in learning, decision-based and case-based problem solving, collaborative learning and peer-to-peer learning strategies, as well as blended learning approaches.

As a result, there has been a gradual shift from teacher-centred didactic teaching in an amphitheatre to interactive approaches that require access to interactive learning classrooms, small group settings, simulation and practical lab spaces and informal, self-directed learning spaces for individuals and groups. Learner-centred approaches are necessary to ensure deep learning; so that our students and residents better understand and connect content, relate new learning to previous concepts and experiences, and apply new knowledge to different contexts in health care practice. Given the greater interest in and use of learner-centred approaches in the health professions programs, we aim to further support this development. Application of new technologies and access to teaching spaces that support engagement and active learning are two important directions to pursue.

Our current teaching spaces available are not only insufficient in terms of size and number of active learning classrooms and small group/practical lab spaces, but are also not optimally configured to meet the current and future health professions teaching and learning space needs. The highly distributed current spaces greatly limit interactivity and interprofessional learning among students, as well as synergies and collaboration among the schools.

Basic Science Departments in the Faculty of Medicine administer undergraduate and graduate programs in the biomedical sciences to thousands of students. Courses are generally delivered in a large amphitheatre or classrooms or in a laboratory setting. Increasingly, learner-centred approaches that promote student interactions and more active learning methods are being favoured. Indeed, a recent meta-analysis of active learning approaches in the STEM (Science, Technology, Engineering, Mathematics) streams demonstrates a significant improvement in final grades as compared to courses delivered using a traditional lecture format, and the latter is associated with a greater failure rate (Freeman et al, 2014).

Although learner-centred approaches are empirically validated as a preferred teaching practice, the ability to carry out more advanced inquiry-based pedagogical approaches that actively engage learners is greatly limited by current basic science teaching spaces. Specifically, there is a lack of access to active learning classrooms and small

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Freeman S, Eddy SL, McDonough M et al. (2014) Active learning increases student performance in science, engineering and mathematics. PNAS 111: 8410-8415.

multifunctional classrooms that promote active collaborative learning (Freeman et al, 2014). Furthermore, faculty members may benefit from Faculty Development centred on promoting successful application of learner-centred approaches for different class sizes.

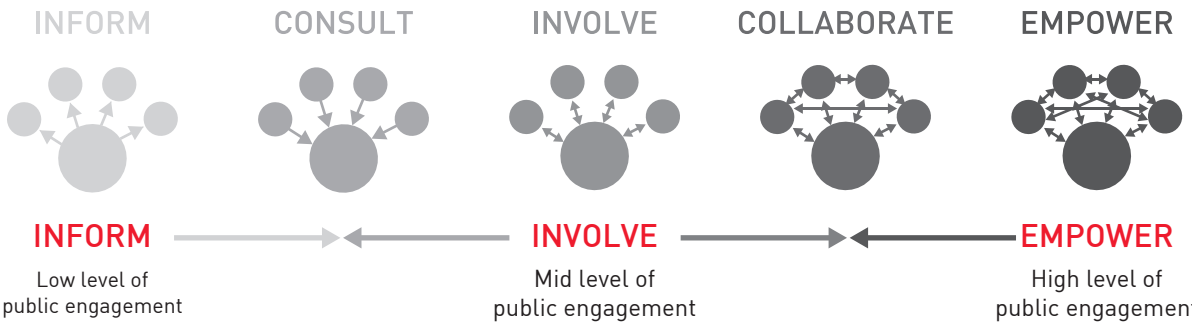
For graduate students, the one-to-one mentorship received from supervisors facilitates a learner-centred approach. Nonetheless, students must still acquire learner-centred deep learning to include critical appraisal skills, reflection and interpretation of research findings and its relationship to existing evidence, and self-directed learning strategies. Faculty development will be necessary to support this approach.

Learner-centred strategies can also be extended to life-long learning to include our faculty members (health professionals and health scientists). These instructional perspectives can thus be extended to activities across the continuum, to include Faculty Development and Continuing Professional Development.

> "Tell me, I forget. Show me, I remember.
> Involve me, I understand."
>
> -Confucius

ENGAGEMENT OF LEARNERS

Applying the concepts of Arnstein's Ladder of Participation (Arnstein, 1969), the Faculty of Medicine hopes to shift to a reduced emphasis on telling students about the curriculum, learning requirements and token participation on committees to a partnership model. In this context, teachers maintain the authority over content and ultimate responsibility for educational programs; however, students are consulted and listened to. Greater student engagement in the educational enterprise is expected to harness the enthusiasm and creative energy of learners, and enhance the learning experience for students and professors.



(International Association of Public Participation)

Arnstein SR. (1969) A ladder of citizen participation. Journal of the American Planning Association 35(4): 216-224

We will capitalize on the newly regrouped student constituencies (program-specific associations) from healthcare related professions called the McGill Association of Students in Healthcare (MASH). They are advocating for interprofessionalism and are seeking opportunities to collaborate in learning, research and social events. They provide a collective voice for our learners. We can use MASH as a vehicle to engage student representatives in our educational initiatives. The student associations within the biomedical sciences (undergraduate and graduate) are now mobilizing to create a similar interdisciplinary regrouping, and we are committed to working with this new grouping as well, to engage our students in our educational initiatives.

ACTION PLAN: KEY EMERGING THEMES

A 2-hour brainstorming session was held February 2, 2017, that included representatives of the basic sciences faculty, health professions educators, education researchers, clinicians and administrators from clinical sites and students (n=20; Table 2). Several key themes emerged as potential actionable areas for Goal #1.

- Learning culture is influenced by the physical environment: space should align with philosophy; synergies are enhanced through flexible spaces (health professions and basic sciences).
- Technology should be leveraged and used (e.g. blended learning) for a greater learning experience.
- Student engagement should be authentic; valued, rewarded and influential.
- A safe, supportive learning environment should be promoted in the clinical settings.
- Teaching quality is not sufficiently valued in promotion and tenure considerations or in the distribution of resources by the Faculty and University.
- Basic science space needs for teaching are not currently being addressed.
- Doing it right: Contributing to all elements of the education continuum from generating evidence, training teachers, measuring benefit, and rewarding accomplishments. Support from the Centre for Medical Education, Faculty Development and the Assessment & Evaluation Unit will be important.

Actions and specific tactics to support this strategic goal were documented in the brainstorming session, and were collected in the Appendix.

GOAL 2:

COLLABORATE across professions ...across disciplines

The Faculty of Medicine fosters and encourages a culture that supports interdisciplinary and interprofessional partnerships underpinned by a collaborative educational environment.

DEFINITION OF INTERPROFESSIONAL AND INTERDISCIPLINARY PARTNERSHIPS

Interprofessional Education (IPE) refers to occasions when students from two or more professions in health and social care learn together during all or part of their professional training with the objective of cultivating collaborative practice for providing client- or patient-centred health care. IPE provides opportunities to learn with, from and about each other. The goal is to promote effective teamwork (collaborative interprofessional practice) so that care is coordinated, comprehensive and of the highest quality (Gilbert, 2005; Nelson, 2017).

Interdisciplinarity involves combining two or more academic disciplines into one activity (e.g. a research project). It is about creating something new by crossing boundaries, breaking silos and thinking across disciplines. Interdisciplinary teaching is a method used to teach across different curricular disciplines by integrating broader perspectives, methods and frameworks on a subject. This allows for a richer and comprehensive understanding of the topic of interest, and better prepares the learner to tackle real-world problems (Sung, 2003; Tadmor, 2005).

Gilbert, JHV. (2005) Interprofessional Education for Collaborative, Patient-Centred Practice. Nursing Leadership 18(2): 32-28.

Nelson S, White CF, Hodges BD et al. (2017) Academic Medicine 92(5):709-716.

Sung NS, Gordon JI, Rose GD et al. (2003) Educating Future Scientists. Science 301(5639): 1485.

Tadmor B, Tidor B. (2005) Interdisciplinary research and education at the biology–engineering–computer science interface: A perspective. Drug Discovery Today 10(17): 1183-1189.

A CULTURE SHIFT

This strategic goal aims to support a culture of interprofessional and interdisciplinary partnerships underpinned by a collaborative educational environment. The current academic leaders (Associate Deans) of the health profession programs have demonstrated a shift in belief and behaviour consistent with authentic interprofessional collaboration and teamwork. This is endorsed with the understanding that through interprofessional collaboration, "learners/practitioners seek out, integrate and value, as a partner, the input and the engagement of patient/client/family/community in designing and implementing care/services" (National Interprofessional Competency Framework).

Health sciences educational research is underpinned by a variety of learning theories that can inform practice. An important theoretical framework that has emerged and was spearheaded by leaders at McGill (Cruess et al, 2017) is the concept of communities of practice, which can be interwoven into actions within our strategic plan. It is perhaps most compelling in its application to interprofessional learners who are developing their own individual professional identities while simultaneously learning to collaborate across professions to optimize patient-centred care. This theoretical model capitalizes on the social nature of learning and promotes authentic active participation. Communities of practice enable educators to incorporate role modelling and mentorship as well as reflection and experiential learning. This framework also provides a theoretical underpinning to support the curricular competencies needed, as defined by the National Interprofessional Competency Framework.

The Lancet Commissions on "Health professionals for a new century: Transforming education to strengthen health systems in an interdependent world" lays out a number of reforms for the professional education system to consider, for the best health outcomes for patients (Frenk et al, 2010). A transformative learning approach that harnesses interdependence is the focal point of this vision, whereby professional silos are broken down, and a set of common attitudes, values and behaviours accompanied by task shifting and task sharing are reinforced for more effective health care teams.

The new Office of Interprofessional Education has been given the mandate to develop a core curriculum for students in medicine, nursing, occupational therapy, physical therapy, speech language pathology and also dentistry (while with the medical students). The curriculum embraces the National Interprofessional Competency Framework put forward by the Canadian Interprofessional Health Collaborative (2010).

Cruess RL, Cruess SR, Steinert Y. (2017) Medicine as a Community of Practice: Implications for Medical Education. Academic Medicine. 2017 Jul 25 Epub ahead of print.

Frenk J, Chen L, Bhutta ZA et al. (2010) Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. Lancet 376: 1923-1958.

Canadian Interprofessional Health Collaborative. (2010) A National Interprofessional Competency Framework. Vancouver, BC.

Interprofessional collaboration is achieved through the realization of role clarification, team functioning, interprofessional conflict resolution and collaborative leadership. These elements are supported by two key components: i) patient and family-centred care, and ii) interprofessional communication. Thus far, 3 courses (IPEA 500, 501, 502) have been developed as part of the core curricula of the health professions programs. The intention is to continue to build on this early success in terms of further curriculum development. In addition, other learning strategies may be explored using online technologies, virtual patients and simulation, team mentorship and opportunities for IPE in the clinical setting.

In recent years, the leadership of the Faculty of Medicine has worked to enhance the partnerships with the two McGill-affiliated CIUSSSs and the MUHC, as related to educational needs and initiatives. The Directors of Education have been integrated into several of our university committees (e.g. Education Leadership Council, Learning Environment Action Panel) and the Vice Deans and Associate Deans have in turn been invited to participate in their academic committees. Moving forward, it will be critical to work in partnership to develop interprofessional education initiatives in situ, in ways that meet our institutional partners' needs.

There is a growing interest in supporting interdisciplinary educational experiences for students in the basic and clinical sciences. Several educational champions are exploring new pedagogical innovations, by bringing students from different disciplines together, to learn from each other. Interdisciplinary exposures for graduate students could include, for example, pairing trainees with clinicians or health professions trainees in the health area of interest so that they can better appreciate the potential impact and relevance of their research focus. Graduate students could partner with health professions students to conduct translational research projects, as part of their training experience. The goal of these partnerships would be to connect prior learning to new contexts (i.e. situated learning, from research to practice). This is of relevance to undergraduate and graduate students, to learners in the basic sciences as well as graduate students in the clinical departments, and to all faculty members.

New interdisciplinary courses and degree programs could be supported. Exposing doctoral and postdoctoral students to interdisciplinary curricula that prepare them for non-academic career paths in industry, government or research management could be of interest, and is timely, given the lack of academic positions. The Desjardins Centre for Advanced Training at the Research Institute of the McGill University Health Centre has expressed an interest in partnering with us to successfully support diverse career pathway opportunities for graduate trainees in the life sciences.

Canadian Interprofessional Health Collaborative. (2010) A National Interprofessional Competency Framework. Vancouver, BC.

National Competency Framework (Canadian Interprofessional Health Collaborative, 2010)

BRAINSTORMING THE ACTION PLAN: KEY EMERGING THEMES

A 2-hour brainstorming session was held February 8, 2017, that included representatives of the basic sciences faculty, health professions educators, education researchers, clinicians and administrators from clinical sites, and students (n=14). Several key themes emerged as potential actionable areas for Goal #2.

- Important to focus on the patient as the unifying element/outcome.
- Interdisciplinary research is easier (more familiar) than interdisciplinary teaching.
- Students need to develop skills in IPE/IDE through collaborative problem-solving, communication, teamwork; similarly faculty will require Faculty Development to support IPE/ID teaching.
- This will require a culture change; there may be resistance.
- Leverage successes in key departments; to influence other departments.
- Learning spaces influence the opportunities and extent of authentic cross-talk.

Actions and specific tactics to support this strategic goal were documented in the brainstorming session, and were collected and appear in the Appendix.

GOAL 3:

CREATE and use new knowledge

...to influence through innovation

The Faculty of Medicine promotes educational research and scholarship in the health sciences in order to advance our understanding of teaching and learning and to inform policy and practice within and beyond the University.

EDUCATIONAL RESEARCH, SCHOLARSHIP AND INNOVATION

Educational research has all the elements of any scientific research discovery, and thereby follows Glassick's criteria for scholarship (Glassick, 2000). These include clearly defined research questions and well-articulated goals, adequate preparation through synthesis of existing knowledge and development of a compelling rationale for the research, determination of the appropriate methods to answer research questions, analysis and presentation of the results, and finally, a reflective critique that is meant to contribute to the knowledge base with the intention of having an impact on education. In the case of educational research, topics focus on aspects of education such as instructional approaches, teacher training, student learning quality and outcomes. The global aim of educational research is to inform teaching and learning practices and policies (Steinert & Snell, 2011).

In 1990, Charles Boyer, in his seminal paper 'Scholarship Reconsidered: Priorities of the Professoriate' proposed an expanded definition of scholarship based on four

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Glassick, CE. (2000) Boyer's Expanded Definitions of Scholarship, the Standards for Assessing Scholarship, and the Elusiveness of the Scholarship of Teaching. Academic Medicine 75(9):877–880.

Steinert Y & Snell L. (2011) Educational innovation and scholarship: From curriculum design to implementation. In J Sherbino and J Frank (Ed), Educational Design: A CanMEDS Guide for the Health Professions. Ottawa, Royal College of Physicians and Surgeons of Canada, 87-92.

professorial functions: scholarship as discovery, integration or synthesis, application, and teaching (or dissemination) (Boyer, 1990). The scholarship of discovery refers to the conduct of original research, to include theory formation. The scholarship of integration involves making connections across the disciplines so as to illuminate how evidence can be synthesized and interpreted so as to facilitate use. The scholarship of application refers to the uptake and use of evidence to inform practice. Designing innovative instructional materials or a novel faculty development program are examples of the scholarship of integration and application (Steinert and Snell, 2011). The scholarship of teaching occurs through application of evidence-based scholarly work in teaching as well as effective analysis and dissemination of the impact (Fincher and Work, 2006; Steinert & Snell, 2011). As Glassick (2000) has said, "teaching becomes scholarship when it is made public, is available for peer review and critique, and can be reproduced and built on by other scholars".

"Broadly considered, scholarship in education can involve the discovery of new knowledge (traditional research), the integration or application of existing knowledge to new areas, and/or teaching." (Simpson and Fincher, 1999, page 1297).

Innovation is a process that involves translation of an idea into a product or service that creates value for the consumer, and is meant to satisfy a need or gap. (http://www.businessdictionary.com/definition/innovation.html). Innovation in higher education is meant to transform the way we educate, by bringing together information, imagination and initiative, with the purpose of enhancing the teaching and learning experience and outcomes. As part of this strategic plan, we will harness the intelligence and creativity of our talented faculty and students in order to advance our understanding of teaching and learning and to inform policy and practice within and beyond the University (i.e. Goal #3). A culture of innovation will be strived for, by: i) bringing people together from different disciplines, ii) understanding and engaging our learners, iii) being open to new ideas, iv) clarifying the problems we wish to address, and v) fostering and rewarding innovation. There are strong traditions and confining regulations and structures within universities that can limit innovation. Nonetheless, innovation in education can occur that improve our products or processes, but requires empathy, imagination, collaboration, communication and persistence. Processes such as design thinking (e.g. understanding what learners need and redesigning how we respond to these needs), sustaining innovation (e.g. modifying our systems to improve teaching and learning) and disruptive innovation (e.g. discovering new ways to conduct our core business for greater benefit) can be applied to our context to promote educational excellence (Swanger, 2016).

Boyer EL. (1990) Scholarship Reconsidered: Priorities of the Professoriate Princeton: Carnegie Foundation for the Advancement of Teaching.

Fincher, RE & Work J. (2006) Perspectives on the scholarship of teaching. Medical Education 40(4): 293-5.

Simpson DE, Fincher RME. (1999) Making a case for the teaching scholar. Acad Med 74:1296–9.

Swanger, D. (2016) Innovation in Higher Education: Can Colleges Really Change? https://www.fmcc.edu/about/files/2016/06/Innovation-in-Higher-Education.pdf

A TIPPING POINT

A recent study (Doja et al, 2014) concluded that the highest relative productivity worldwide in medical education research is in Canada, with Montreal being the second most productive city in Canada in terms of relative publication output. Within the Faculty of Medicine, we now have many faculty members with PhDs in education or social science-related fields who are conducting educational research. We have many more with Master's degrees who also pursue scholarly work in educational research, and we are continuing to recruit and train others with graduate degrees in education or related fields. The international stature of the Centre for Medical Education continues to grow, and the scope and breadth of educational research is expanding. Therefore, the Faculty of Medicine at McGill University now has a critical mass of expertise and recognition to leverage for future expansion of the educational research mandate.

It is estimated that there is a 17-year gap between the creation of new scientific knowledge and its uptake and use by the appropriate knowledge user (Grant et al, 2003). Strategies may therefore need to be developed to increase the pace of uptake of new knowledge (i.e. knowledge translation - implementation strategies), so as to identify the nature and magnitude of knowledge to action gaps and design tailored interventions to bridge these gaps. In the medical education literature, this is referred to as paying greater attention to the pole of 'production for users' (those that can use the research), as opposed to 'production for producers' (other researchers) (Albert et al, 2007).

Key to our success will be capitalizing on our recently strengthened partnerships with the Directors of Education of the McGill–affiliated CIUSSSs and MUHC. Our intention is to work together to be responsive to their knowledge needs with respect to evidence-based pedagogical strategies that are appropriate for clinical environments. There is also greater scientific evidence for strategies to guide implementation efforts for knowledge translation and exchange to enable more rapid use of research by educators, whether in the classroom or in the clinic, and we need to build on this emerging evidence.

Furthermore, we have several successful examples of embedding scholarship within educational service, such as the Assessment and Evaluation Unit and the Steinberg Centre for Simulation and Interactive Learning for health professions training. Partnering clinicians and education researchers may enable a more rapid response to the educational knowledge needs that are apparent in the clinical context, and may facilitate translation of literature into practice.

Albert M et al. (2007) Research in medical education: Balancing service and science. Advances in Health Sciences Education, 12:1-3-115.

Grant J, Green L, Mason B. (2003) Basic research and health: A reassessment of the scientific basis for the support of biomedical science. Resident Evaluation 12:217–24.

The Centre for Medical Education is a key entity with regards to supporting and advancing research and scholarship in health science education. In addition, other hubs of educational research activities exist within departments and schools that are discipline-specific. Several departments have developed graduate programs with an education stream, relying on coursework within the Faculty of Education. We are currently collaborating with the Faculty of Education to renew our Master's degree and to develop certificates related to health sciences education. There is a growing interest on the part of health professions trainees and clinicians to pursue graduate degrees in health sciences education.

It may therefore be opportune to harness our research expertise and our partnership with the Faculty of Education and pursue development of a new Department or Institute in Health Sciences Education. This would enable faculty members with PhDs in Education and other related disciplines to supervise graduate students in their field of interest, would attract international doctoral trainees and postdoctoral fellows, and would likely necessitate new tenure track positions in Health Sciences Education. We will carefully consider multiple structures together with stakeholders, to ensure that any reorganization of structure serves to build on our successes and further strengthen the educational enterprise.

In addition to considering new structures that can foster advanced training in health science education and that can promote greater collaboration across silos, additional strategies that promote research and scholarship would need to be considered. Examples of resource support might include i) fellowship training opportunities, ii) stipends for clinicians across health professions that support engagement in educational scholarship, iii) new tenure track positions in health science education, iv) resource support for knowledge translation efforts, v) seed funding for educational innovation in clinical and university contexts, and vi) greater recognition of educational scholarship as part of promotion criteria.

Strategies to enhance internal recognition of our expertise and successes in educational scholarship are also needed. A number of potential strategies are proposed in the Appendix (examples of actions/tactics). Nonetheless the ongoing concern with respect to a lack of adequate recognition of teaching innovation and educational scholarship warrants further discussion with stakeholders. Impacts on educational excellence and success stories need to be better highlighted using communication strategies within the Faculty and University, and more broadly.

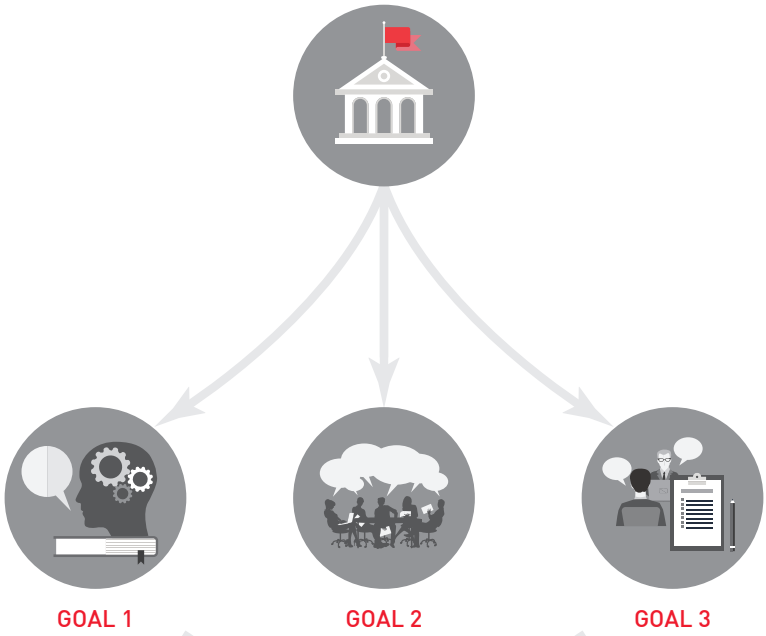
BRAINSTORMING THE ACTION PLAN: KEY EMERGING THEMES

A 2-hour brainstorming session was held February 14, 2017, that included representatives of the basic sciences faculty, health professions educators, education researchers, clinicians and administrators from clinical sites and students (n=13; Table 2). Several key themes emerged as potential actionable areas for Goal #3.

- Legitimacy of educational research; concerns about whether it is recognized and valued by faculty and university leadership and why it is important. There is a need to increase recognition and value of educational research and scholarship (i.e. individuals, novel programs and initiatives, new collaborations).
- Basic scientists are unsure about how to embed educational research within their academic activities, particularly how to assess whether pedagogical approaches are effective for learning. They lack knowledge, expertise and resources to support educational research. This may be applicable to clinicians as well.
- Health Sciences Education has become a discipline; however, the organization of the Faculty of Medicine doesn't reflect this.
- Student perspective - would welcome opportunities for broader exposure to advances in teaching and learning.
- There has been diverse uptake of educational scholarship. We need a collective vision on how we can work together for educational excellence and scholarship. Need a communications strategy about education; recommendation to have an annual conference on health professions education research. Sharing across silos would require a culture shift.
- Need to encourage a broader scope of educational research by bringing in new players.
- Clinical sites are reactive to new educational requirements; they need to be proactive and be more involved in the process to include scholarship activities.

Actions and specific tactics to support this strategic goal were documented in the brainstorming session, and appear in the Appendix.

STRATEGIC INITIATIVES WILL REQUIRE STRATEGIC INVESTMENTS



STRATEGIC INVESTMENTS

- FACULTY DEVELOPMENT THAT SUPPORTS EDUCATIONAL EXCELLENCE
- INTERPROFESSIONAL AND INTERDISCIPLINARY EDUCATION INITIATIVES
- CREATION OF A DEPARTMENT AND/OR AN INSTITUTE OF HEALTH SCIENCES EDUCATION
- LEARNING SPACES THAT ALIGN WITH OUR EDUCATIONAL VISION

FACULTY DEVELOPMENT THAT SUPPORTS EDUCATIONAL EXCELLENCE

The Faculty Development Office in the Faculty of Medicine aims to assist faculty members in their roles as educators, researchers and leaders, using a broad range of methods to achieve these goals. The Associate Dean of Faculty Development is supported by a diverse group of educators with expertise in the development and delivery of faculty development programs and activities. The office coordinates a variety of faculty development endeavours, primarily in collaboration with the Centre for Medical Education and in consultation with other Associate Deans, Directors and Chairs in the Faculty of Medicine. A range of competencies that guide the program blueprint include, for example, designing and planning learning experiences, enhancing teaching skills and facilitating learning, assessing learning, conducting educational research and gaining educational leadership skills. Various teaching and learning strategies are favoured according to context, relevance and feasibility and include workshops, seminars and rounds, discussion groups, informal consultations and mentorship (Steinert, 2010).

Recently there has been an increasing requirement for faculty development activities in a number of areas to include: i) clinical teaching by healthcare practitioners with a need for more decentralized, local, work-based faculty development that is embedded in communities of practice, ii) growing expectations for, and acceptance of, basic pedagogical training for all new faculty members (health professions and biomedical sciences), iii) teaching more complex curricula (e.g. competence by design) while also enhancing the learning environments in which our learners are taught, iv) a gradual culture shift promoting interprofessional and interdisciplinary partnerships and collaborations, v) faculty-wide interest in learning about strategies that will effectively translate new research knowledge (i.e. knowledge translation) so as to improve practice and patient-centred care.

Undoubtedly, with this ambitious Education Strategic Plan, there will be a growing need to train faculty in the application and delivery of learner-centred approaches, learner engagement strategies, and interprofessional and interdisciplinary education practices. Knowledge translation of educational research into frontline educational practices will also require faculty development support. Faculty development will need to expand to meet these growing needs in multiple learning contexts (e.g. classroom, research laboratory, clinical setting). This would include in situ, team-based faculty development initiatives to support the interprofessional curriculum as well as team-based collaborative research training models.

Steinert Y (2010). Faculty Development: From workshops to communities of practice. Medical Teacher 32(5): 425-428.

INTERPROFESSIONAL AND INTERDISCIPLINARY EDUCATION INITIATIVES

The Office of Interprofessional Education is comprised of a hub of experts in interprofessional education and collaborative clinical practice. The Office provides a core course curriculum to health professions students, continuing faculty and professional development, and consultation to stakeholders in interprofessional education (IPE) and models and materials for interprofessional collaborative practice (IPCP). Furthermore, the office also contributes scholarly work in this area. Currently, a primary focus of the office is the establishment of a curriculum for all pre-licensure health professional students in the Faculty of Medicine. The content incorporates interprofessional learning activities at formative stages of the learning trajectory to address all the competencies for interprofessional collaborative practice embedded in the Canadian Healthcare Collaborative Framework. The Office of IPE is currently conducting a strategic plan and will undergo an external review in the Fall of 2017.

The Office's strategic vision is aligned with the three goals of the Education Strategic Plan and the proposed action plan includes a number of new initiatives that will enhance deep learning to enable authentic teamwork and more effective interprofessional collaborative practice. Examples of initiatives that could be supported, as part of this Education Strategic Plan, include: i) an interprofessional group mentoring program facilitated by IPE faculty that follows a format similar to Osler Fellows, ii) working with TLS, MedIT and Molson Informatics to optimize use of technologies and online tools, such as an electronic portfolio of IPE learning activities and online learning modules and debriefing, iii) development of a rigorous assessment and evaluation plan that will inform and improve the quality of the program, iv) expanded faculty development training in IPE to augment the pool of experts that can support interprofessional teaching and learning.

Currently, there are no specific services offered by the Faculty of Medicine to support pedagogical advancement in interdisciplinary education (IDE). A first step might be to identify educational champions in each of the basic science departments (e.g. Director of Education for each department) and bring them together on a regular basis to work on strategic initiatives that support interdisciplinary education approaches, both for the undergraduate and graduate programs. Inter-departmental teaching and learning initiatives could be fostered in this way. Furthermore, this leadership team could consult with Teaching and Learning Services, the Assessment & Evaluation Office and the IPE Office to learn about appropriate technologies and tools to support IDE. If warranted, an Office of IDE could be considered.

CREATION OF A DEPARTMENT AND/OR AN INSTITUTE OF HEALTH SCIENCES EDUCATION

In the various brainstorming sessions and in comments from our online survey, there was repeated emphasis on the need to consider the development of a new Department focused on the academic discipline of health science education. As a Department, graduate degree programs (e.g. Master's, PhD, certificates) could be offered and administered within the Faculty of Medicine. Currently, faculty members interested in pursuing higher education in this field must either pursue a more generic graduate degree in the Faculty of Education, or seek training elsewhere. We continue to partner with the Faculty of Education to develop graduate training opportunities related to health professions education. Nonetheless, our Faculty is restricted in its ability to attract graduate students in this field of training, limiting our productivity and growth in educational research. We currently have close to a dozen faculty members with doctoral level training in Education and related fields, and others in progress, and many more with Master's degrees. Creation of a department would augment opportunities for these faculty members to supervise graduate students in their field. A Department in Health Science Education would undoubtedly enhance visibility of education and research activities within the Faculty of Medicine as well as internationally. Large scale structural change, such as that involved in the creation of a Department, necessitates careful consideration of strengths and weaknesses, and active participation and discussion with a variety of key stakeholders. Focusing on what is value-added as a primary motivation for the possible creation of a Department, we will need to further explore whether this or other structures or configurations might better meet these same objectives.

A second concept that emerged from discussions within the Steering Educational Excellence (SEE) Committee was the notion of a Learning Institute. Creating an institute generally serves to bring together or organize a grouping of people so as to raise its profile and visibility, foster collaborations across units that exist in relative silos, and provide infrastructure that is of mutual benefit. It can be a vehicle that fosters innovation by facilitating interdisciplinary collaboration, communication and creative problem-solving. An institute could bring together the academic elements (teaching, research, service) of the Faculty of Medicine's education mandate to include: i) formal teaching and learning initiatives (courses and degrees related to the discipline of health science education; may include a departmental structure), ii) educational research initiatives, scholarship training and knowledge translation (Centre for Medical Education), iii) offices and centres supporting educational excellence (our ten offices/centres). The institute concept could bring together an administrative hub that would support the education mission. For example, there could be a communications/special events officer (public relations, media, social media, event planning) and fundraising officer (with advancement office). Cross-talk and partnerships (across departments/schools) would be facilitated by the institute through

workgroups, with the intent of fostering innovation and educational advancement. An institute could attract donor support to fund a range of strategic initiatives; some examples could include:

- Visiting professorships; scholarships for graduate students
- Pilot projects focused on educational innovation (research to practice)
- Release time (or teaching assistants) to develop new learner-centred courses
- Strategic initiatives (interdisciplinary, multi-sectorial)
- Annual conference
- Online learning/technology hubs

LEARNING SPACES THAT ALIGN WITH OUR EDUCATIONAL VISION

Our teaching and learning spaces should be a physical manifestation of our educational vision. The **Health Professions Education** (HPE; medicine, nursing, occupational therapy, physical therapy, speech language pathology) programs have grown substantially in size over the last decade, now close to 4000 learners. Correspondingly, there is a wide diversity of new space needs beyond the current footprint. Alignment of the learning spaces with the respective new and emerging curricular requirements of the five professional programs has not been realized at McGill University. New teaching methods (e.g. blended learning, flipped classrooms, decision-based and case-based approaches, reflective learning, collaborative peer-to-peer strategies, virtual patients and high/low fidelity simulation) require a reconfiguration of space in ways that meet the overlapping needs of the 5 HPE programs. Interconnectivity of learning spaces across our HPE programs that promote cross-talk and interprofessional education opportunities is wholly lacking. Availability and integration of technologies that enhance the learning experience is also critical.

To educate future health care professionals based on the highest standards of educational excellence, the curricula must align with the physical space for teaching and learning. A networked learning landscape, as described by the International Association for Medical Education (Nordquist et al, 2016), provides a holistic view of the inter-connectedness of the formal and informal learning spaces and environment. Specifically, this concept examines how learning, information technology and use of space are intertwined. These guidelines for health professions endorse a transformation from didactic to more collaborative, team-based learning approaches

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Nordquist J, Sundberg K, Laing A. (2016) Aligning physical learning spaces with the curriculum: AMEE Guide No. 107. Medical Teacher, 38:755-68.

http://nsse.indiana.edu/2013_Institutional_Report/pdf/Benchmarks_to_Indicators.pdf
http://www.mcgill.ca/tls/files/tls/principles-for-design-of-teaching-learning-spaces-2017.pdf

Freeman S, Eddy SL, McDonough M, et al. (2014) Active learning increases student performance in science, engineering and mathematics. PNAS 111: 8410-8415.

that are supported by technologies. Classrooms should provide a variety of social and learning experiences, in line with social constructivism whereby knowledge is constructed through the interaction with others. Ideally, teaching and learning spaces should be multi-use (e.g. moveable furniture, rotating chairs, room dividers, among other features). This interconnectivity of space among the programs, in line with new curricula and pedagogical approaches, will create efficiencies, promote synergies and collaboration and foster interprofessionalism.

Similarly, the **Basic Science Departments** in the Faculty of Medicine teach over 3000 undergraduate students (≈1800) and graduate students (≈1300), and train approximately 500 postdoctoral fellows at McGill University. It is well recognized that active learning approaches optimize deep learning and academic performance of learners (Freeman et al, 2014). Current teaching spaces for the undergraduate and graduate programs do not favour interactive collaborative learning approaches. Most of the teaching laboratories are poor in terms of accessibility, space configuration and equipment, impairing learners' abilities to acquire skill competencies. Teaching spaces that optimize learner interaction and collaborative problem-solving are deficient. There is an urgent need to address the following gaps in terms of teaching space requirements for the biomedical science curricula: i) active learning classrooms, ii) small multifunctional classrooms with modifiable furniture and layouts (break out rooms and/or rooms for smaller classes), iii) multi-discipline shared wet-laboratory teaching space, iv) dry laboratory spaces for undergraduate and graduate programs (larger computer labs).

Currently there are two workgroups focused on the urgent teaching space needs for the Health Professions Programs and for the Basic Science Programs. Two detailed reports will be submitted this fall to clarify the urgency and rationale for new teaching spaces, and to highlight the current gaps and future needs. These collective space needs will need to be addressed to ensure that our competitive programs can deliver state of the art curricula to our students, utilizing best practices in teaching and learning. Any new teaching spaces should follow the design principles put forth by Teaching and Learning Services at McGill University (Finkelstein et al, 2016).

Specifically, design principles should ensure high academic challenge (deep learning, reflective and integrative learning), learning opportunities with peers (active, collaborative learning), quality experiences with faculty (effective teaching practices, student-faculty interactions) and an optimal campus environment (supportive, flexible environment).

Finkelstein A, Ferris J, Weston C et al. (2016) Research-informed principles for (re)designing teaching and learning spaces. Journal of Learning Spaces 5(1): 26-40.

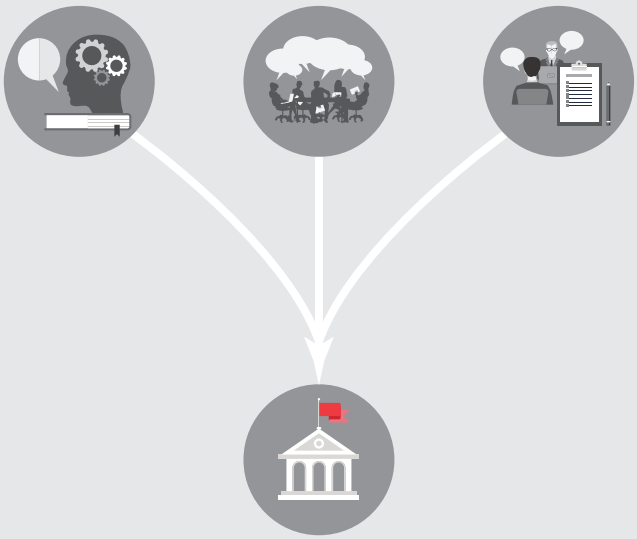
EDUCATION STRATEGIC PLAN:
Key Strategic Initiatives

1 The development of a faculty development program on learner-centred pedagogical approaches for the health professions and for the basic sciences.

2 The elaboration and implementation of an advanced curriculum in interprofessional education, complemented by a faculty development program for the university and clinical environments.

3 The conceptualization and development of interdisciplinary certificates for non-academic career tracks (government, industry, research management) for graduate trainees in the basic sciences.

4 The development and inauguration of a Learning Institute in Health Sciences Education, and the development of graduate degrees in Health Science Education.



The goals of the Education Strategic Plan link back to the Faculty of Medicine's vision:

"Healthier societies through education, discovery, collaboration and clinical care."

As such, the ultimate goal for the Education Strategic Plan is to improve patient-centred care and to promote a healthy society, by enhancing teaching expertise and learning experiences, supporting and translating educational research and building a culture of collaboration and teamwork.

TABLE 1

FACULTY SURVEY – PROFILE OF RESPONDENTS (n=360)
53.9% male
10.6% Faculty Lecturer/Course Lecturer
31.9% Assistant Professor
26.9% Associate Professor
26.1% Full Professor
3.6% Unranked
0.8% Emeritus Professor
I spend →50% of my work week:
53.1% at a health care (hospital or other) setting
15.0% at a research institute within a health care setting
13.3% at the university, in a health professions program (schools or UGME/PGME)
9.2% at the university, in a basic sciences department
9.4% at the university, at a centre or institute
Teaching tasks:
58.6% small group teaching, health professions programs
58.3% classroom teaching, health professions programs
56.7% clinical/bedside teaching
48.9% graduate supervision
30.6% continuing health professions education
29.2% classroom lecturing, non-health professions programs
12.2% small group teaching, non-health professions programs
STUDENT SURVEY – PROFILE OF RESPONDENTS (n=568)
70% female
63.6% in the first half of their program
158 medical students; 103 nursing; 34 occupational therapy; 28 speech language pathology; 25 residents; 21 physical therapy
86 PhD; 49 MSc; 46 BSc; 18 other

TABLE 2

LAST NAME	FIRST NAME	TITLE
TABLE 2A: BRAINSTORMING SESSION 1 PARTICIPANTS – Student Engagement and Learning-Centred Education (Feb. 2, 2017)		
Antonacci	Rosetta	Nurse Manager, Clinical Teaching Unit, St. Mary's Hospital (CIUSSS-Ouest-de-l'Île-de-Montréal) & Faculty Lecturer, Ingram School of Nursing
Bhanji	Farhan	Associate Professor, Pediatrics
Boudreau	Donald	Interim Director, Centre for Medical Education & Associate Professor, Dept. of Medicine
Chassé	Kathleen	Coordonnatrice en réadaptation, CIUSSS-Ouest-de-l'Île-de-Montréal (St. Anne's Hospital)
Côté-Leblanc	Geneviève	Chef du transfert des connaissances et de l'innovation, CIUSSS-Ouest-de-l'Île-de-Montréal
Davis	Elaine	Associate Dean, Biomedical BSc, Graduate and Postdoctoral Affairs & Associate Professor, Dept. of Anatomy & Cell Biology
Dhaliwal	Kiesha	Student, Nursing (Graduate Studies)
Finkelstein	Adam	Educational Developer, Teaching & Learning Services
Fletcher	Alexandra	Student, Med-3
Honigman	Meagan	Student, Speech & Language Pathology
Kafantaris	Demetra	Senior Advisor to Vice-Principal of Health Affairs & Dean, Faculty of Medicine
Labrecque	Francine	Chief, Family Medicine Centre, CIUSSS-Ouest-de-l'Île-de-Montréal
Lalla	Leonora	Associate Dean, Continuing Professional Development & Assistant Professor, Dept. of Family Medicine
Mandato	Craig	Associate Professor, Dept. of Anatomy and Cell Biology & Associate Member, Dept. of Medicine, Division of Experimental Medicine
Purden	Margaret	Director, Office of Inter-Professional Education & Associate Professor, Nursing
Razack	Saleem	Director, Office of Social Accountability and Community Engagement & Associate Professor, Pediatrics
Shrier	Alvin	Professor, Dept. of Physiology
Sivapragasam	Milani	Student, MD/PhD program
Thomas	Aliki	Assistant Professor, School of Physical and Occupational Therapy
Trottier	Claire	Academic Associate & Education Specialist, Dept. of Microbiology and Immunology
Regrets:		
Bahous	Renata	PhD student, Human Genetics
Bigras	Catherine	Student, Nursing
Behrang	Sharif	PhD student, Physiology
Emil	Sherif	Professor of Pediatric Surgery, Surgery, and Pediatrics & Associate Chair for Education & Citizenship
Magdzinski	Alex	Master's student, Nursing
Orlowski	John	Professor, Dept. of Physiology

TABLE 2

TABLE 2B: BRAINSTORMING SESSION 2 PARTICIPANTS – Inter-Professional Education (Feb. 8, 2017)		
Antonacci	Rosetta	Nurse Manager, Clinical Teaching Unit, St. Mary's Hospital (CIUSSS-Ouest-de-l'Ile) & Faculty Lecturer, Ingram School of Nursing
Boudreau	Donald	Interim Director, Centre for Medical Education & Associate Professor, Dept. of Medicine & Associate Professor, Dept. of Medicine
Chassé	Kathleen	Coordonnatrice en réadaptation, St. Anne's Hospital (CIUSSS-Ouest-de-l'Ile)
Daly	Mark	Director of Education, MUHC & Director of Faculty Development for Interprofessional Education
Davis	Elaine	Associate Dean, Biomedical BSc, Graduate and Postdoctoral Affairs & Associate Professor, Dept. of Anatomy & Cell Biology
Doyle	Maureen	Family Medicine Unit Director, CIUSSS-Ouest-de-l'Ile
Hales	Barbara	Professor, Dept. of Pharmacology & Therapeutics
Kutcher	Stephen	Student – Epidemiology and Biostatistics
Purden	Margaret	Director, Office of Inter-Professional Education & Associate Professor, Nursing
Ragsdale	David	Associate Professor, Dept. of Neurology and Neurosurgery
Razack	Saleem	Director, Office of Social Accountability and Community Engagement & Associate Professor, Pediatrics
Thomas	Aliki	Assistant Professor, School of Physical and Occupational Therapy
Try	Amanda	Student – Med 1
Young	Meredith	Assistant Professor, Centre for Medical Education & Dept. of Medicine
Regrets:		
Behrang	Sharif	PhD student, Physiology
Di Re	Antoinette	Director, Multidisciplinary Services (adult sites), MUHC
Fletcher	Alexandra	Student, Med-3
Hébert	Terry	Professor, Dept. of Pharmacology and Therapeutics
Honigman	Meagan	Student, Speech & Language Pathology
Mackay	Laurent	PhD student, Physiology
Noël	Geoffroy	Director, Division of Anatomical Sciences, Dept. of Anatomy & Cell Biology
Orlowski	John	Professor, Dept. of Physiology

TABLE 2

TABLE 2C: BRAINSTORMING SESSION 3 PARTICIPANTS –Education Research (Feb. 14, 2017)		
Aggarwal	Raj	Director, Steinberg Centre for Simulation and Interactive Learning
Boudreau	Donald	Interim Director, Centre for Medical Education & Associate Professor, Dept. of Medicine
Chassé	Kathleen	Coordonnatrice en réadaptation, St. Anne's Hospital (CIUSSS-Ouest-de-l'Île-de-Montréal)
Colby	Sarah	Student-School of Communication Sciences & Disorders
Mandato	Craig	Associate Professor, Dept. of Anatomy and Cell Biology & Associate Member, Dept. of Medicine, Division of Experimental Medicine
Proulx	Renée	Directrice déléguée des affaires universitaires, enseignement et recherche, CIUSSS-Ouest-de-l'Île-de-Montréal
Purden	Margaret	Director, Office of Inter-Professional Education & Associate Professor, Nursing
Ragsdale	David	Associate Professor, Dept. of Neurology and Neurosurgery
Thomas	Aliki	Assistant Professor, School of Physical and Occupational Therapy
Totten	Stephanie	Student-MD/PhD program
Trottier	Claire	Academic Associate & Education Specialist, Dept. of Microbiology and Immunology
Try	Amanda	Student–Med 1
Young	Meredith	Assistant Professor, Centre for Medical Education & Dept. of Medicine
Regrets:		
Bahous	Renata	PhD student, Human Genetics
Behrang	Sharif	PhD student, Physiology
Bigras	Catherine	Student, Nursing
Emil	Sherif	Professor of Pediatric Surgery, Surgery, and Pediatrics & Associate Chair for Education & Citizenship
Jerome-Majewska	Loydie	Associate Professor of Pediatrics & Associate Member, Dept. of Human Genetics, Dept. of Anatomy and Cell Biology

GLOSSARY

ABBREVIATION	MEANING
A&E	Assessment & Evaluation
APP	Alliance of Professional Programs
BS	Basic Science
CIUSSS	Centre intégré universitaire de santé et de services sociaux
CPD	Continuing Professional Development
ELC	Education Leadership Council
FLC	Faculty Leadership Commons
HPE	Health Professions Education
IDE	Interdisciplinary Education
IPCP	Interprofessional Collaborative Practice
IPE	Interprofessional Education
ISON	Ingram School of Nursing
LEAP	Learning Environment Action Panel
MASH	McGill Association of Students in Healthcare
MedIT	McGill Faculty of Medicine Information Technology Services
MUHC	McGill University Health Centre
OIPE	Office of Inter-Professional Education
PGME	Postgraduate Medical Education
SCSD	School of Communication Sciences and Disorders
SEE Committee	Steering Educational Excellence Committee
SPOT	School of Physical and Occupational Sciences
SWOT	Strengths, Weaknesses, Opportunities and Threats
TLS	Teaching and Learning Services
UGME	Undergraduate Medical Education
WELL	Wellness Enhanced Life-Long Learning (Student Wellness Centre)