

Innovation Steering Committee Recommendations: Entrepreneurship Training

March 2014

1 Objective

Entrepreneurship training has been identified as a strategic imperative for McGill University over the next five years. This training should involve innovation, creativity, and commercialization activities. The “Innovation Steering Committee” examined possible pathways to the implementation of such entrepreneurship training, innovation, creativity, and commercialization. The committee also provided recommendations as input into this proposal for achieving the desired outcomes.

Consultations have already occurred with the Deputy Provost, the Deans, the Office of the Vice-Principal (Research and International Relations) and with other key stakeholders. One message was very clear: we must ensure that the dialogue on the topics of entrepreneurship, creativity, innovation and commercialization, which now spans two decades, must now move from theory to practice be acted upon in the best interests of McGill.

Specific objectives:

P7 Mandate:

1. *Reconcile duplication of efforts in entrepreneurship training across Faculties in order to eliminate or leverage opportunities*
2. *Identify any gaps that exist in entrepreneurship education curriculum*
3. *Align efforts and define responsibilities of the Provost’s Office and VPRIR*

These deliverables will form the first parts of an **institutional roadmap for entrepreneurship and innovation, tying together the pockets of innovative activity taking place across the campuses, with a special focus on “transversal initiatives”**.

2 Definitions:

Innovation - The process of translating an idea or invention into an activity, good, or service that creates societal value.

Entrepreneur – An individual that exercises initiative by organizing a venture that leverages an idea, activity, good, or service; as the key decision maker, the entrepreneur decides what to implement and how to do it.

Entrepreneurship – the construction, pursuit and realization of an opportunity to innovate requiring resources beyond the entrepreneur’s immediate control and resulting in economic or social change.

Entrepreneurship training – any academic activity, which may be undertaken (for-credit or not-for-credit, classroom learning or experiential learning) aimed at increasing the likelihood that its target audience will engage in and be successful at innovation and entrepreneurship. When used in the context of McGill University this concept is always understood to include social innovation and entrepreneurship; and, sometimes, training in essentials of management and/or fundamentals of business in addition to training in entrepreneurship per se.

3 Desired outcomes

- Leverage McGill’s infrastructure and excellence (e.g. in engineering, physical sciences, biomedical domains, management) to inspire and drive entrepreneurship on campus
- All undergraduate and graduate students have access to entrepreneurship education that may include formal/credited courses and programs; and informal, i.e. not-for-credit, courses, activities or experiences. In both cases, both theory and practical hands-on material should be addressed.
- All undergraduate students have access to an entrepreneurship experience, patterned on the “research experience” initiative.
- All academic staff have access to support/facilitation for entrepreneurial activities.
- Entrepreneurship becomes recognized as a valued activity at McGill.
- McGill attracts top-tier students interested in entrepreneurship.
- Creation of a donor-led entrepreneurship seed fund

4 The case for enhancing entrepreneurship education and entrepreneurship-based experiential offerings at McGill

- Outside of Management, and particularly in the Science, Medicine and Engineering Faculties, there is significant unmet demand for entrepreneurship education and entrepreneurial experiences.
- Without these offerings, McGill is losing students to places that offer better entrepreneurship programs. The Office of Sponsored Research receives a regular stream of emails and queries from students and faculty asking how to engage in entrepreneurial activities—there is no designated path for directing these queries.
- Increasingly, external funding agencies (NSERC, CECRs, NCEs) require that our training programs reflect the need for enhanced entrepreneurship education and activities.
- McGill’s strategic plan speaks to engaging in entrepreneurial activities.

5 Entrepreneurship/Innovation Hub

- To the external world, McGill's perspective and action on innovation/entrepreneurship is not well defined.
- There is consensus that we need to define an entity that is the home for innovation activities for McGill. This entity (which may already exist on campus) would act as a point of contact for external partners and internal collaborators and would lead a McGill-centric strategy for innovation and entrepreneurship, elevating the profile of entrepreneurship at the University.
- This should be an academic entity with an appropriate level of administrative support to ensure a culture of customer service that can meet the demands of a diverse set of clientele.
- "Accelerator" services that provide access to mentors, resources and staged funding are required. These could be offered to students as part of a defined curriculum (e.g. an entrepreneurship Honours project with an appropriately-matched faculty supervisor) or as an optional stream after graduation.
- A key "mission" component of an entrepreneurship/innovation hub should be to inspire a culture of entrepreneurship at McGill.
- An entrepreneurship "seed fund" for campus activities and pilot projects would be a key driver in encouraging a culture of entrepreneurship, similar to the success of the sustainability fund.
- An innovation hub could provide a gateway to internal resources (e.g McGill HPC Centre, Genome Centre, Microfab Unit) that could be leveraged to initiate new student or faculty projects
- The innovation hub could coordinate and promote activities through student ambassadors in every Faculty.
- The Quartier de l'innovation can be leveraged as an extension of the innovation hub, particularly with respect to the coordination of an array of experiential innovation/social innovation/entrepreneurship experiences and other opportunities.
 - The QI team is presently an important [point of contact](#) for students wishing to become entrepreneurs. The QI provides access to infrastructure and incubators within the district, specifically:
 - Identifying funds and space within Incubators in the district
 - Social and cultural innovation projects
 - Summits and conferences (e.g. McGill innovation Week and the Montreal Summit on Innovation)
 - Funding for student projects –using 'QI Campus Innovation Funds' initiated by the Student Working Group
 - Encouraging student initiatives (e.g. legal clinic for start-ups)
 - Development of new internship opportunities with local partners
 - Formal and informal networking with local and international partners – connections with the community

6 Space

- There are considerable space needs for the successful implementation of an entrepreneurship/innovation strategy.
- The availability of “unstructured” space is seen as a critical success factor, as well as complementary to the proposed entrepreneurship training pathways outlined below. The Libraries offer possibilities for the creation of space for “unstructured” networking, interaction, and mentorship activities.
- For students in the sciences, the availability of on-campus incubator/hackubator “bench” space is also seen as critical.
- University of Utah provides multidisciplinary innovation space allowing professors from every faculty to interact in a “hive” environment. This has proven highly successful.
- With the bench strength and experience of professors specializing in entrepreneurship, the Desautels Faculty of Management is a strong candidate for both the networking/accelerator space and the central coordinating unit for entrepreneurship activities.

7 Entrepreneurship training and entrepreneurial experiences

- There are several segments of the McGill community that will require different offerings, support and opportunities. Below, segments most important to each are described and mapped in tabular form.
 - Undergraduate students: A focus on curricular elements plus experiential opportunities.
 - Undergraduate students, particularly in accredited programs, have little room in their degrees for a minor in entrepreneurship.
 - Is it feasible to model entrepreneurship studies on an “honours” program timetable with an additional year? What are the funding implications of an additional year of study?
 - Is there room for a 12-credit entrepreneurship “option”?
 - Could credited entrepreneurship training take place over the summer in a boot-camp format?
 - To what extent can online training play a role?
 - Should a start-up launch course be offered with admission granted competitively on the basis of the strength of business/venture plans?
 - Is the UBC “[sustainability pathway](#)” a viable model for undergraduate entrepreneurship training and experiences at McGill?
 - Graduate students: More focus on hands-on experience requiring mentorship and facilitation. May have an interest in a certificate or diploma program for entrepreneurship.

- Postdoctoral fellows: Include intellectual property and technology transfer issues.
 - An entrepreneurship fellowship has been proposed as one avenue for supporting the pursuit of entrepreneurial activities in the context of a PhD program.
- Academic staff: Need for support and facilitation services.
- There are three important modes of entrepreneurship training that can take place in a University setting:
 - a) Course-based expert instruction and case studies
 - b) Experiential training
 - c) Blending formal entrepreneurship training (general and discipline-specific) with experiential learning that provides a project-based approach to innovation and entrepreneurship. With appropriate professorial mentorship, this would make infrastructure/labs/centres (existing and new) available to students and researchers as a practical “canvas” in which innovation, entrepreneurship, and commercialization can be initiated and explored.

		Undergraduate Students	Graduate Students	Postdoctoral Fellows	Professors
Space	Networking space	✓	✓	✓	✓
	"Lab" space	✓	✓	✓	
Formal instruction	Credited in-class theory	✓			
	Credited in-class practical	✓			
	Certificate program			✓	
Experiential learning	Internships	✓	✓		
	Start-up launch	✓	✓		
	Boot-camps	✓	✓	✓	✓
	Informal instruction	✓	✓	✓	✓
	Mentorship	✓	✓		
Launch facilitation	IP/Tech. Transfer	✓	✓	✓	✓
	Linking activities	✓	✓	✓	✓
Centralized coordinating vehicle	Coordination of experiential opportunities	✓	✓	✓	✓
	Coordination of events	✓	✓	✓	✓
	Coordination of linking activities	✓	✓	✓	✓

	Coordination of launch facilitation activities	✓	✓	✓	✓
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- The Innovation Steering Committee proposes to conceptualize entrepreneurship training as comprised of two important dimensions, as illustrated in the following grid. The grid also outlines the various components of a possible “option/pathway” model for entrepreneurship training at McGill which would allow students to self-select according to their interests/needs, and could form part of the “McGill Commitment” to undergraduates:

	Emphasis on classroom learning	Emphasis on experiential learning
For credit	<p>QUADRANT 1</p> <ul style="list-style-type: none"> Credited courses on entrepreneurship (theory) and management essentials and/or business fundamentals <i>most likely offered by the Desautels Faculty of Management.</i> Credited courses on discipline-specific contexts for innovation & entrepreneurship (e.g. agribusiness, medical devices, etc.) <i>most likely offered by Departments, perhaps in collaboration with Desautels.</i> 	<p>QUADRANT 2</p> <ul style="list-style-type: none"> Credited courses providing opportunities to create and validate start-ups with mentorship and support from appropriately-matched professors (who may be practitioners) or qualified alumni/others. Where appropriate a facilitated transition to an incubator, an option to apply to the McGill Innovation Fund, a secondary stage of in-class training, or other transitional supports, <i>most likely offered by and in Departments, perhaps in collaboration with Desautels.</i>
Not for credit	<p>QUADRANT 3</p> <ul style="list-style-type: none"> Not-for-credit courses or modules on entrepreneurship (theory) and management essentials and/or business fundamentals, <i>perhaps offered by the Executive Institute &/or Dobson Centre of the Desautels Faculty of Management.</i> 	<p>QUADRANT 4</p> <ul style="list-style-type: none"> Less formal, uncredited opportunities to create and validate start-ups with mentorship and support from practitioners (who may be professors) or qualified alumni/others and where appropriate a facilitated transition to an incubator, an option to apply to the McGill Innovation Fund, a secondary stage of in-class training, or other transitional supports, <i>most likely offered in Departments, perhaps in collaboration with Desautels’ Dobson Centre.</i>

- As regards Quadrants 1 and 2, the Innovation Steering Committee also supports the gradual expansion of targeted Minor in Entrepreneurship programs presently being offered for Engineering students and planned for AES students.

- The Faculty of Engineering currently offers an 18-credit minor in Technological Entrepreneurship, with 12 Desautels credits and 6 Faculty-specific (ENG) credits that are more experiential and project-focused.
- A similar program (Minor in Agribusiness Entrepreneurship) is currently under discussion at the Faculty of Agricultural and Environmental Sciences and in collaboration with Desautels, with the same mix of credits (12 Desautels credits, 6 FAES credits)
- This appears to be a robust model for a minor in entrepreneurship for undergraduate students that could be expanded to other Faculties.
- As a component of new minors or as stand-alone training, new courses in Management Essentials for non-Management students should be developed and delivered by the Desautels Faculty of Management.

8 Proposed Next Steps

- The Office of the Provost, the Office of the Vice-Principal (Research and International Relations), the Office of the Dean of Graduate & Postdoctoral Studies, and the Office of the Deputy Provost (Student Life and Learning) will work with the Desautels Faculty of Management to define the contours and scope of a desired proposal by the Faculty of Management (e.g. number of non-management undergraduate & graduate students to be trained, partner faculties to be prioritized, timeline, etc.). As part of this effort, consultations should be undertaken with key stakeholders (Deans, students and faculty) particularly in the Faculties of Engineering, Science, Medicine, Agricultural and Environmental Sciences and Management.
- The Desautels Faculty of Management will prepare and submit a proposal for consideration by the Provost, the Deputy Provost, the Dean of Graduate and Postdoctoral Studies, and the Office of the Vice-Principal (Research and International Relations).
- The Innovation Steering Committee, together with the Vice-Principal (Research and International Relations) and the Desautels Faculty of Management will develop further the “innovation hub” and experiential element of these recommendations.
- The report recently commissioned by the QI Steering Committee, *“An Assessment of Opportunities for McGill University to act as a Catalyst for Social Innovation within the Quartier de l’innovation”*, and being developed separately will be considered by the Innovation Steering Committee to ensure alignment with these recommendations.
- The proposal will then be reviewed and validated by the senior leadership team, along with resource commitments.

9 Members of the Innovation Steering Committee

First	Last	Department/Unit	Role
Phil	Barker	Neurology and Neurosurgery	Chair
Mark	Andrews	Chemistry	Member
Michele	Beaulieu	VPRIR	Member
Timothy	Geary	Parasitology	Member
Philippe	Gros	Biochemistry	Member
Peter	Gruter	Physics	Member
David	Lametti	Law	Member
Bruce	Lennox	Chemistry	Member
Steve	Maguire	Management	Member
Antonia	Maioni	Political Science	Member (pending)
Isabelle	Péan	VPRIR	Member
Nikolas	Provatas	Physics	Member
Lea	Cameron	Office of the Provost	Member
Greg	Vit	Management	Member