MESSAGE FROM THE DEAN

In 2021-2022, we welcomed back to campus our students, faculty, and staff with the resumption of in-person courses. It was a year of adaptation and of judicious planning around new variant waves. It was also a year of revitalization, enthusiasm, and determination. The McGill Engine Centre was proud to open its doors and provide a space for ongoing collaboration, creation, and innovation. We were also able to pilot three new experiential learning programs, namely, the Invention-to-Impact Training Program, the Application Development Internship Program, and the Global Engineering Design Studio. I invite you to read more about them in this report. None of these activities would be possible without the support and strength of our benefactors, partners, Engine team, and entrepreneurial-minded members. Thank you for taking the Centre into its fourth year, and for allowing us to produce ten years of programming. We look forward to continuing to grow and develop to better serve our McGill community.

Jim A. Nicell
PH.D., P.ENG., FCAE
Dean, Faculty of Engineering

MESSAGE FROM THE DIRECTOR

With our return to campus this past year, we aimed to provide both in-person and online support and training programs for technologically based innovation and entrepreneurship. The implementation of NSERC’s Alliance program resulted in an increase of over 140% in our NSERC grants and a doubling of our industry funding dollars. While maintaining event attendance in online or hybrid formats posed a challenge, the McGill Engine Centre continued to offer the same number of workshops and events thanks to our dedicated team. Speaking of our team, we were happy to expand our staff to include a Programs Associate along with a Community and Communications Associate. Looking ahead, we are eager to continue to pilot new programs and use the “build-measure-learn” methodology to improve our offerings and services to students, professors, and companies, increasing our reach across campus and beyond.

Benoit Boulet
PH.D., P.ENG., SMIEEE
Director, McGill Engine
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The McGill Engine Centre, in the Faculty of Engineering, focuses on stimulating and supporting technologically based innovation and entrepreneurship at McGill University in collaboration with the McGill Dobson Centre for Entrepreneurship and the Office of Innovation and Partnerships.

**VISION**

For the McGill Engine community to make a positive impact and contribute value to the innovation and entrepreneurial ecosystems, locally, regionally, nationally, and worldwide.

**MISSIONS**

01
Helping to develop the next generation of McGill engineers, designers, innovators, change agents, and entrepreneurs by providing training and experiential learning programs, advising and coaching, project funding, and business mentorship.

02
Promoting and accelerating the commercialization of inventions and software through funding, coaching, and connections.

03
Increasing engagement and R&D collaborations between innovation-driven companies and the Faculty of Engineering by providing matching and facilitation services.
VALUES

CURIOITY
Questioning the status quo and trying to better understand the world around us

COLLABORATION
Promote sharing and involvement of everyone to achieve common goals

COMMUNITY
Caring about each other, staying involved, and giving back

SUSTAINABILITY
Working in a way that integrates social, economic, and environmental dimensions equitably within the limits of a finite planet

DETERMINATION
Persevering even when encountering difficulties or failures, believing you can be a positive change agent

ANNUAL IMPACT

$166K +
IN GRANTS, AWARDS, PRIZES, STIPENDS, AND FELLOWSHIPS AWARDED

50
PROJECT APPLICATIONS REVIEWED

27
AWARDED PROJECTS

203
STUDENTS & PROFESSORS ADVISED/COACHED

199
COMPANY INTERACTIONS

499
ATTENDEES AT 45 EVENTS, SEMINARS & WORKSHOPS
The McGill Engine’s two technological Entrepreneurs-in-Residence (TechEiRs) are available for advising and coaching to help students and faculty members get to the next level with their technologically based idea or project. They also mentor several of our TechAccel teams.
ADVISING & COACHING

In addition to the TechEiRs, Katya Marc, the Associate Director of the McGill Engine Centre, also advises and coaches students and professors. She offers drop-in hours for students and faculty members who have questions about technological entrepreneurship and innovation, want feedback on their business ideas, are looking for connections with other resources, potential partners, and investors, or want advice on anything relating to entrepreneurship or innovation.

27
PROFESSORS ADVISED
& COACHED

176
STUDENTS ADVISED
& COACHED

716
ADVISING & COACHING
SESSIONS

INDUSTRY PARTNERSHIPS

As part of our mission of increasing engagement and R&D collaborations between innovation-driven companies and the Faculty of Engineering, our team had 188 interactions with companies through matching and facilitation services. Our Faculty of Engineering professors brought in the following funding:

$5.9M
R&D FUNDING FROM INDUSTRY

$9.5M
FUNDING FROM NSERC PARTNERSHIP PROGRAMS

$2.7M
MITACS PROJECT FUNDING
In addition to providing business mentorship, tools, and training to support students and professors in translating their ideas and fundamental research to the marketplace, the McGill Engine Centre provides funding for project implementation. There are several funding programs for faculty members, undergraduate students, graduate students, and postdoctoral researchers.
The TechAccel Program helps students jump-start and accelerate their technologically based ideas that have business or social impact potential. Teams develop their entrepreneurial skills through a seven-part online training platform and one-on-one business mentorship and project funding for product, process, or service development. The program allows participants to define the core purpose of their startup, clarify their vision to their team and potential investors, speak with actual stakeholders to help test the team’s hypotheses, and have the opportunity to present an overview of the startup venture in a convincing and clear way as part of a succinct pitch presentation (TechAccel Showcase). This program allows student participants to receive CCR recognition as it is an approved Enriched Educational Opportunities (EEO) program. The grants come out of the Faculty of Engineering Engine Innovation Fund, which is funded by charitable gifts from alumni and other community donors.

$17.6K +
IN TECHACCEL GRANTS

19
PROJECT APPLICATIONS REVIEWED

11
AWARDED PROJECTS

8
PRE-GRANT PROJECTS

61
STUDENT ENTREPRENEURS ADVISED/COACHED

54%

30%

16%

28%
FEMALE STUDENT PARTICIPATION RATE OVERALL

79%
UNDERGRADUATE PARTICIPATION RATE

6%
MASTERS PARTICIPATION RATE

15%
PHD PARTICIPATION RATE

McGill - Faculty of Engineering

McGill - Other Faculties

Other Universities
Commit to 90 delivers quality tutoring at an affordable rate to empower every student to reach their academic potential.

Helios Gen
Helios Gen is a start-up aiming to simplify users’ routine by providing clothing outfits created using artificial intelligence.

OD1N Health
OD1N Health is creating a hands-free autonomous urinalysis technology, providing a fast and comprehensive overview of your health, at the comfort of your home.

Revív
Revív is creating a closed-loop, carbon-negative system that upcycles waste plastic into fuel, driven by organic waste-derived catalysts which later serve as potent regenerative soil nutrients.

Shahin
Shahin is a for-profit startup whose goal is to exploit the potential of drones to monitor traffic more efficiently. Using Computer Vision, we aim to detect traffic patterns in real time to prevent traffic congestion and to help drivers find the quickest paths to their destinations.

Streamline
Streamline is an innovative QR point of sale and payment rail system for cafes, restaurants, and bars. It's goal is to bring a simple, effective, and free POS solution to every local business in Montreal.

TrustCare
TrustCare is building a bridge of communication and trust between family members and care facilities.

Urban Turbine
Urban Turbine is an electricity solution providing company via vertical axis wind turbines (VAWT) as a renewable energy solution.
BioGEEK
BioGEEK is a non-profit startup made of students passionate about using engineering to help underserved communities. BioGEEK’s goal is to provide people with quick and accessible energy to help meet their everyday electrical needs.

Sutton
Sutton is a peer-hosted cloud. Sutton connects developers seeking affordable edge computing services to billions of computer owners whose devices hold valuable, unused processing power.

Voire
Voire is an organization that aims to revolutionize the museum experience through digitalization and artificial intelligence.

Brighten
Brighten is a new tech start-up focused on providing Canadians with personalized, accessible, and effective solutions for managing winter depression and seasonal affective disorder.

Freely
Freely is a for-profit startup on a mission to make sexual wellness more accessible than ever. We are building a one-stop-shop website that empowers anybody to make informed decisions and design the perfect product for them. By leveraging AI and additive manufacturing.

Libro
Libro is a venture started by students who promote the idea of a safeguarded workspace for studying. Our mission is to guard unattended electronics in public study spaces, and we aim to reinvent the way students interact with their belongings.
TECHACCEL PROGRAM

FALL 2021 (CONTINUED)

**Mimetik Solutions**  
Mimetik Solutions provides innovative biomaterials and creative solutions for printing tissue mimetic scaffolds for surgical training and regenerative medicine.

**Parklue**  
Parklue is a venture that aims to build a community of shared parking spots through a mobile and web platform that contains two main components: allowing users to temporarily borrow and share parking spots, and an open forum for everyone.

**Revív**  
Revív is creating a closed-loop, carbon-negative system that upcycles waste plastic into fuel, driven by organic waste-derived catalysts which later serve as potent regenerative soil nutrients.

**SMS NanoTech**  
SMS NanoTech develops the next generation of automated diagnostic platforms. The first prototype « SALIVERA 1.0 » focuses on the early-stage diagnosis of Covid 19 and its variants through a rapid saliva test that is fully automated with over 99% sensitivity.

TECHACCEL GRANTEE TESTIMONIALS

“Engine was very helpful to us in our project. We got to meet an engaged community of entrepreneurs who shared their experience and knowledge with us. The TechAccel program is a door into the exciting world of startups that many students would otherwise miss.”

“An eye-opening experience that allowed me to pivot my startup in the right direction. The TechAccel experience not only helped our start-up project, but also equipped me with the tools to be a successful entrepreneur!”

12
The McGill Engine continued to help provide mentorship and learning experiences for McGill students over the summer. Four McGill Faculty of Engineering-affiliated startups were selected to train and supervise an intern over the summer. Each intern position was filled by a McGill University undergraduate student within the Faculty of Engineering and Desautels Faculty of Management. The interns had the opportunity to collaborate remotely or in-person with both the startup and a mentor at the Engine Centre to ensure they had a well-rounded learning experience over the summer.

Thanks to our generous alumnus donor John D. Thompson, we were able to continue with our Startup Internship Program to provide our students with an experiential learning opportunity within our startups over the summer.

<table>
<thead>
<tr>
<th>$22.5k</th>
<th>4</th>
<th>44</th>
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<tbody>
<tr>
<td>In stipends awarded</td>
<td>Startup applications were selected</td>
<td>Intern applications received, 4 were selected</td>
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</table>

### Startup and Intern Testimonials

Engine's internship program is about team building and collective work. As a team, startups can move ahead and achieve incredible milestones. To make this reality, Engine provides wonderful support of funding, mentorship, and networking.

Hamid Golhasany, Co-Founder of ScienceReach

The internship helped me learn new technologies and algorithms, meet new people with different ideas. It was an amazing experience.

Himel Saha, Software Development Intern at Brighten Health
Brighten Health is a new tech start-up focused on providing Canadians with personalized, accessible, and comprehensive solutions for developing routines that support mental wellness and facilitate the management of winter depression.

Freely is on a mission to make sexual wellness more accessible than ever. We leverage machine learning and additive manufacturing to offer completely custom sex toys, as unique as you are.

Ora-3D is intersecting the gap between dental experts and everyday people through engineering innovation that redefines the next dimension of oral health care. Our product line consists of a patented three-dimensional brushing experience.

ScienceReach is an online platform that obtains data in specialized templates from community-based organizations (CBOs) like NGOs and provides it to the researchers and students at universities. CBOs are deeply rooted in communities, and they have invaluable information of communities’ needs, challenges and priorities.
McGill Engine partnered with six other leading engineering institutions in the world in the year 2022 and delivered the Global Engineering Design Studio program (GEDS). GEDS allows students from across the world to collaborate together to propose innovative solutions to pressing global issues. For the inaugural cohort, GEDS focused on Sustainable Cities and Communities – UN Sustainable Development Goal (SDG) 11.

**PARTNER INSTITUTIONS**

- UCL
- McMaster University
- University of Toronto
- University College London
- Monash University
- University of Auckland
- University of Southern California
- USC Viterbi School of Engineering

**SESSIONS**

- Feb 19, 2022  Imagine a Better World by McMaster University
- Feb 19, 2022  Project Management and Inclusive Communication by University of Toronto
- Feb 26, 2022  Equity and Ethics by University College London
- Feb 26, 2022  Problem Assessment and Resource Navigation by McGill University
- Mar 05, 2022  Questions for Subject Matter Experts by McMaster University
- Mar 12, 2022  Downloading Insights by McMaster University
- Mar 12, 2022  Revisiting Human-Centered Design by McMaster University
- Mar 19, 2022  Rapid Ideation by Monash University
- Mar 19, 2022  Converging on an Idea by McMaster University
- Mar 26, 2022  Equitable and Inclusive Problem-solving by University College London
- Mar 26, 2022  Prototyping by Monash University
- Apr 02, 2022  Business Model Canvas by University of Southern California
- Apr 02, 2022  Creating and Refining a Pitch by University of Southern California
- Apr 09, 2022  Project Showcase
INVENTION TO IMPACT TRAINING PROGRAM

The McGill Engine started the Invention to Impact (I-to-I) Training Program in fall 2021, thanks to funding from Ministère de l'Enseignement supérieur. I-to-I uses experiential learning to help McGill graduate students and their faculty supervisors gain insight into: technology commercialization, entrepreneurship, and industry requirements and challenges. I-to-I provides tools and training to support researchers to translate their research to the marketplace and have their solutions benefit society. The program imparts an evidence-based methodology that students and professors can use for the rest of their careers, and it also enables the transformation of inventions to impact.

Participant identified skill growth in innovation skills and entrepreneurial skills.

Based on Self-Assessment Questionnaires: pre- and post-program, sample size is 12 (7 from Fall 2021 Cohort, and 5 from Spring 2022 Cohort).

<table>
<thead>
<tr>
<th>10</th>
<th>2</th>
<th>8</th>
</tr>
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<tbody>
<tr>
<td>TEAMS PARTICIPATED</td>
<td>COHORTS</td>
<td>MENTORS</td>
</tr>
</tbody>
</table>

+ 25% in Innovation Skills
+ 38% in Entrepreneurial Skills
INVENTION TO IMPACT TRAINING PROGRAM

INAUGURAL COHORT (FALL 2021)

**Bandits**

Professor Daniel Varro and Sebastian Pilarski, and Slawomir Pilarski
Solutions to decision-making problems via multi-armed bandits

Alexandre Marceau-Gozy and Jonathan De Belle
Long-haul hydrogen transportation solution to accelerate heavy vehicles transition towards net-zero emissions

**C2BioSurfaces**

Professor Corinne Hoesli and Hugo Level,
Versatile surface treatment platform to create cell-specific biocompatible implants or cell culture systems

**Mimetik Solutions**

Professor Jianyu Li, Zhenwei Ma, Ran Huo, Christopher Chung-Tze-Cheong, and Alex Nottegar
Injectable, tough, adhesive hydrogel for sutureless wound management and meniscus repair

**TIME BIOSYSTEMS**

Professor J. Matt Kinsella, Salvador Flores-Torres, and Jacqueline Kort-Mascort
Novel tissue-based biomaterial to replace preclinical small animal models for improved drug screening and development

Lulan Shen, Ruofeng Li, Yitian Zhang, and Shilei Lin
AI-based solution to facilitate communication between residents’ family members and elderly care facilities

MENTORS OF THE INAUGURAL COHORT

Juliana Munoz
Analyst, Amplitude Ventures

Stuart Kozlick
Professor of Practice, McGill University

Hugh Cameron
Visiting Professor, Makerere University, Kampala

Derrick Wong
Course Lecturer, McGill University

Prof. Michael Avedesian
Serial Entrepreneur and Course Lecturer
Professor Corinne Hoesli, Jonathan Brassard, and Michael Chuang
A biomedical device that can be filled with insulin producing cells and vascularized to create a connection with the recipient’s blood circulation

Syntherb Biotech

Professor Codruta Ignea and Zimo Jin
Modifying the yeast membrane composition to generate a plant-like yeast cell factory to improve the production of plant-origin fine chemicals

TreeMaTech

Professor Theo G.M. van de Ven and Mohammadhadi Moradian
Production of sustainable straws from cellulose films

MENTORS OF THE SPRING 2022 COHORT

John Tentomas
Owner,
Nature’s Touch Frozen Foods Inc.

Juliana Munoz
Analyst,
Amplitude Ventures

Suman Rao
Associate,
Lumira Ventures
APPLICATION DEVELOPMENT PROGRAM

The McGill Engine created the Application Development Program in winter 2022. Three part-time Application Development interns were chosen and they provided assistance with developing minimum viable products (MVPs) of web application based on new ideas and ventures coming from the McGill community. Eleven project submissions were received and the Application Development Interns chose one project to work on.

STUDENT INTERN SUMMARY

Arianit Vavla  
Software Engineering, U4

Keanu Natchev  
Software Engineering, U4

David Kronish  
Software Engineering, U4

PROJECT SUMMARY

Engine’s Application Development student intern team (Winter 2022) choose to pair up with Tails, helping the startup venture transition from their beta prototype (native to iOS app) into a WebApp both in front-end UI UX design and in back-end setup.

Tails is a personal lab assistant designed by McGill graduate students to provide researchers with in-depth knowledge of their animal colonies (i.e., animal inventory) and providing them with recommendations to help maximize the colony's efficiency and health. Tails will help reduce the financial and time burden associated with biomedical research and improve overall animal welfare by minimizing needless suffering.
The McGill Engine continues to partner with the Cansbridge Fellowship organization to deliver scholarships to entrepreneurial McGill Faculty of Engineering students. The scholarships are offered to up to two promising undergraduate students enrolled in McGill’s Faculty of Engineering. This year’s Cansbridge Engine fellow is profiled below.

LAURENCE LIANG, CANSBRIDGE-ENGINE FELLOW
Laurence is a mechanical engineering student who joined the Cansbridge Fellowship’s 2022 cohort. Laurence interned at ACSL Ltd., a drone company, in Tokyo, Japan in summer 2022. ACSL manufactures drones for businesses. Laurence interned at the Research and Development Unit (R&D), on the Solutions team. His responsibilities included comparing the performances of two motors for a drone with a 25kg takeoff weight, producing block diagrams and helping prepare drone batteries during test flights.

ABOUT THE CANSBRIDGE FELLOWSHIP

ASIAN INTERNSHIP
A $6,000 grant to gain international exposure as they work and live in Asia over a summer.

SAN FRANCISCO CONFERENCE
The conference provides immersive workshops with industry professionals, entrepreneurs, and investors.

BAY AREA NETWORK
Resources dedicated to sourcing Cansbridge Fellows to top-tier Bay Area startups & companies.

CANSBRIDGE NETWORK
Network of Fellows enable people to meet their future co-founders and teammates.
IAN MCLACHLIN PRIZES

The Ian McLachlin Prizes were established in 1998 by Ian McLachlin, B.Eng. 1960, to encourage students in the Faculty of Engineering to undertake new ventures with business or social impact potential. These are awarded to students enrolled in the Faculty of Engineering with high academic standing who have begun, have made progress towards, or have completed an entrepreneurial project with business or social impact potential.

STOCATE
YANNICK D’MELLO
(PhD candidate in Electrical and Computer Engineering)

Stocate is an online platform that supports the Buy Local movement by connecting local sellers with potential buyers. They represent small businesses, artists, grassroots organizations, producers, and independent teachers in our mission to empower individuals to find, create, and add their own value to the world.

BIOOPTIC
NATASHA JACOBSON AND TREVOR COTTER
(Both PhD candidates in Mechanical Engineering)

BioOptic is a necessary staple in physiotherapy and rehabilitative offices, globally, for its ability to characterize the abdominal compartment, non-invasively, for improved and targeted treatment plans. We directly measure and relate intra-abdominal pressure and abdominal wall elasticity to clinicians and patients, alike.
The TechAccelR Grants are intended to help professors in the Faculty of Engineering accelerate their research-based ideas that are reported as inventions but need further validation prior to commercialization. The grants of up to $15,000 each come out of the Faculty of Engineering Engine Innovation Fund, which is funded by charitable gifts from alumni and other community donors.

**TECHACCEL R GRANTEES**

**Professor Changhong Cao, Mechanical Engineering**
Multimeter of the nano-age: a cost-effective system for multi-physics characterizations of ultrathin structures

**Professor Corinne Hoesli, Chemical Engineering, Jonathan Brassard, PhD candidate, Biological and Biomedical Engineering, Professor Richard Leask, Chemical Engineering, Professor Steven Paraskevas, Surgery**
Vascularized bioartificial pancreas for the treatment of diabetes

**Professor Natalie Reznikov, Bioengineering, Professor Julia Cohen Levy, Orthodontics, Professor Joyce Fung, School of Physical & Occupational Therapy, Dr. Alexei Morozov**
A feasibility study of the effect of high-frequency vibration on mandibular posture through hyoid bone-anchoring

**Professor Sebastian Wachsmann-Hogiu and Dr. Juanjuan Liu, research associate, both from Bioengineering**
On-Chip Chemiluminescence Biosensor for Food Safety

**Professor Daniel Varro, Sebastian Pilarski, PhD candidate, both from Electrical and Computer Engineering; and Slawomir Pilarski (Versyn) Optimizing Sequential Decision-Making (A/B Testing)**
WILLIAM AND RHEA SEATH AWARDS IN ENGINEERING INNOVATION

The William and Rhea Seath Awards (WRSAs) which support innovative research and development have been made possible thanks to the generosity of Faculty of Engineering alumnus, the late Mr. William Seath (B.Eng. 1952). These awards recognize outstanding students and professors who are conducting research and development with potential for commercialization. Two awards of $25,000 each were given in the 2021-2022 competition.

2021-2022 GRANTEES

SALIVERA: A FULLY AUTOMATED MOLECULAR TESTING DEVICE FOR RAPID DETECTION OF VIRAL RNA
Professor Sara Mahshid and Dr. Roozbeh Siavash Moakhar, research associate, Bioengineering
This technology consists of a device for very rapid diagnostic and serological testing in response to urgent needs in the COVID-19 pandemic. The portable and automated electrical acquisition can be coupled to a smartphone, using a smartphone application that can receive the electrical data and interpret the data into reading signals for a digital display. Our approach is cost-effective and does not require skilled operators.

PATTERN BASED CONTRACTILITY SCREENING IN DRUG DISCOVERY
Pictured Professor Allen Ehrlicher and Ajinkya Ghagre, PhD Candidate, both from Bioengineering; Dr. Ali Amini, postdoctoral fellow, Johanan Idicula (Forces Canada) and Professor Ramaswamy Krishnan (Harvard Medical School)
Cells exert contractile forces, and defects therein are fundamental to diverse pathologies including cardiomyopathies, skeletal myopathies, vasospasm, bronchospasm, and cancer migration, invasion and metastasis. In each of these disease contexts, novel drugs with the potential to modulate cellular contractile forces that ameliorate disease symptoms or progression are urgently sought. Nevertheless, there are no pre-clinical, clinical, or industrial methods for quantifying the forces exerted by cells. To bridge this gap, we have created a simple and efficient methodology of contractile quantification which we call Pattern-based Contractile Screening (PaCS). We are commercializing PaCS as a new screening technology that uses cell contractility to identify and characterize novel potential therapeutic compounds while eliminating false positives early in the drug process, thus potentially saving billions of dollars, years of effort, and human lives associated with defective drug candidates.
The McGill Engine hosts competitions, workshops, and events throughout the year to help students build connections, develop their entrepreneurial and innovation skills, and be inspired!
Our annual Celebration of Innovation and Entrepreneurship highlights and celebrates our emerging technological innovators and entrepreneurs. The evening was an occasion to bring together, students, faculty, accelerators, investors, and alumni. A number of awards were announced, the year's projects were showcased, and our inventors were acknowledged.

**EVENT HONOREES**

**2020-2021 WRSA AWARD WINNERS**

- Prof. Nathalie Tufenkji & Dr. Mathieu Lapointe
- Pavel Sinha, Prof. Ioannis Psaromiligkos and Prof. Zeljko Zilic

**2020-2021 WRSA AWARD REVIEW COMMITTEE**

- Neal Gordon
- Praveen Prasanna
- Michael Mee
- Nathan Stubina
- Professor Benoit Boulet

**TECHACCELER GRANTEES**

- Prof. Milan Maric, Prof. Richard Leask and Prof. Jim Nicell
- Prof. Mathieu Brochu and Dr. Sunyong Kwon
- Prof. Mihriban O. Pekguleryuz and Dr. Luis Angel Villegas-Armenta

**CANSBRIDGE-ENGINE FELLOWS**

- Shlesha Van
- Tinetendo Makata

**ENGINE DOBSON PRIZE**

- Kieyan Mamiche Afara
- Neel Faucher
- Nathan Leuranguer

**IAN MCLACHLIN PRIZES**

- Natasha Jacobson
- Trevor Cotter
- Yannick D'Mello
EVENT HONOREES (CONTINUED)

INVENTION TO IMPACT TRAINING PROGRAM INAUGURAL COHORT

Bandits

**BANDITS**
SOLUTIONS TO DECISION-MAKING PROBLEMS VIA MULTI-ARMED BANDITS

Prof. Daniel Varro
Sebastian Pilarski (Ph.D student)

EXOGY

**LONG-HAUL HYDROGEN TRANSPORTATION SOLUTION TO ACCELERATE HEAVY VEHICLES TRANSITION TOWARDS NET-ZERO EMISSIONS**

Alexandre Marceau-Gozy
Jonathan De Belle

MIMETIK SOLUTIONS

INJECTIBLE, TOUGH, ADHESIVE HYDROGEL FOR SUTURELESS WOUND MANAGEMENT AND MENISCUS REPAIR

Prof. Jiayu Li
Zhenwei Ma
Ran Huo
Christopher Chung-Tze-Cheong
Alex Nottegar

TIME BIOSYSTEM

**NOVEL TISSUE-BASED BIOMATERIAL TO REPLACE PRECLINICAL SMALL ANIMAL MODELS FOR IMPROVED DRUG SCREENING AND DEVELOPMENT**

Prof. J. Matt Kinsella
Jacqueline Kort-Mascort
Salvador Flores-Torres

TRUSTCARE

**AI-BASED SOLUTION TO FACILITATE COMMUNICATION BETWEEN RESIDENTS’ FAMILY MEMBERS AND ELDERLY CARE FACILITIES**

Lulan Shen
Ruofeng Li
Yitian Zhang
Shilei Lin

C2BIOSURFACES

**VERSATILE SURFACE TREATMENT PLATFORM TO CREATE CELL-SPECIFIC BIOCOMPATIBLE IMPLANTS OR CELL CULTURE SYSTEMS**

Prof. Corinne Hoesli
Hugo Level
TECHACCEL GRANTEES AND PRE-GRANTEES

Brighten
Kieyan Mamiche Afara
Neel Faucher
Nathan Leuranguer

Cloud Nine
Tanbin Chowdhury
Marie-Lynn Mansour
Ammar Rudani
Lawrence Zhang
Tanjim Chowdhury
Ajrin Jamil

CourseLnk
Abdullah Arafat
Sebastian Danson
Victorien Garrigues
Aritra Banik

DIASkin Technologies
Mohul Sharma
Xavier Santerre
Serine Ben Abdessalem

Freely
Nina-Marie Martinez
Pierre-Luc Leboeuf
Alex Moreau
Benjamin Lusterio-Adler

HOUND
Ari Kaufman
Diego Dorantes-Ferreira
Anthony Pultrone

Libro
Chun Kit Calvin Li
Chun Bon Charles Li
Chun Ho Brian Li
Yue Du
Erica Li

Mimetik Solutions
Zhenwei Ma
Huo Ran

Parklue
Joey Koay
Maggie Xiong
Signe Hoel
Aidan Eglin
Vibhor Gautam
Elena Pan
Evian Yang
Rita Jin

Pètience
Guanbingxue Huang
Yangshixing Li
Tianxing Zhong
Chen He
Yuzhou Yan

Recycling Pioneers
Kirklann Lau
Misghana Kassa
Arneet Karla
Simina Alungulesa

Rheto
Albert Kragl
Bernard Boisclair
Arvin Khodayari
George Kandalaft
Pouyuan Zabihian
Melissa Li
Binyuan Sun

Revív
Adam Rajguru
Michel Abdelnour

Sheltered
Mfoniso Ikpe
Paul Hinta
Jane Lee

SMS NanoTech
Mahsa Jalali
Tamer Abdelwahab

SWAM
David Brenken
Johan Boscher
Matthew Wittmann

TrustCare
Lulan Shen
Ruofeng Li
Abdulrahman
Takiddeen

Tulsi.farm
Juliano Cobuzzi
Justin Dragan
Mehdi Ibn Brahim
EVENT HONOREES (CONTINUED)

2021 ISSUED PATENT TITLES & INVENTORS

Structural Porous Biomaterial and Implant Formed of Same

Damiano Pasini, Burnett Johnston, Michael Tanzer, Sajad Arabnejad Khanoki

Methods and Systems for Foam Mine Fill

Faramarz (Ferri) P Hassani, Mohammed A Hefni, Mehrdad Fadaei Kermani

Method and Apparatus for Wirelessly Communicating over a Noisy Channel with a Variable Codeword Length Polar Code to Improve Transmission Capacity

Warren Gross, Adam Christian Cavatassi, Thibaud Tonnellier, Yiqun Ge

Bioresorbable Medical Devices and Method of Manufacturing the Same

Rosaire Mongrain, Stephen Yue, Olivier Bertrand

High Efficiency Visible and Ultraviolet Nanowire Emitters

Zetian Mi, Songrui Zhao, Renjie Wang

Sulfidated Nanoscale Zerovalent Iron and Method of Use Thereof

Subhasis Ghoshal, Sourjya Bhattacharjee

Dense Hydrogels

Showan N Nazhat, Chiara E Ghezzi, Benedetto Marelli, Neysan Nejat Oliver Kamranpour

To see all 2021 patents click here!
The McGill Engine teamed up again this year with POWE (Promoting Opportunities for Women in Engineering) to host a panel where three female McGill Engineering students shared their experiences and answered questions about becoming an entrepreneur.

**Guanbingxue (Shirley) Huang**

Studying Mechanical Engineering  
Co-Founder of Pètience  
2021 ELLevate Women Entrepreneurs Pre-Accelerator

**Nina-Marie Martinez**

Studying Mechanical Engineering  
Co-Founder of Freely  
Vice President External of McGill Association of Mechanical Engineers (MAME)

**Zhi Xin (Joey) Koay**

Studying Software Engineering  
2020 Schulich Leader  
Co-Founder of Parklue  
VP Products of Stocate
ENTREPRENEURSHIP-IN-ACTION

SPEAKER SERIES

This speaker series provides an opportunity to hear from entrepreneurs, accelerators, incubators, and investors about their experiences and offerings, in order to learn, be inspired, and build connections.

**Jimmy E. Chan**
Co-Founder & CEO of Dropbase

Jimmy is the Co-founder & CEO of Dropbase, a data platform that helps analytics and operations teams automate all the manual work of gathering, cleaning, and centralizing internal and external data.

**Brennan Spellacy**
Co-Founder & CEO of Patch

Brennan (B.Eng '16) is the co-founder and CEO of Patch, the platform for negative emissions.

**Sarim Malik**
Co-Founder & CEO of Neat

Sarim (BEng '21) is the Co-founder and CEO of Neat, a venture-backed startup building a desktop app offering the most seamless web notification experience for knowledge workers.
This workshop series provides a crash course in technological entrepreneurship and innovation. Each workshop allows McGill student participants to receive CCR recognition under the personal and professional development sections. Participants learn how to select and use the design thinking and lean startup methodologies for enhancing innovation and discover the needs of potential customers. They also learn about intellectual property, how to analyze competition, and the resources and tools available to them through McGill’s libraries for patent searching and market research.

Workshop #1 – Technological Innovation and Entrepreneurship 101

Workshop #2 – Startup Law 101

Workshop #3 – Design Thinking Methodology

Workshop #4 – Market Research and Analysis of Competition

Workshop #5 – Foundations of IP and Patent Searching

Workshop #6 – Customer Discovery
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Pre-Startup Skills: Foundations of IP and Patent Searching
TechAccel Summer 2022 Information Session
Invention to Impact Training Program Information Session
Pre-Startup Skills: Customer Discovery
Startup Internship Workshop: Tech Innovation & Entrepreneurship
Startup Internship Workshop: Design Thinking
Startup Internship Workshop: Foundations of IP and Patent Searching
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WE ARE LOOKING FOR

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02 GUEST SPEAKERS & JUDGES

03 WRSA PROPOSAL REVIEWERS

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FINANCIAL SUPPORT

The Innovation Fund lies at the heart of Engine's mission of encouraging entrepreneurial and innovative thinking. The fund supports team-based, innovative projects through the TechAccel grants, that help students to jump start and accelerate technology-based ideas that have business or social impact potential. In addition, the TechAccelR grants help researchers validate their research that has commercial and social impact potential.

The Innovation Fund is being supported by alumni:

- Jim & Barbara Brodeur (B.Eng. '56)
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- Pasquale Di Pierro (B.Eng. '76)
- Fonex Data Systems Inc.
- The Anna & Louis Viglione Foundation (B.Eng. '78)
- Michael Barski (B.Eng. '68)
- Mark Levine (B.Eng. '91)
- Arthur Levine (B.Eng. '61)
- Howard Stotland (B.Eng. '66)
- Robert Walsh (B.Eng. '65)
- Leon Fattal (B.Eng.’62)
- Eng Class of 1980
- Eng Class of 1976
- Eng Class of 1966

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1. An annual contribution
2. A named endowment within the Innovation fund

For more information please contact:
Mr. Krish Dasgupta, Director, University Advancement
krishanu.dasgupta@mcgill.ca