# Together Annual Report 2020









## CREATION OF THE FOUNDATION

The Arbour Foundation was created as a result of Mr. Pierre Arbour donating all of the shares of his private company, Alkébec Inc., valued then at \$9 million in 2005. Created December 30th, 2005, the Foundation operates under article 149(1)(f) of the Income Tax Act.

# MISSION OF THE FOUNDATION

The mission of the Foundation is to grant scholarships to deserving students in financial need at the master's and doctorate levels in three disciplines having been identified as most likely to foster economic growth: engineering, computer science and business administration.

# THE FOUNDATION'S SOLEMN DECLARATION ENDORSED BY SCHOLARSHIP RECIPIENTS

"I pledge to act with honesty and integrity while respecting human rights and dignity. I will strive to create sustainable prosperity and I will oppose corruption and exploitation. As I hold true to these principles, I will achieve peace of mind and a righteous reputation."

"Throughout his life, Pierre recognized the key role higher education played in stimulating Quebec's economic development and competitiveness. His Foundation will continue on his legacy by encouraging success in higher education in Quebec." Philippe Arbour, Pierre's son and Chairman

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# Our values

## PREAMBLE

The Arbour Foundation is committed to financing and backing deserving students who possess a series of praise-worthy intellectual and moral qualities, whilst also giving consideration to difficulties which may have been overcome by applicants.

The Arbour Foundation is committed to defending the Enlightenment values and principles exemplified by the sharing of knowledge, the elevation of reason, the promotion of science and humanism.

We believe that the principles underpinning the Enlightenment are axiomatic and are pillars for quality education, transcending both time and borders. The Arbour Foundation encourages universities to defend these principles.

The Arbour Foundation also encourages students in their discovery of the Enlightenment principles underpinning the Enlightenment by carefully considering and reflecting on the Foundation's statement of values.

# OUR STATEMENT OF VALUES

# **Value 1:** Diversity of opinion / Freedom of speech and expression

#### The Arbour Foundation

- believes that every individual should have the right to express his or her opinions and is justified in standing up to those who attempt to suppress debate. A corollary to freedom of speech is the right of people to hear the ideas of others, in order to be able to form nuanced opinions based on hearing multiple and divergent arguments;
- encourages people to actively engage in goodfaith discussion, civil debate, and conversation to foster a greater understanding and to flesh out areas of knowledge which require further elaboration and debate:
- promotes scientifically minded dialogue which aims to rank-order competing claims based on the strength of objective analysis;
- considers that all domains of knowledge and scientific enquiry can lead to a better understanding of the human condition and complex phenomena;
- endorses the adoption of the Chicago Principles. According to these principles, no debate should be suppressed on the basis that ideas are «disagreeable, offensive, unwise, immoral, or wrong-headed»; and
- believes that people should be respectful of others' choices so long as such choices do not impede on the personal choices or the liberty of others.

#### Value 2: A commitment to rational thought:

#### The Arbour Foundation

- encourages secular, logical, objective thought and its systematic application in an impartial and disinterested way with the aim of uncovering the truth and of discerning facts from ideology, which will almost inevitably interfere with the quest for the truth;
- believes that reason and knowledge based on a scientific rank-ordering of competing claims must prevail over ideology, and that knowledge must never be suppressed. An attempt should be made to fine tune ideals to reflect the facts, including a fundamental human nature, as well as the practicalities of everyday life;
- supports the use of the scientific method and proposes the adoption of a Bayesian approach which seeks to incorporate new information to refine formulations, ideas and improve theories, and to discard discredited or false ones, with the aim of improving the body of knowledge. We are agnostic to results whether consistent with a priori expectations or not; and
- believes that every field of study that is capable of evaluation under the scientific method must be prepared and willing to submit its claims and premises to empirical testing.



### **Value 3:** A judicious application of knowledge The Arbour Foundation

- encourages individuals to use discovered truths and facts wisely and apply themselves to solving problems with the objective of improving the human condition as well as the world we live in:
- encourages individuals to recognize that changes in the status quo inevitably leads to trade-offs.
   The scientifically-minded approach is to identify and quantify such trade-offs and carefully consider the law of unintended consequences; and
- encourages critical thinking to avoid policies and plans which may appear well-intentioned, but which are not backed by the latest scientific findings and body of literature.

# **Value 4:** Individual responsibility, meritocracy, and equality of opportunity

#### The Arbour Foundation

- judges the individual on merit, without regard to characteristics such as ethnicity, gender or religion;
- believes that each individual should assume personal responsibility and must act based on freewill. We hold that intent is demonstrated through action;
- believes that concerted efforts must be made to remove obstacles that stand in the way of the principles of free choice and equal opportunity; and
- believes that the pursuit of equality of outcome is incompatible with the principles of equality of opportunity and meritocracy.

# A word from our Chairman

As I write this note, we are beginning to turn the tide on this extraordinary period of history: less than a year on from the start of the COVID-19 pandemic, there are nearly a dozen approved vaccines with good safety profiles, some having very high effectiveness rates at reducing serious versions of the disease and, most importantly, reducing mortality by up to 95%. The race to vaccinate continues at pace, with Israel leading the way, although the UK and the United States appear to be closing the gap. Vaccine manufacturing and supply, combined with government rollout strategies and public confidence in the vaccine, modulate the pace of the race towards achieving herd immunity.

Together with the relatively high share of the population with natural immunity by having contracted COVID-19 (up to 15% of the population of the UK for instance), many countries in the West are expected to have achieved herd immunity (which, although it remains an area of debate, is believed to require about 70% of the population having antibodies) by the summer of 2021. I am cautiously optimistic in saying that this may be the beginning of the end for COVID-19; and although further mutations of the virus remain a threat, several vaccine technologies have been developed which should allow pharmaceutical companies to rapidly tweak and adapt their vaccines as needed. Pfizer is even trialing a vaccine-pill next month. It may well be that COVID-19 is here to stay, but it appears highly likely that its effects and infectiosity may be capable of being minimised to the point that it no longer poses a public health threat; particularly as the current 0.75% overall mortality rate is brought down to match that of the seasonal flu (0.10%). This reduction in serious illnesses is also helping to free up hospital capacity which is crucial to not only people who go on to develop severe COVID-19 illnesses, but also to the millions of people who have either been too scared to attend to other medical problems or the tens of millions of cancelled "elective" medical procedures since the onset of the pandemic. And the corollary to all of this is that the conditions are increasingly be-



ing met to allow (and for citizens to demand that) governments start relaxing lockdowns to allow people to resume their lives and for the economy to start rebuilding, for businesses to start taking in revenues, for loved ones to meet again and for children to be able to play and learn freely.

As I had argued in last year's letter, the virus is the biggest threat in the short term, although the economic and social consequences are more pernicious over the medium term; and I had called upon everyone do their bit to help fight the pandemic and help us return to some semblance of normality as quickly and as safely as possible. The silver lining of the collective pain and sacrifice that we have lived through is that we now have what is a reasonable draft manuscript for the manual for future pandemics.

While many of the key innovations that will allow us to move out of this pandemic come in the form of medical or technological breakthroughs, there is plenty that one can do closer to home. We have some wonderful examples of Arbour scholarship recipients joining the fight against the effects of the pandemic at the local level. For instance, one of our graduates enrolled to work in a retirement home during the summer and used his skills to help optimise the care home's inventory system, in addition to volunteering to cook and shop for a local non-profit in the community. Another scholar helped write letters for lonely people in retirement homes, in addition to volunteering to work at a local centre for track and trace; while a third volunteered to carry out groceries for a few of the over 60s in her neighbourhood. I am sure there are plenty of other examples and I am very proud of you all.

The Foundation, having made philanthropic donations totalling \$588,000 this year, has continued its course of supporting deserving and meritorious students in fulfilling their educational ambitions in the disciplines of engineering, computer science and business. These three core disciplines that the Foundation supports will be crucial to the rebuilding phase of the economy. Although economic numbers may remain gloomy for some time to come, disruption always brings opportunity in a free-market economy such as Ouebec or Canada, with competent, ambitious and well-trained individuals standing to benefit.

During 2020, management and the board have taken a number of decisions and actions aimed at further growing the capital of the Foundation, including the repivoting of its investment strategy and the launch of a donations drive, as we hope to be able to support a greater number of students, entrepreneurial initiatives, and connected philanthropic causes over time, with the overriding objective of supporting the economic growth of Quebec.

Also, given that we are direct stakeholders in the educational sector, we will also continue to promote and defend Enlightenment values, including reason, free speech, academic freedom, open discourse, the scientific method and humanism, in addition to supporting the ethos of excellence and merit.

I thank all of you for your continued support and your sustained efforts during such a difficult year and I look forward to seeing some of you in person again and shaking hands, as soon as the conditions allow.

Philippe Arbour, MSc, CFA

# A word from our Chief Executive Officer



This year, the Foundation is celebrating its 15th anniversary! Since its creation, more than 5 million dollars have been donated, that is to say almost 450 scholarships. During that time, the Foundation's capital has grown from 9 million to almost 16 million dollars, allowing us to give more and more scholarships each year, but also to increase the amount of the scholarships.

Dear friends of the Foundation,

A few years ago, I was fortunate enough to receive a scholarship from the Arbour Foundation. This scholarship, which was my first major doctoral award, changed my life. I was able to concentrate on my studies, but also to benefit from a recognition that later made it easier for me to obtain other prestigious scholarships. The trust that the Foundation placed in me allowed me to surpass myself while confirming the interest of my research work for the Quebec society and economy.

In 2006, Mr. Pierre Arbour donated two-thirds of his fortune to provide scholarships to deserving students so that they could contribute to the economic development of Quebec. Today, his vision has become a reality with almost 450 scholarships awarded, for a total of over 5 million dollars. How many lives this man has changed!

More than an organization offering financial support, the Arbour Foundation is a community. In our complex and interconnected environment, building and maintaining a diverse range of relationships is key to the professional and personal success for our scholars. We provide mentoring and internship opportunities in various organizations with which we have partnerships. We regularly organize networking events and offer French workshops to those who need support to further promote their successful integration into Quebec society.

The Foundation makes sure to minimize each expense and to optimize its investments to ensure that we can award as many scholarships as possible, while ensuring the sustainability of the organization. But how could we give out even more scholarships? Well, it is up to us, accomplished former Arbour scholars, but also friends and admirers of the Foundation, to contribute in return to help deserving students realize their dreams so that they in turn contribute to the economic growth of Quebec.

To mark its 15th anniversary, the Arbour Foundation will launch its first fundraising campaign and will solicit donations from former scholarship recipients as well as from all its friends and supporters. Our goal is to offer, as of next year, more scholarships entirely financed by your donations. Participating in this collective effort would allow us to offer even more scholarships, but above all, it is an opportunity for you to give back by making it possible for brilliant students to access higher education and also contribute to Quebec's economy. Just like Pierre Arbour did for you once, you could make a student's dream possible.

As a former Arbour Scholar, I am proud to inform you that I will be making the first donation to launch this campaign.

Follow closely our social media and emails encouraging you to become a donor or simply contact us to tell us about your desire to give and to get involved with us in this beautiful mission.

On behalf of the Arbour Foundation, I would like to thank you in advance for your generosity. It is your turn to change lives!

The world of tomorrow is the education of today.

Marine Hadengue, PhD

# **Board of directors**



# PHILIPPE ARBOUR, MSc, CFA

Philippe Arbour is a Managing Director at Intermediate Capital Group (ICG), a multi-asset class investment manager. Philippe focuses on direct lending to private equity-backed transactions. Before joining ICG in 2021, Philippe was a partner at London-based Palamon Capital Partners, a European middle market private equity firm, which he joined in 2013. Prior to that, Philippe spent 10 years at Lloyds Banking Group where he worked across a number of areas including trade finance, specialist credit, and leveraged finance. In 2010 he was seconded to 3i PLC, a British private equity firm. Philippe holds the CFA designation and has a Masters in Finance & Investment from Durham University and a Bachelor in Business Administration (Honours Economics) from Bishop's University.



## ME MICHEL BRUNET

Mr. Brunet practices corporate and commercial law at Dentons Canada LLP's Montreal office. He focuses on the sale and acquisition of business corporations and on their financing needs. Mr. Brunet previously held positions at Fraser Milner Casgrain (FMC), one of Dentons' three founding firms, namely National CEO.



## DIANE DE CHAMPLAIN

Most of her career has been spent in the world of communications and philanthropy. A graduate of the Université de Montréal and HEC Montréal, she was President of the Parents Association of Collège Jean-de-Brébeuf and a member of its board of directors. Later, she was entrusted with the reins of the Polytechnique Foundation as President and Chief Executive Officer whose mandate was to raise \$100 million for Polytechnique as part of the Campus Montreal campaign. The goal was exceeded with \$111 million collected. She decided at the end of the Campaign, in October 2017, to leave and continue to devote herself to other causes that are dear to her heart. Since 2017, she has been a member of the Board of directors of the Fondation des artistes, a foundation that supports artists who encounter financial difficulties during a low point in their careers.



# MARINE HADENGUE, BENG, MSC, PHD

A former scholar of the Foundation, Marine Hadengue holds a PhD degree in engineering from Polytechnique Montréal. She is currently Assistant professor at SKEMA, a global business school with campuses located in the United States, France, China, Brazil and South Africa. Before doing her PhD, Marine worked as an engineer at Essilor. She also holds an MSc in political science from Université de Montreal and a BA in mechanical engineering from Polytechnique Montréal. She did her postdoctoral studies at Polytechnique Paris.



## André Laurin

André Laurin was until recently President and CEO of BrainBank, an innovation management technology company whose software is deployed on a global scale by Fortune 500 and Global 1000 clients such as Verizon, Nestlé and Bridgestone as well as to government agencies. After a successful exit from the company that he founded in 1999, he is now an independent investor. He has a B.A. from Concordia University.



## André Monette

With degrees from Polytechnique Montréal, Mc-Gill and Harvard, Mr. Monette made a career at Johnson & Johnson, Trust Royal, Banque Laurentienne and Les Placements T.A.L Ltée, working not only in Canada but in France and Switzerland as well. He served as a management consultant and a member of the Board of Directors for Investissements Québec for over six years. Mr. Monette is on the Board of Directors of Starpax Medical and also serves on the Investment Committee of Amorchem.

# Our family continues to grow



# Joëlle Dorais

#### **Executive Assistant**

As Executive Assistant of the Arbour Foundation, Joëlle is the first contact point with the scholars and the partners. She assists the CEO with strategic development and the promotion of the visibility and mission of the Foundation, in line with the values of its founder, Mr. Pierre Arbour.



## Hussein Slim

#### **Communications Advisor**

Hussein serves as a Communications Advisor for the Arbour Foundation. His main role is to help promote scholars and the Foundation. To this end, he communicates with scholars and the academic community, provides technical and creative support to the Foundation, implements strategies and practical steps to increase social media presence and designs and develops content ideas for publication, etc.



# ÉMILIE THIBAULT

#### **Public Relations Advisor**

As Public Relations Advisor, Émilie is in charge of writing the monthly profiles which feature past scholars who accept to share their experience in order to inspire others and to showcase the Arbour community.



## KHAOULA ALAOUI MAMOUN

#### **Human Resources Advisor**

Khaoula Alaoui Mamoun, PhD student in human resources at Université de Sherbrooke, is an expert in skills development, strategic HR management and organizational development. Her research interests focus, among other things, on the influence of the soft skills of the project manager on the mobilization of his/her team and the success of the project. For several years, she has been teaching at the university level as a lecturer in HR and also leads courses and workshops on the importance of soft skills in graduate studies at the University of Sherbrooke. For over 5 years, Khaoula worked in HR consulting at the Department of Natural Resources Canada and accompanied several engineers, managers and senior leaders in the development of their soft skills. She currently works as an educational advisor at Centre competences research at the University of Sherbrooke. As our new HR Advisor, Khaoula will share her knowledge and expertise in recruiting and HR management with our scholars, helping them get ready for a job interview or to improve their employability.



### THIERNO DIALLO

#### **Internal Communications Advisor**

Thierno Diallo received his B.S. degree in physics and his M.S. degree in Energy and Advanced materials majoring in renewable energies from University of Annaba (Algeria) and CY Cergy Paris university (France), respectively. In December 2020, he received his PhD thesis "Magna Cum Laude" in electrical engineering from Université de Sherbrooke (3IT). His research focuses on heteroepitaxy of III-V materials for optoelectronic applications, synthesis, and transfer of 2D graphene, Van der Waals epitaxy of III-V and IV materials and in situ TEM growth.

Thierno joined the Arbour Foundation team in 2020 as an Internal Communications Advisor. He is managing our Teams platform that brings together the entire Arbour community. In addition to reinforcing the bonds between scholars, this collaborative platform is also be the place to share ideas, experiences, and creations.



### MORGANE GABET

#### Editor-in-chief

After studying political science and management in France, Morgane has been studying for her PhD in public health at ESPUM (University of Montreal School of Public Health) since September 2018. More specifically, she is interested in access and continuity of care in mental health in Quebec under the supervision of Marie-Josée Fleury (Douglas Institute). With various previous experiences as a manager in the private sector, Morgane is very involved in mental health promotion, particularly among vulnerable populations, both at the academic and community levels.

The position of Editor-in-Chief consists of planning, writing and general supervision of the Foundation's newsletter, in collaboration with the management team.

# Our scholarship programs

Arbour Foundation is one of the few organizations to support foreign students. Together with our university partners, we fund students in engineering, computer science and management. Our funding is allocated in the following way:
\$13,000 per year for Master's students (renewable once)
\$20,000 per year for PhD students (renewable once)
\$13,000 for MBA students (not renewable)

Our scholars are exceptional students. They have been carefully selected, first by their university and second by the Foundation's Selection Committee during a 30-minute individual faceto-face interview. Each of them embodies academic excellence and outstanding leadership skills, but, most of all, incredible perseverance. Our scholars are deserving students who, at one time or another in their lives, have overcome major challenges either personal or professional. We believe that these ambitious young persons do or will contribute to Quebec's economy by bringing innovative solutions to current and emerging issues.



# Our partners

The Arbour Foundation is proud to work with partners to offer even more opportunities to our bursary recipients and, as a result, further contribute to Quebec's economic growth.

### Universities

To financially support deserving students, we are pleased to collaborate with the following Quebec universities:













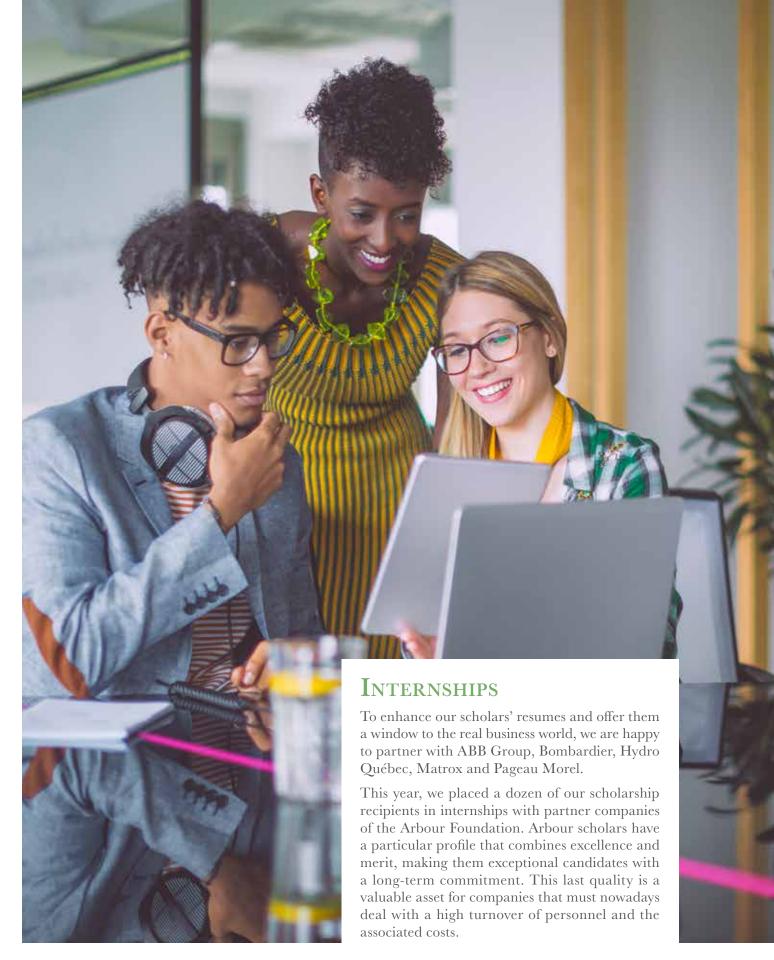






The Arbour Foundation is a member of Philanthropic Foundations Canada since 2020.





# Our scholars of 2020-2021



#### Marie-Pier Darsigny

MBA

#### Mohammedreza Fasihanifard

PhD

MEMS Enabled Photonic Integrated platforms

#### Elaheh Nikbakht

MSc

Short pairing investment strategy for leveraged ETFs using machine learning techniques - long-term approach

#### Jun Shao

MScA

Facial attributes editing using wavelet-based multilevel GANs



#### Nasrin Attari

PhD

Development of an innovative nanocomposite polymer membrane and water treatment process in order to separate micro/nanoplastics from drinking water

#### Alireza Mohtadi

MScA

Distributed Stream Processing of IoT Applications at the Edge Networks

#### Catherine St-Pierre

MScA

Recovery of the heat rejected by a high power data center

## HEC MONTREAL

**Alex Baudet** 

PhD

Franck Benichou

MSc

Camille Bourdeau Ginchereau

MSc

Social inclusion through dance, the case of D1 in Lima (supervised research project assignment)

Marie-Élaine Pelletier

 $\operatorname{MSc}$ 

Jad Adam Taher

 $\operatorname{MSc}$ 

Virtual Worlds and Cybersickness : Designing Enjoyable User Experiences



Hayagrish Balaji

MSc

Design and Analysis of a novel micro-wind turbine

Marwan Jalaleddine

MEng

Partitioned Guessing Random Additive Noise Decoding

# Our scholars of 2020-2021



#### Laura Ahunon

PhD

Development of a biomaterial for the healing of diabetic foot ulcers

#### Florent Herbinger

PhD

Integrating Data Centers in Low-Carbon Communities

#### Pierre-Yves Lajoie

PhD

Robust perception of the environment with multiple robots

#### **Charlotte Pearce**

**MScA** 

#### Émilie Thibault

PhD

Decision-making related to design and operations in complex industrial environments by studying real-time data



#### Marianne Araj

MSc

#### Pierre-André Brousseau

PhD

A Permutation Approach to the Unsupervised Stereo Matching Problem

#### Labanté Outcha Daré

РЬΓ

Comparative case study of a systemic strategy for improving the quality of health care: France -Quebec - England

#### Morgane Gabet

PhD

Quality indicators related to the management of patients after a visit to the emergency room for mental health reasons in Quebec

#### Manouchehr Zadahmad Jafarlou

PhD

Domain-Specific Version Control System



#### Khaoula Alaoui-Mamoun

PhD

Importance of soft skills in project management

#### Raphaël Jacques

MBA

#### Nathan Painchaud

PhD

Deep learning of varieties to characterize hypertension in echocardiographic imaging

#### Yannick Tendon

MBA

#### Jean Marie Tshimula

PhD

Predicting behavioral deterioration using deep learning



#### Félicia Hughes

MSc

#### Yetioman Touré

PhD

Analysis of cooperative capacity building in Africa: from translation to sustainable ownership of new cooperative practices

#### Malorie Vuillemin

MSc



# Our support to technological entrepreneurship

To encourage technological entrepreneurship, we work closely with **Mitacs, District3, QcES, Createk and Ton Équipier** and are always open to expanding our circle of collaborators. This year, we have financially supported, through Mitacs entrepreneurship program, the following promising and dynamic start-ups:









ton équipier

### **PLAKK**

Kashif Khan PhD and his team were awarded \$5,000 by the Arbour Foundation as part of Mitacs Accelerate program for their start-up, PLAKK, for the development of an artificial intelligence-based platform to improve the characterization and the identification of unstable atherosclerotic plaques.

## RENA BIOTECH

Mohammad Reza Naghdi PhD, head of the start-up RENA Biotech, received \$10,000 from the Arbour Foundation as part of the Mitacs Accelerate program. This project aims to develop a biosensor for metal detection as multiple industries, such as cosmetics, food and public health, have a need to detect heavy metal contamination.

## VITAL TRACER

The start-up founded by Azadeh Dastmalchi PhD and Zahra Zangenehmadar, PhD, Vital Tracer, received a \$5,000 grant from the Arbour Foundation as part of Mitacs Accelerate program for their optimized cuffless continuous blood pressure measurement technique using machine learning techniques such as artificial neural network, support vector machine and regression analysis.

## NEURAL DRIVE

Marco Bonizzato and his partners have launched Neural Drive, a start-up working to develop a medical device to stimulate the brain to improve locomotor recovery from incomplete spinal cord injury. The team was awarded \$8,000 from the Arbour Foundation as they ranked first at the Centre d'entrepreneuriat Poly-Université de Montréal competition.

## **ALEO VR**

Aleo VR is a pedagogical tool in the form of a virtual reality experience that aims to foster the development of school-age children with learning disabilities. This start-up co-founded by Caroline Bazinet has received \$10,000 in support from the Arbour Foundation as part of the Concours Entrepreneuriat Poly.

# Beyond financial support: the mentorship

The Foundation has a mentorship program. The members of its Board of Directors, according to their specific skills, are available to advise and guide selected fellows in their studies and in their respective careers.

Each scholarship recipient can be mentored for the duration of the scholarship. This mentoring program consists of regular meetings between the mentor and the student. The student is then fortunate to benefit from the great experience and the network of his/her mentor.

Each year, about fifteen of our laureates are fortunate enough to be mentored by our administrators. These students benefit from personal and professional support allowing them to excel even more. They also benefit from the precious network of our administrators, which allows some to find jobs or internships in prestigious organizations. Each year, a survey is distributed to these students to check if their expectations have been met. We will strive to continue to offer these opportunities to our fellows!



#### Testimonial from mentor Diane de Champlain

"What could be more rewarding and engaging than to share one's life and work experience with students who are so eager to learn. Not only does the Arbour Foundation offer financial support to its scholars, but it also provides opportunities for Board Members who wish to do so to accompany them diligently throughout their studies and their career choices. This is the perfect opportunity to create lasting relationships and to give back!"



"I am very grateful to have received the Arbour Foundation scholarship for the second year of my PhD. Thanks to this scholarship, I not only benefited from an important financial support that has allowed me to concentrate on my studies, but also from the precious advice of Marine Hadengue as part of the mentoring program. I was able to obtain this prestigious scholarship that will cover the rest of my studies, and I would like to thank the Arbour Foundation again for the support it has given me!"

**Alex Baudet**PhD Candidate
Arbour Scholar 2020-21

"The Arbour Foundation's proposal to offer a mentoring program is a great initiative, and is worthy of its mentors. I was very fortunate to be paired with Mr. André Monette and the experience was more than enriching on many levels. I am convinced that it will continue to be so during the next few years, which will be very significant in my career. Indeed, the invaluable help of my mentor, as well as the support of the Foundation, is felt long after the year of my scholarship; it is a community whose benefits are invaluable.

I began my relationship with my mentor as a late-stage PhD student: I was looking for my next career move. I know what I'm interested in and I have the motivation to take on big projects. But, in a field that is so vast, such as entrepreneurship and private technology companies, I was losing my bearings and was not getting involved in important discussions where my expertise and my opinion would have been more than relevant. Mentorship has allowed me to grow in the projects that interest me. My mentor allowed me to take a step back from my own skills and those of other stakeholders. He led me to re-evaluate the value of my skills. Thanks to his vast experience, his extensive career and his leadership perspective, but even more so thanks to his listening skills, I was able to combat my impostor syndrome. He helped me understand how to value my expertise and my abilities in the eyes of my associates to such an extent that my expectations and those of others towards me have evolved in my favor. My mentor has provided me with a sense of validation but has also sharpened my critical thinking about the projects that are proposed to me to ensure that they are worthy and worthwhile. "



#### Gabrielle Crétot-Richert,

BEng, MEng | PhD Candidate

NSERC-EERS Industrial Research Chair in In-Ear Technologies

"Thank you for this program that offers us the opportunity to grow both professionally and personally!

I loved the year I was able to share with Marine Hadengue. I found her to be a confident and a compassionate human being. I was fortunate to have her advice on a publication I was working on and that was very helpful for me. I am very happy to have participated in the mentoring program.

For me, this program was very helpful this year when I needed a listening ear on a personal and academic level."

2020 - 2021 Scholar



# Events organized by the Foundation in 2020

## SUPPORT TO FACE THE PANDEMIC

During this exceptional time, the Foundation wanted to adjust its processes to support its scholars as much as possible. Instead of holding the networking event planned for early 2020, we have set up a series of virtual meetings to provide psychological support for our students. Some of them have agreed to share their expertise on topics such as stress management during the Covid-19 pandemic or the place of soft skills in the doctoral and professional career. We would like to take this opportunity to warmly thank our lecturers, Mrs. Khaoula Alaoui Mamoun and Loubna Makki Berrada. Thank you for your commitment and congratulations for your exceptional careers.

# A COMMITMENT TO ENTREPRENEURSHIP

At the end of 2020, the Foundation organized a large-scale virtual public event focusing on technological entrepreneurship in Quebec and its importance for economic growth. On November 5th, 2020, more than 80 students and participants involved in the entrepreneurial ecosystem of Quebec connected for this beautiful event. We had the chance to hear Professor Mathieu Picard, cofounder of CREATEK, talk about the crucial shift from science to entrepreneurship. Jean-Philippe Sicard, CEO and co-founder of Ton Équipier, also gave a workshop entitled "How to miss your product launch". We also had the opportunity to hear testimonies of actual entrepreneurs, some of them financially supported by the Arbour Foundation: Caroline Bazinet (Founder, ALEO VR), Hughes La Vigne (Co-founder, DeLeaves), Azadeh Dastmalchi (CEO and Co-founder, VitalTracer, winner of the Mitacs Social Entrepreneur and Pitch Competition Award), Reza Naghdi (Founder, RENABIOTECH), Kashif Khan (CEO and Cofounder, PLAKK) and finally Marco Bonizzato (Founder, NEURALDrive).



The Foundation would like to highlight its productive partnership with Mrs. Ana Marinescu from URBANA Marketing for the successful organization of the 2020 events.

# Achievements and successes of our scholars

#### Laura Ahunon

PhD

Polytechnique Montréal

#### **PUBLICATIONS:**

Ahunon, Laura, et al. "A novel image analysis algorithm reveals that media conditioned with chitosan and platelet-rich plasma biomaterial dose dependently increases fibroblast migration in a scratch assay." Biomedical Physics & Engineering Express 6.6 (2020): 065021

#### **CONFERENCES:**

Oral presentation at the Annual Meeting of the Canadian Biomaterials Society (2021)

#### SCHOLARSHIPS:

FRQNT Research Grant (B2X)

#### **OPPORTUNITIES:**

Chargée de Travaux Pratiques - Thermodynamique Statistique Biomoléculaire

Présidente de l'Association des Étudiants des Cycles Supérieurs de Polytechnique

#### Marianne Araj

MSc

École de santé publique de l'Université de Montréal

#### **PUBLICATIONS:**

CIRANO (2020). Qualité de vie reliée à la santé et productivité des travailleurs. La Santé Au Cœur De La Relance Économique Du Québec, 2020PR-01, 61 - 65. Available at https://cirano.qc.ca/fr/sommaires/2020PR-01

#### **OPPORTUNITIES:**

Intern in health services administration at the Sainte Justine Hospital project office: clinical computerization mandate in the information resources department (2021.03 - 2021.06)

#### Nasrin Attari

PhD

École de technologie supérieure

#### **PUBLICATIONS:**

N. Attari, H. Robert, Morphological investigation of cellulose acetate nanofibrous membranes, Proceedings of the 4rd International Conference of Recent Trends in Environmental Science and Engineering (RTESE'20) (2020). Morphological investigation of Cellulose Acetate nanofibrous membranes

#### SCHOLARSHIPS:

\$ 6 500 Bourse d'encouragement de l'ÉTS

#### Hayagrish Balaji

MSc

McGill University

#### **OPPORTUNITIES:**

Professionally Certified by Google and IBM in the following areas: Smart Analytics, Machine Learning and AI on GCP,Essential Google Cloud Infrastructure: Foundation and Core Infrastructure,Cybersecurity tools and Cyber Attacks. Aced the Google Analytics Individual Qualifier examination (GAIQ) with 96% and completed certification as an advanced user of Google Analytics and Data Analysis algorithms

#### Camille Bourdeau Ginchereau

MSc

HEC Montréal

#### PUBLICATIONS (SUBMITTED):

Télémédecine avec MSF Canada et HEC Montréal (Pr. Yves Plourde)

Technologies sociales - cas de D1 au Pérou (Pr. Marlei Pozzebon)

#### SCHOLARSHIPS:

HSBC (Winter 2020) – HEC Montréal, Financial support (winter 2021) – Ecole des Entrepreneurs du Québec

Pôle IDEOS – Research project (winter 2021)

Ville-Marie Rotary Club Leadership (winter 2021)

Danielle McCann Scholarship (winter 2021)

#### **OPPORTUNITIES:**

Doctors without Borders Canada (summer 2021); Research Project with D1 in Lima, Peru (winter-summer 2021)

VP Communications & Marketing (AECS HEC Montréal 2020-2021)

President, Sports Committee AECS HEC Montréal

#### Pierre-André Brousseau

PhD

Université de Montréal

#### PUBLICATIONS:

Brousseau, Pierre-André, and Sebastien Roy. "Calibration of axial fisheye cameras through generic virtual central models." Proceedings of the IEEE/CVF International Conference on Computer Vision. 2019

#### Labanté Outcha Daré

PhD

Université de Montréal

#### PUBLICATIONS (SUBMITTED):

Dare LO, Champagne F, Denis J-L: A Comparative Multiple Case Study of a Systematic Health Care Quality Improvement Strategy: A Research Protocol, Journal of Public Health Research

Dare LO, Ste-Marie G, Yordanov Y, Champagne F, Denis J-L : A Review of Some International Experiences on Health Care and Services Quality Management Functions (HCSQMF)

Cadeddu S, Daré LO, Denis J-L: Bottom-up innovation in health care organizations: a scoping review

#### **CONFERENCES:**

88th ACFAS Conference: Oral presentations

#### SCHOLARSHIPS:

Wilerose Desrosiers and Pauline Dunn Fund SAE 2020 Scholarship (\$1,500)

88th ACFAS Conference Registration and Membership Grant

#### Morgane Gabet

PhD

Université de Montréal

#### **PUBLICATIONS:**

1. Gabet, M., Grenier, G., Cao, Z. et al. Implementation of three innovative interventions in a psychiatric emergency department aimed at improving service use: a mixed-method study. BMC Health Serv Res 20, 854 (2020). https://doi.org/10.1186/s12913-020-05708-2; 2. Gabet, M., Grenier, G., Perrottet, D. & Fleury, M.-J. (2020). Le soutien postlogement transitoire auprès des femmes en situation d'itinérance: besoins, implantation et impact d'une étude pilote. Santé mentale au Québec, 45 (1), 79–103. https://doi.org/10.7202/1070242ar

#### SCHOLARSHIPS:

6,000 \$ - MITACS, Research Training Grant; \$1,500 - IUD (University Institute on Addictions) - Offer of financial support to students for writing and publishing scientific articles

#### Marwan Jalaleddine

MEng

McGill University

#### **PUBLICATIONS:**

S. M. Abbas, T. Tonnellier, F. Ercan, M. Jalaleddine, and W. Gross, "HIGH-THROUGHPUT VLSI ARCHITECTURE FOR SOFT-DECISION DECODING WITH ORBGRAND," presented at the ICASSP, 2021

#### **SCHOLARSHIPS:**

McGill's Graduate Excellence Fellowship (2019-2021)

#### Pierre-Yves Lajoie

PhD

Polytechnique Montréal

#### **PUBLICATIONS:**

P.-Y. Lajoie, B. Ramtoula, Y. Chang, L. Carlone, and G. Beltrame, "DOOR-SLAM: Distributed, Online, and Outlier Resilient SLAM for Robotic Teams," IEEE Robotics and Automation Letters, vol. 5, no. 2, pp. 1656–1663, Apr. 2020, doi: 10.1109/LRA.2020.2967681

P.-Y. Lajoie, S. Hu, G. Beltrame, and L. Carlone, "Modeling Perceptual Aliasing in SLAM via Discrete—Continuous Graphical Models," IEEE Robotics and Automation Letters, vol. 4, no. 2, pp. 1232–1239, Apr. 2019, doi: 10.1109/LRA.2019.2894852

#### **SCHOLARSHIPS:**

FRQNT Doctoral Research Award

#### **OPPORTUNITIES:**

Participation in the IGLUNA 2021 mission of the European Space Agency. Lab manager for Integrator Project #3 (computer engineering)

#### Manouchehr Zadahmad Jafarlou

PhD

Université de Montréal

#### **PUBLICATIONS:**

Zadahmad, Manouchehr, Eugene Syriani, Omar Alam, Esther Guerra, and Juan de Lara. "Domain-specific model differencing in visual concrete syntax." In Proceedings of the 12th ACM SIGPLAN International Conference on Software Language Engineering, pp. 100-112. 2019

#### **SCHOLARSHIPS:**

The Mitacs Accelerate Internship on project "Semantic versioning of model changes in decision support systems", 2020

#### Mohammadreza Fasihanifard

PhD

Concordia University

#### **PUBLICATIONS:**

Fasihanifard, M., Pottier, P., & Packirisamy, M. (2020, May). Asymmetric Stiff Slab Waveguide Actuation With Footprint-Optimized Mechanical Platform. In 2020 Photonics North (PN) (pp. 1-1). IEEE

#### SCHOLARSHIPS:

Startup company in biosensing point of care area

#### Alireza Mohtadi

MScA École de technologie supérieure

#### **PUBLICATIONS:**

H. Haddadpajouh, A. Mohtadi, A. Dehghantanaha, H. Karimipour, X. Lin and K. -K. R. Choo, "A Multi-Kernel and Meta-heuristic Feature Selection Approach for IoT Malware Threat Hunting in the Edge Layer," in IEEE Internet of Things Journal, doi: 10.1109/JIOT.2020.3026660

Mohtadi, A., Gascon-Samson, J. (2020) Poster: Dependency-Aware Operator Placement of Distributed Stream Processing IoT Applications Deployed at the Edge. Symposium of Edge Computing (SEC) 2020 Demos and Posters

#### Elaheh Nikbakht

MSc

 $Concordia\ University$ 

#### **SCHOLARSHIPS:**

Raymond Decarie Graduate Scholarship in Commerce & Administration.

Excellence Scholarship - Centre Desjardins d'innovation en financement d'entreprises

Mitacs Accelerate

#### **OPPORTUNITIES:**

"Research Intern" at squarefeet, working on the project named "predicting real estate prices with machine learning techniques". 2021-3 to 2021-6

#### Nathan Painchaud

PhD

Université de Sherbrooke

#### PUBLICATIONS:

N. Painchaud, Y. Skandarani, T. Judge, O. Bernard, A. Lalande, et P.-M. Jodoin, "Cardiac Segmentation With Strong Anatomical Guarantees", IEEE Transactions on Medical Imaging, vol. 39, n 11, p. 3703-3713, nov. 2020, doi: 10.1109/TMI.2020.3003240

Y. Skandarani, N. Painchaud, P.-M. Jodoin, et A. Lalande, "On the effectiveness of GAN generated cardiac MRIs for segmentation", présenté à Medical Imaging with Deep Learning, janv. 2020, Consulté le: avr. 29, 2020. [En ligne]. Disponible à: https://openreview.net/forum?id=f9Pl3Qj3\_Q

#### **Charlotte Pearce**

**MScA** 

Polytechnique Montréal

#### **OPPORTUNITIES:**

Project Officer in space medicine at Canadian Space Agency. Summer 2021: Project leader at ABB - Use of digital data. Fall 2021: Fellowship at Siemens Healthineers in Innovation Think Tank Lab in Erlangen, Germany

Ambassador for Le Code des Filles

#### Jun Shao

MScA

Concordia University

#### **PUBLICATIONS:**

Jun Shao, Tien D. Bui, Wavelet-based Multi-level Generative Adversarial Networks for Face Aging, IEEE TIFS, 2021, in Second Round Revision

Jun Shao, Tien D. Bui, Wavelet-based Multi-level Generative Adversarial Networks for Continuous Facial Expression Translation in a progressive and parallel training way, will be submitted to an IEEE transactions journal

#### **OPPORTUNITIES:**

"Score Calibration in deep learning" at Matrox, 2021.1-2021.4

#### Catherine St-Pierre

**MScA** 

École de technologie supérieure

#### **OPPORTUNITIES:**

Internship in building mechanics in the summer of 2021 in the energy efficiency team at Pageau Morel

#### **SCHOLARSHIPS:**

Hydro-Quebec research support grant - Energy efficiency axis \$ 4 000 NSERC grant of \$17,500

#### AWARDS:

3rd prize from the Quebec Association for Renewable Energy Production (AQPER) in the student contest 3 minutes to change the world

#### Jad Adam Taher

MSc

HEC Montréal

#### **PUBLICATIONS:**

J. A. Taher, A.Q. Tchanou, P.-M. Léger, J. Boasen, S. Senecal, M. Fredette: Collaborative Use of a Shared System Interface: The Role of User Gaze — Gaze Convergence Index Based on Synchronous Dual-Eyetracking, Applied Sciences Journal

#### **SCHOLARSHIPS:**

Entrance Scholarship – HEC Montréal

Pierre-Donaldson Scholarship – HEC Montréal

Support for self-employment – Ecole des Entrepreneurs du Québec

#### AWARDS:

Rewards and Recognition - Sun Life Canada

Award of excellence – HEC Montréal

#### **Yannick Tendon**

**MBA** 

Université de Sherbrooke

#### **OPPORTUNITIES:**

Marketing and communication coordinator at American Biltrite

#### **SCHOLARSHIPS:**

Ronald Crowley Scholarships (Academic excellence)

Banque Nationale Business Scholarships (Academic excellence)

#### AWARDS:

Top graduating student in Business Administration (Marketing & Entrepreneuriat)

#### Émilie Thibault

PhD

Polytechnique Montréal

#### SCHOLARSHIPS:

Neil R. Mitchell and Danièle Dumais Excellence Scholarship

TransCanada Energy Community Leaders Scholarship

#### **OPPORTUNITIES:**

Lecturer - Integrative Project #4 and Energy Optimization of Industrial Processes (Natural Resources Canada) as well as engineering consulting mandates for an engineering consulting firm

ABB as Project Manager, Digital Data Utilization (Summer 2021). McKinsey Australia (2022) to write an article on data analysis and decision making in industry

#### Yetioman TOURE

PhD *UQAM* 

#### **PUBLICATIONS:**

Touré, Y. (2021). Coopératives agricoles africaines : de l'instrumentalisation aux défis d'émancipation https://ieim.uqam.ca/spip.ph-p?page=article-cooperation&id\_article=12946

#### SCHOLARSHIPS:

Scholarship « Enjeux managériaux et perspectives internationales » de la Banque Scotia-IEIM (Institut d'études internationales de Montréal)

#### Jean Marie Tshimula

PhD

Université de Sherbrooke

#### **PUBLICATIONS:**

Tshimula, J.M., Chikhaoui, B., Wang, S., "COVID-19: Detecting Depression Signals during Stay-At-Home Period," arXiv:2103.00597

Tshimula, J.M., Chikhaoui, B., Wang, S., "Investigating Moral Foundations from Web Trending Topics," arXiv:2102.11928

Tshimula, J.M., Chikhaoui, B., Wang, S., "On Predicting Behavioral Deterioration in Online Discussion Forums," 2020 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining

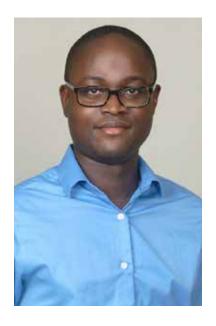
Tshimula, J.M., Chikhaoui, B., Wang, S., "A Pre-training Approach for Stance Classification in Online Forums," 2020 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining

Tshimula, J.M., Chikhaoui, B., Wang, S., "A New Approach for Affinity Relationships Discovery in Online Forums," Social Network Analysis and Mining Journal

Tshimula, J.M., Chikhaoui, B., Wang, S., "HAR-search: A Method to Discover Hidden Affinity Relationships in Online Communities," 2019 IEEE/ACM International Conference on Advances in Social Networks Analysis and Mining



# **Testimonials**



# Kwassi Holali Degue, PhD

"Be a rainbow in someone else's cloud" is one of my favorite quotes from Dr. Maya Angelou. A doctorate degree is a path full of challenges and difficult moments. The Arbour Foundation was a rainbow in my clouds; it was always there to support me through it all. The Arbour scholarship made it possible for me to focus totally on my research work, which has helped bring forth my potential. As a consequence, I got noticed by the Massachusetts Institute of Technology (MIT) where I am currently designing control algorithms for efficient space management while collaborating with engineers and researchers from NASA (National Aeronautics and Space Administration). In return, I am committed to defend the principles of Enlightenment in order to contribute to the realization of Mr. Pierre Arbour's vision, while, at the same time, hoping to be a rainbow in someone else's cloud like the Foundation has been for me. Hopefully, I will use the skills that I have acquired in the security of cyber-physical systems, in data privacy-preserving algorithms design, and in automatic control for the benefit of the province of Quebec after my return."

"I want to say thank you once more, you and the Arbour Foundation, for your support and helping me to change my life."

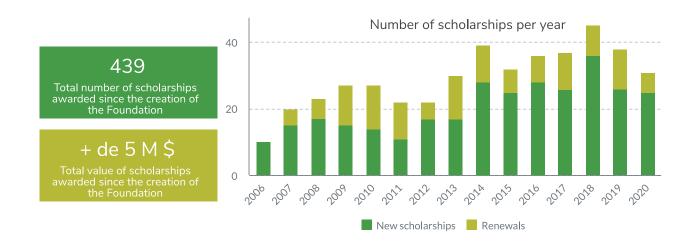
Nasrin Attari Scholar 2020-21 "Today I sat back and just thought about how grateful I am to you for the scholarship I received this year. I just wanted to take the time to thank you again, it really does make a difference in the lives of students.

Thank you for doing what you do. That's all I wanted to say."

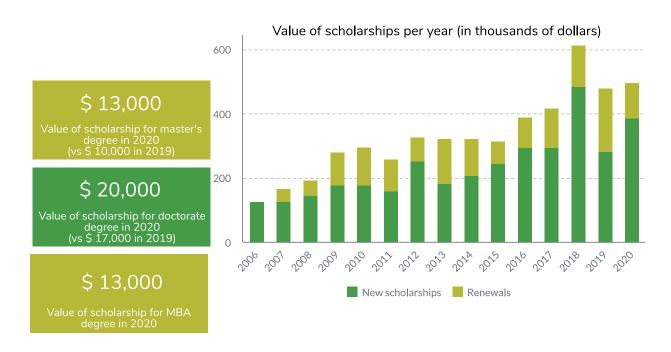
Scholar 2020-21

# Key Performance Indicators

### NUMBER OF SCHOLARSHIPS

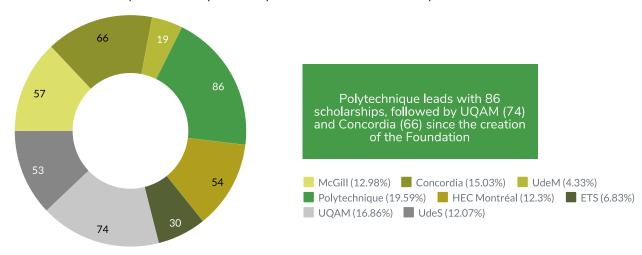


## AMOUNT OF SCHOLARSHIPS



## PER UNIVERSITY

Number of scholarships awarded by university since the Foundation's inception



## PER DIPLOMA

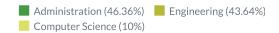
#### Scholarships awarded by the Foundation (%)

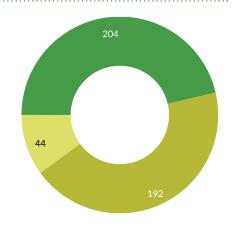


- 29 % Decrease in the number of PhD scholarships compared to 2019

## PER PROGRAM

Number of scholarships awarded by discipline since the Foundation's inception





## SOCIAL INDICATORS

#### % of international students among our scholarship recipients



#### 35 %

International students in 2020 versus 37% in 2019 and 42% in 2018

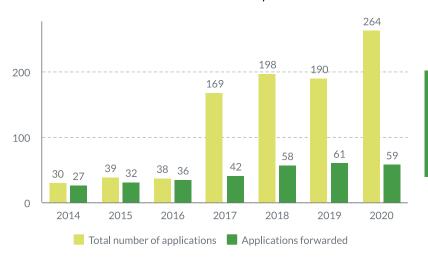
#### 264

Total number of applicants for the Arbour scholarships in 2020 compared to 190 in 2019

#### + 700%

Growth in the number of applicants between 2016 and 2020

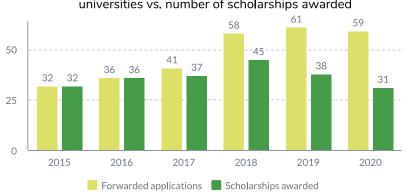
# Total number of applications received vs. number of applications forwarded to the Foundation by universities



#### Approx. 22 %

Percentage of applications selected by universities in 2020 forwarded to the Foundation (versus 30% in 2019 and 97% in 2016)

## Number of applications forwarded to the Foundation by universities vs. number of scholarships awarded



#### 50

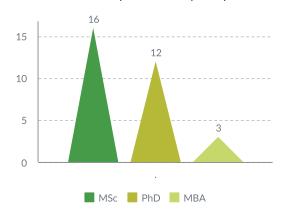
Number of interviews conducted in 2020 to select candidates

#### 47%

Percentage of applications refused by the Foundation in 2020 (vs. 38% in 2019 and 22% in 2018)

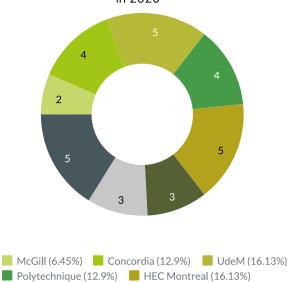
# Report by the Selection Committee

#### Number of scholarships awarded per diploma in 2020



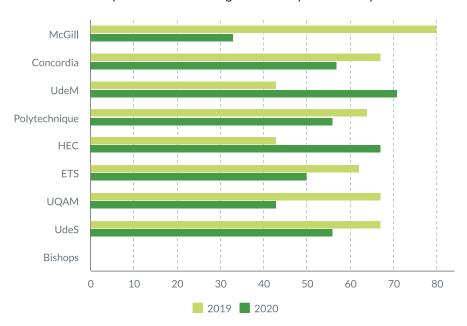
31 scholarships awarded vs. 59 interviewed candidates

# Scholarships awarded per university in 2020



■ ETS (9.68%) ■ UQAM (9.68%) ■ UdeS (16.13%)

#### Acceptance rate following interviews/per university



# Our 2020-2021 Donors

THE ARBOUR FOUNDATION WOULD LIKE TO SINCERELY THANK AND ACKNOWLEDGE THE FOLLOWING DONORS FOR THEIR FINANCIAL SUPPORT THIS YEAR:

Alexandre Guilbault	\$ 1,100
Joel Kwan	\$ 1,000
Daniel Lavigueur	\$ 700
Sébastien Désilets	\$ 250



# The world of tomorrow is the education of today

Did you know that some of our donors are former scholarship recipients?

If you would like to support our mission and allow more students to benefit from the Arbour Foundation scholarships, you can make an online donation by visiting www.fondationarbour.com





Anna Le Masson

1959 - 2021

#### Reverence

Anna Le Masson

66x50 | Oil on canvas

# Tribute to Anna Le Masson (1959-2021)

Graphic designer of the Arbour Foundation for the last 5 years, and mother of Marine, CEO of the Foundation, Anna Le Masson sadly passed away on April 24th, from an illness.

Illustrator, roughman, graphic designer and artist (painter), drawing was her true passion. With her diploma in hand, Anna shared her talent at Y&R Paris where she learned the basics of her profession in advertising, at a time when art directors were drawing coconut trees on storyboards, in order to combine the useful with the pleasant while working.

She finally spread her wings, first in Paris where she became the youngest freelance roughman, working for the big Parisian agencies: PUBLICIS, TBWA, DDB, CLM BBDO, LEO BURNETT, OGILVY... and always Y&R, the "YOUNG", of course.

The twists and turns of life, but most of all the unique colors of the Caribbean, led her there one day, which gave her the opportunity to expand her career and become an illustrator. Her encounter with desktop publishing (DTP) expanded her creative potential in drawing and in graphic design, while maintaining the quality of work which her customers were used to, whether they were nearby or thousands of miles away.

Finally, there was oil painting, her private garden, in which she expressed what inspired her. By choosing one of her paintings as the visual for this year's annual report, we pay her tribute and thank her warmly for her work for the Arbour Foundation.

Anna, you will be deeply missed.

