

The background of the cover is a blue-toned image. On the left, a hand is shown reaching out towards the center. In the center and right, there is a stylized globe of the Earth, overlaid with a network of white lines and glowing nodes, representing digital connectivity. The overall aesthetic is futuristic and technological.

STEM Fellowship

*A community of digital innovation,
research and mentorship*

Annual Report
2019

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An introduction to STEM Fellowship

STEM Fellowship is a Canadian, youth-led, not-for-profit organization that uses mentorship and experiential learning to equip students with skills in data analytics, science communication and inquiry. We began our activity in February 2015 and soon expanded to high schools and universities across Canada. Currently, we have 20 university branches and 15 high school chapters in eight provinces and we're still growing!

We present a new philosophy for student-driven experiential learning in STEM and provide youth with tools that will help them in the current STEM research and education ecosystem. We are a virtual meeting place for advanced STEM learning: a place where students can collaborate to develop their ideas, discuss ideas with world-class experts and obtain opportunities for peer-review and scholarly publications of original research.



Our highschool branches



Our university branches

A NOTE FROM OUR **STEERING COMMITTEE & BOARD OF DIRECTORS**

STEM Fellowship is a national leader in creating the digital innovators of tomorrow. We have experienced **multiple accomplishments** this year with the increase in students taking initiative in our programs and executive team, allowing our organization to take part in introducing more youth to STEM fields. Our accomplishments include the creation of our **high school chapters program**, the expansion of university branches and programs including **STEMpowerment** to new cities, and establishing new **partnerships and sponsorships**.

We also had a **9-fold increase** in Scholarly Writing Challenge Submission rates and **3-fold increase** in Big Data Challenge participation rates this year. We expanded our High School Research Exploration Opportunity to new cities to help more students across Canada explore a future in STEM research. Furthermore, we grew our **executive network significantly** and welcomed more talented, hardworking, and motivated students to our team.

Our chapters ambassador program was developed and successfully launched in 2019 across **Alberta, British Columbia, and Ontario**. Various high school students choose and focus their chapter activities on one of the main tenets of STEM Fellowship. We also successfully cultivated a small **community** of STEM Fellowship chapter heads (approximately 15) whom, regardless of their location, are able to connect and learn from each other on student leadership, facilitating and executing successful STEM Fellowship-based in-school activities, and encourage high school students to get involved in programs including the Big Data Challenge and Scholarly Writing Challenge. Looking to the next year, we aim to expand the **scope of our chapter program** in participating provinces along with new ones. We also aim to **expand our chapter initiatives**, in terms of workshops, webinars, and mini in-school based academic challenges, which students can more easily adapt and facilitate in their high schools. Given its starting success, we hope that our chapters program becomes increasingly enriched with resources and encouraging learning environment for future digital learners.

In addition to these achievements, it has been most rewarding to hear the personal stories of students' experiences with STEM Fellowship, such as how a student's relationship with a STEMpowerment mentor allowed them to discover new interests, or how students were inspired by our national literature review competition to write secondary research manuscripts which have been published.

We **thank everyone** for the role they played in this productive year, as we brought STEM Fellowship to the next level and provided more students across Canada with opportunities to explore their future and their careers.

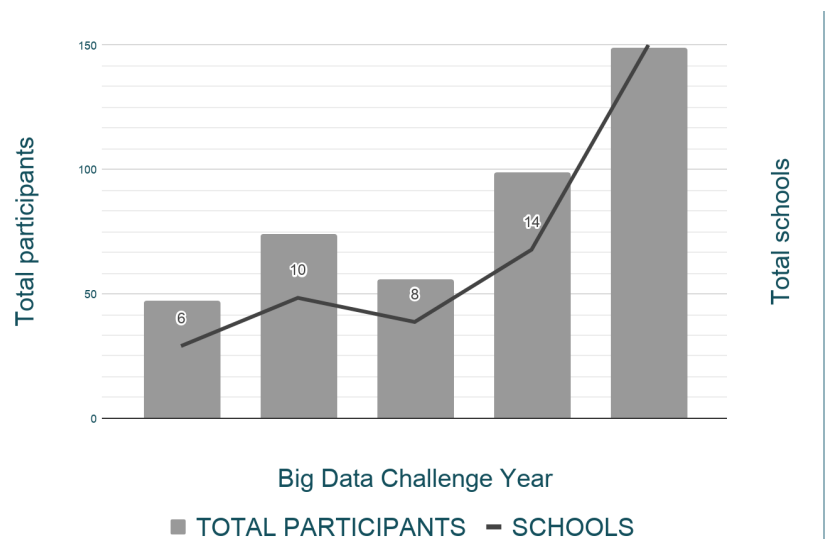
**- STEM Fellowship Steering Committee
& Board of Directors**

STEM Fellowship's EVENTS

BIG DATA CHALLENGE

The STEM Fellowship Big Data Challenge (BDC) is a unique inquiry-based learning program that enables high school students to strengthen their critical thinking and problem-solving skills while gaining familiarity with data science. By encouraging students to conduct research projects to collaboratively address issues of real-world significance, the BDC fosters the development of young leaders, innovators and digital citizens.

Teams of up to 4 students are each provided with data sets, workshops, learning resources and tools for data analysis. We present the general competition theme, within which you define a research topic of interest. With the guidance of peer and expert mentors, teams then undertake exploratory analysis of open data to develop sustainable solutions to local and global issues. At the end of the competition, teams submit their research findings in the form of a scientific manuscript. The top teams are invited to present their findings in front of a panel of industry and academic experts in the field.



HIGH SCHOOL BIG DATA CHALLENGE

The 2018-2019 High School BDC focused on the data analysis of the Canadian Space Agency (CSA), the National Aeronautics and Space Administration (NASA) and the European Space Agency (ESA) open data. The main purpose of this competition was to produce a graphical summary of data and reveal the impact of environmental conditions on human health and overall well-being. The HSBDC invited Canadian high school students to go further into predictive analytics of optimal environmental characteristics for long-term, long-distance space travel.

This Challenge was delivered at both Toronto and Calgary. A total of 44 teams, 148 participants from over 27 schools across Canada participated in this year's competition.

Academic Prizes awarded:

- SciNet Supercomputer Tour.
- Scholarly publication of all project abstracts and full manuscripts publication of winning project papers in the STEM Fellowship Journal, published by Canadian Science Publishing.
- League of Innovators (LOI): Invitation to participate in 2 LOI Labs, allowing you the chance to scale your research to a business venture.

Monetary prizes awarded:

- \$1000 SAS Analytics Talent Award- Toronto
- \$1000 SAS Analytics Talent Award- Calgary
- \$1000 RBC Arnold Chan Memorial Award for Student Innovation- Toronto
- \$1000 RBC Arnold Chan Memorial Award for Student Innovation- Calgary
- \$1000 Digital Science Scholarly Communication Award

UNDERGRADUATE BIG DATA CHALLENGE

The 2018-2019 Undergraduate BDC encouraged undergraduate students to explore a computer-based approach to the pharmacokinetics and pharmacodynamics of recreational drugs, and quantify their xenobiotic effects as well as the impact exerted by these drugs on human health and on society. The challenge was based on the analysis of open data from Health Canada, United Nations Office on Drugs and Crime, Drug Bank, the National Cancer Institute, Google Data Search, and other open data sources identified by students.

This Challenge was delivered at both Toronto and Calgary. A total of 95 teams, 234 participants from over 28 schools across Canada participated in this year's competition

Academic Prizes awarded:

- Scholarly publication of project abstracts and full manuscripts of winning project papers in the STEM Fellowship Journal by Canadian Science Publishing

Monetary prizes awarded:

- \$1000 Roche Analytics prize- Toronto
- \$1000 Roche Analytics prize- Calgary
- \$1000 Roche Scholarly Communication prize- Toronto
- \$1000 Roche Scholarly Communication prize- Calgary
- \$1000 Schulich Award Student Innovation Prize - Toronto
- Two \$1500 Hunter Hub Entrepreneurship and Innovation Awards- University of Calgary students only

"I cannot express my gratitude towards STEM Fellowship enough. Not only has the Big Data Challenge catapulted me into the world of data analytics and scientific research, but it has also introduced me to supportive mentors across industry and academia."

- Tony Xu (2016 UBDC Contestant)

"The 2018 STEM Fellowship Big Data Challenge was an incredible experience. The Challenge helped me develop skills in the field of analytics, and taught me the importance of big data in the modern world; the mentorships, online training, and connections I received were invaluable. If you are a high school student, I would highly recommend participating in this incredible program - you won't regret it! I am endlessly grateful to have had the chance to participate."

- Katherine Gotovsky (2018 HSBDC Contestant)

SCHOLARLY WRITING CHALLENGE

The Scholarly Writing Challenge provides high school students with an opportunity to showcase their scientific writing and obtain valuable feedback. The top 5 winning manuscripts will be published in the STEM Fellowship Journal. The 2019 Scholarly Writing Challenge received 103 submissions, which are now being reviewed.

STEM FELLOWSHIP JOURNAL

The STEM Fellowship Journal is an open-access, peer-reviewed journal published by Canadian Science Publishing. Submissions are reviewed by the student editorial board before being peer reviewed by a professional a relevant field.

SCHOLARLY WRITING WORKSHOP

Scholarly Writing Workshops introduce university students to research, editing articles, and writing high quality research articles. To date, Scholarly Writing Workshops have been held at 15 universities across Canada.

"I had a great time working on this project with my team members for those several months. It opened up doors in terms of what future careers this program could lead to/give insights into and it was a great way to expand certain skills (i.e. presentation, programming, research)."

- Maria Pasyechnyk

"I very much enjoyed the experience. It was a great opportunity to learn and to expand my own knowledge; especially approaching this as a computer scientist and needing to research the domain knowledge."

- Richard Mills

CANADIAN YOUNG PHYSICIST'S TOURNAMENT (CaYPT)

Based off the International Young Physicists' Tournament, CaYPT is Canada's very own youth centred physics competition. The winning team also gets the chance to compete in the International Young Physicists' Tournament representing team Canada. With the aim of providing open-ended physics problems with real world application, CaYPT hopes to inspire the next generation of Canadian physicists.

50 students in 10 teams registered in the CaYPT 2019.

Academic Awards

- Teams who finished among the top 15% received a first-place certificate and a gold medal, followed by a second-place certificate and silver medal for the next 15%, and a third-place certificate and a bronze medal for the next 20%. Some of these teams developed their presentations into a manuscript and were published in the STEM Fellowship Journal.

STEMpowerment

Mentorship

In line with STEM Fellowship's goal to establish a scholarly and innovative network of students, STEMpowerment's mentorship program aims to provide the youth of Canada with mentorship from STEM undergraduates and graduates. With the goal of helping the STEM leaders of tomorrow, the focus of the coaching can be career, life or academic based. The network was made up of 52 new mentees, as well as 10 new mentors. To this date, roughly 30 people have signed up for a new program, known as PowerUp.

- 260 students from 34 cities across Canada participated in STEMpowerment

Research Exploration Opportunity Program

STEMpowerment's Research Exploration Opportunity programs are offered in various universities throughout Canada. Some of these universities include:

- University of Toronto
- University of Calgary
- University of Alberta
- University of Guelph
- Queen's University
- University of British Columbia
- McGill University

The STEM Fellowship Research Exploration Opportunity program offers an opportunity for high school students to experience scientific research at an academic lab for five days over March break. Student interns are mentored by postdoctoral fellows or graduate students and engage in cutting edge research in a specific field. This program allows interns to explore careers in research and develop insight into scientific inquiry through the research process. Student participants will not only be exposed to key research techniques and learn about the day-to-day life of graduate students and researchers, but will also be able to interact closely with mentors who can answer questions about university, graduate school, and careers in the STEM fields. Students are able to apply for a broad range of projects to meet their specific interests and career aspirations. Ultimately, this program offers an immersive research experience that helps students gain a realistic perspective of research and early exposure to academia.

"I have always found a love for both biology and coding, and the shadowing program has shown me how a job in research could integrate these two sectors together. This is something that I would never have known if it weren't for this program. What made this internship great was seeing intelligent people from all around the world gathering to the University of Toronto for a united goal of exploring the realms of science. This internship has sparked a greater passion for research in me, and I might be one of the mentors one day, looking to pass the baton to future generations."

- Lucas Wang

"Participating in this internship organized by STEM Fellowship has been one of the most rewarding experiences in my life. One of my favorite aspects of this internship was being able to talk with a variety of people in various stages in their medical research career. I was able to inquire about the different possible career paths that each person took, and learn more about the different opportunities within this field. In particular, I was able to talk a lot with undergraduate students employed at this lab and received lots of helpful advice about university applications."

- Sakura Ariga

"Being an intern at an actual lab was, as expected, a genuinely life-changing experience. It changed my entire opinion on university, my expectations from a potential career in academia, and most importantly, how much respect I have for people working in research. It provided me with an exclusive sneak-peak of research work, and I will be using everything I learned here to make more informed decisions about my own career. I would like to sincerely thank the members of McMillen lab for making my March Break as rewarding as possible."

- Afrin Prio

"I was able to really immerse myself in the research experience and learn about how to act and research professionally and effectively in a lab setting. This program was a great way for me to be introduced to a professional working environment and has helped me develop strong interpersonal skills as well. I learned so much from working with the graduate students and Dr. Nassar and soaked up valuable knowledge that continues to help me."

- Linh Tran

"The experience was extremely influential and led me to pursue a degree related to research. ... Seeing the applications of what I learned in class was definitely motivating and further solidified my interest in research."

- Mitali Pradhan

STEM Fellowship Committees & **THEIR ACHIEVEMENTS**

OUTREACH AMBASSADORS

The outreach ambassador program engaged its 200th ambassador in 2019. Since its launch, we have involved 206 hard-working and passionate outreach ambassadors representing the organization at 61 high schools across British Columbia, Alberta, and Ontario who serve as the first point of contact for community organizations, deliver presentations at their respective schools about STEM Fellowship, offer feedback to the executives, and spread STEM disciplines at conferences such as Operation Medical School and local workshops. Looking forward, we will continue to expand the high school ambassador program to other areas in Canada, connect future generation scientists to STEM Fellowship initiatives, and equip them with essential communication and leadership skills.

CHAPTER AMBASSADORS

The chapters ambassador program was both developed and successfully launched for piloting in 2019 across Alberta, British Columbia, and Ontario. High school students choose and focus their chapter activities on one of the main tenets of STEM Fellowship. Through this program, we have collectively reached record-high participation and submissions for our academic challenges including Big Data Challenge and the Scholarly Writing Challenge. We also successfully cultivated a small community of SF chapter heads (~15) whom, regardless of their location, are able to connect and learn from each other on student leadership, facilitating and executing successful SF-based in school activities, and encourage more high school students to get involved in big data and scholarly writing focused learning. Looking to next year, we aim to expand our program in both current, participating provinces along with new ones. We also aim to expand our initiatives in terms of workshops, webinars, and mini in-school based academic challenges which students can more easily adapt and facilitate in their high schools. Given its starting success, we hope that this program becomes increasingly enriched with resources and an encouraging learning environment for future digital learners.

BRANCHES

In 2019, branches have accomplished many great things that will certainly spell success for the committee as we move into the new decade. In terms of expanding the team, we have introduced the Regional Branch Leads, as well as the Program Development team to the Executive Branch Committee, and oversaw twenty active branches spread out across Canada. One of our most successful initiatives would have to be the completion of the Branch Event Organisation Handbook, done by the Program Development team. It will be beneficial for new and old branches alike far into the future.

During the summer and into the fall, the branch committee managed to incorporate seven new branches into our national team. These universities include Ryerson, UofT Mississauga, York, Memorial, Saint Francis Xavier, Concordia, and Simon Fraser. That means there are 20 SF branches across eight provinces. Notably, the first branch in Newfoundland and Labrador has been established at Memorial University.

Transitioning to goals, we would, of course, like to set up even more branches at universities across Canada, potentially establishing at least one in every province and territory. The Indicium initiative is also one of our major goals for 2020, and we'd like to see it develop into something truly worthwhile for students.

The 2019 **Branch** and **General Audience** surveys were also conducted this year, a process overseen by the Program Development Lead, Aleksei. As he describes the branch survey, "The purpose of this survey was to collect feedback from STEM Fellowship branch executives and identify the main potential directions of development with a focus on increasing student satisfaction and branch efficiency. These results are meant to provide the STEM Fellowship Executive Team with evidence and motivation for their strategic planning." He also describes the general survey: "The purpose of this survey was to collect student feedback on existing initiatives, study the demands of our active beneficiaries, and identify the potential directions of development of the STEM Fellowship." The statistics for who was surveyed for each are discussed further in their respective documents.

CaYPT

2019 was a pivotal year for the CaYPT.

There are many achievements worth noting. In March, we successfully run the 3rd annual CaYPT. We shifted away from the national and regional competition structure in favor for one unified national tournament. Although the majority of participating teams are still from Ontario, we are beginning to see consistent interest and participation from western Canada. We partnered with the University of Toronto Department of Physics to organize lab activities for participating students. We were able to recruit more than 30 jurors and 20 volunteers. This brings more juror perspective into the tournament and greatly enhances the committee's logistics capabilities. From April to June, the CaYPT committee organized a round of individual selections to pick the best students in preparation for the international tournament (IYPT). 9 students were trained in the CaYPT national camp. A delegation consisting of 5 participants and 3 observers and 2 team leaders were sent to IYPT representing Canada.

In IYPT 2019, team Canada placed 10th out of 34 teams and received our third consecutive bronze medal. Our ranking have raised 5 places since 2018. This accomplishment will not be possible without reforms in the national tournament structure, introduction of the individual selection round and the diligent work of every member of the CaYPT committee. From July to October, we focused on providing better student resources and enhancing the popularity of the tournament. We started the crowdsource reference kit initiative. We allow anyone interested to submit scientific journals, videos, and books to us in preparation for the 2020 tournament. As of December, we have collected 195 references from contributor from 6 different countries. We have continued to make reference videos and publishing them on various social media platforms. As of December, we have achieved 954 subscribers on our YouTube Channel with almost 100,000 views in the past year and our following on the video streaming site Bilibili have passed 1000. It is safe to say that our initiatives are greatly boosting the popularity of CaYPT in Canada and are beginning to have global influence.

In October, we recruited new members into our committee. We have grown from a team of 6 to a team of 10. This gives us more manpower to plan for CaYPT 2020 and to maintain our various projects. Our committee have also expanded into Western Canada. We hope that having permanent members stationed in the region will accelerate our effort to make CaYPT more national. Currently we are planning for CaYPT 2020. We are hoping that CaYPT 2020 will attract more students and partners and that team Canada will perform even better in IYPT 2020.

DATA SCIENCE

The Data Science Education team has seen incredible growth throughout the course of this year, and this would not be possible without the collaboration of our network of students from across the country. Our High School Big Data Challenge received 118 team registrations (260 students) from over 80 schools in 34 different cities this year – a 2.5-fold increase from last year. Our Undergraduate Big Data Challenge received 99 team registrations (234 students) from across the 10 provinces. Moreover, we were able to make both Challenges free of charge for participants, which is critical in encouraging the participation of all students regardless of background, location, or socioeconomic status. One aspect that has been a challenge in past years is the submission rate of research papers that students have been working on from October to January, which we are addressing through regular team and mentor check-ins, as well as peer mentorship sessions on topics and dates put forward from participants. Through dedication and commitment of our team, we hope to achieve a submission rate of 80% or higher.

HUMAN RESOURCES

The Human Resource Team has been creating policies to better organize the company and create a friendly and safe working environment. In 2019 we have created many different policies including the interviewing policy, reference policy, mental health policy, safe workplace policy, termination policy, succession policy, and the standardization of training. In addition, our team has been successfully orientating new executives and terminating members who are inactive or decided to leave the organization. Whereas our most meaningful accomplishment is the safe workplace environment, we were able to create a professional policy that is recognized by the organization and create a form in which all teams have signed and understood. This is meaningful to us because we do not tolerate any form of inequity in the workplace and this will allow for all members to feel safe and comfortable when working with STEM Fellowship. In 2020, our team goal is to help teams throughout STEM Fellowship have a more organized and interactive team by coming up with different ways for teams to feel connected to each other even though we are online-based. One way is teaching the importance of empathizing with each other and being more active on Slack.

PARTNERSHIPS & SPONSORSHIPS

STEM Fellowship's Partnerships and Sponsorships Team, often referred to as Partnerships, is actively engaged in the organization's inner workings of large-scale projects and initiatives. Partnerships operates with a strategic vision to increase the outreach of STEM Fellowship programs to a greater number of target audience members. One such notable achievement is that of the 2020 High School Big Data Challenge. Partnerships played a collaborative role in promoting registration of both student participants and mentors, which involved extensive outreach to our partner organizations, other non-profit groups, university student societies, and relevant faculty members across Canadian universities. This collective action by STEM Fellowship departments culminated in the highest number of registrations out of all of STEM Fellowship's High School Big Data Challenges – this being one instance of Partnerships' multifaceted role in the operation of STEM Fellowship programs.

In addition, Partnerships works to secure sponsorship funding for certain STEM Fellowship initiatives, inviting dignitaries to events, and initiating and maintaining relationships with budding science-related organizations in an effort to not only promote STEM Fellowship programs, but also the programs of partner organizations, which can benefit youth. In the coming months, Partnerships hopes to establish valuable connections with organizations and individuals whose vision aligns with that of STEM Fellowship. Partnerships would also like to extend their gratitude to STEM Fellowship's current partners and sponsors for their ongoing support for catalyzing future STEM talent.

SCIENCE COMMUNICATION

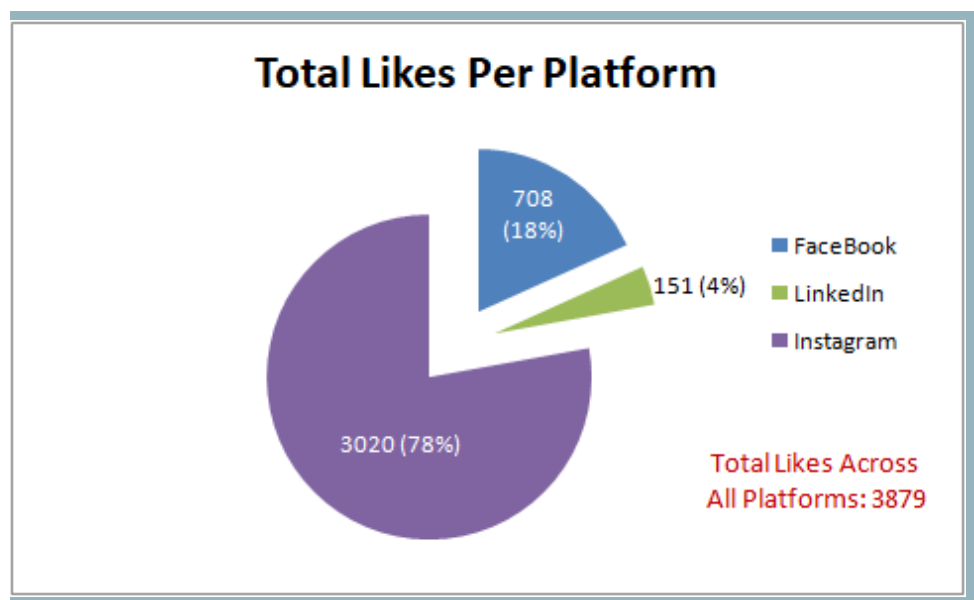
After significant restructuring, STEM Fellowship's Science Communication division (SciComm) has seen monumental growth in 2019. In early 2019 the team was overhauled by bringing on the largest group of student-executives SciComm had known since its inception, and distributed them across four sub-teams: the Student Editorial Board (SEB), the Scholarly Writing Challenge (SWC), SciComm Partnerships, and the Scholarly Writing Workshops team (SWW). All four teams have made major accomplishments which taken together have culminated in the most successful year for SciComm to date.

The SEB worked diligently and efficiently at editing manuscripts for the STEM Fellowship Journal (SFJ) which, thanks to the hard work of the SEB, SciComm Partnerships, and SF's other outreach initiatives will publish 20 manuscripts submitted by student-authors in the 2019 issue - a 75% increase from the previous year. The SFJ was the subject of another pivotal achievement this year for SciComm, in that a dedicated Peer Review Board was established, consisting of MD or PhD-holding professionals working across a plethora of scientific fields who now form the final step of the SFJ's rigorous editorial process. Meanwhile, the Scholarly Writing Challenge surpassed our most ambitious goals for 2019 and received over 100 submissions from high school students, a ten-fold increase from its previous iteration. Finally, the 2019 Scholarly Writing Workshops team focused on creating digital media with the aim of simplifying the complex realm of academia, which can often be daunting for young researchers. They created a portfolio of educational videos and webinars covering topics including scholarly publication, literature review strategies, completing an effective research project and more.

While we have had an amazing year, this is still much to look forward to achieving in 2020. We aim to solidify the SFJ as Canada's leading student-run academic journal through expanded university relations and partnerships with organizations focused on science communication. Our Workshops team will work to significantly expand upon their portfolio of educational content, focusing on producing recurring webinars tailored for young researchers. Finally, SciComm has the ambitious goal of creating a new team dedicated to providing science communication consulting services to students who need aid with crafting manuscripts, delivering conference presentations, and more.

Spreading Our **INFLUENCE**

Our High School Big Data Challenge 2020 reached over 41 thousand people on Facebook within the age range of 13 to 24 years old – while our advertisement on Instagram reached over 18.5 thousand people of a similar age range. We aimed to target the youth, specifically high school students, as well as teachers. Further, we had an event page in both English and French to make it easier for people to register for the event, while it was also used to introduce our main sponsors and prizes. We curated posts to market the unique selling points of our Big Data Challenge; such as publication in the STEM Fellowship Journal, benefits of self-directed learning, and the chance to win monetary prizes. Moreover, we utilized testimonies from previous participants to help highlight the value of the experience that the Big Data Challenge provides. Finally, we were able to receive help via other organizations and people who saw our posts as they were able to share them, thus increasing our reach.



We put forth \$400 to spend on Facebook ads which reached out to roughly 42,000 people aged 13-17. We used testimonials to emphasize the importance of Scholarly Writing. Polls and questions about the SWC judging process were put out so our followers better understood how their work would be evaluated. A promo video was posted, which used eye-catching animation. We featured Altmetric top articles as inspiration. Frequent countdowns to registration were put out. Scholarly writing tips were given. A great deal of interest was gathered via Instagram through direct messaging.

STEM Fellowship & **GOOGLE ADVERTISEMENTS**

The Google Advertisement Grants is a program launched which provides non-profit and charity organizations with \$10,000-worth of Google advertisements per month. STEM Fellowship received the Grant in 2019. The STEM Fellowship Management and Marketing teams provided Google with our mission, status, and organization details to be considered. Several members of the SF executive team underwent training using TechSoup webinars and other online sources to better understand how to use the Google AdWords platform.

A new Marketing team was established to oversee the activity of the Google Ads, brainstorm advert ideas and keywords, coordinate with other teams and committees to share exciting SF events, and keep up to date with Google Ad Grants criteria. Since its inception, the Google Ads team has demonstrated their ability to learn and apply newfound knowledge of marketing and advertising to increase net impressions on our ads by approximately 1000 each quarter. Not only has the grant been an exciting new way to share information about our events and programs, but it has also helped us understand consumer analytics for today's students. SF is able to visualize which ads or keywords have attracted the most people, demographically. This benefits the marketing committee and STEM Fellowship as we are able to determine what students are looking for! The Google Ads Grant has been a great bonus to our Marketing Committee as it provides us with a new tool to share STEM Fellowship's mission, and serves as an educational platform to learn about consumer data, analytics, and the psychology of marketing.

THANK YOU TO OUR SPONSORS

CANADIAN SCIENCE PUBLISHING

A non-for-profit with the goal of mobilizing science-based knowledge. They currently publish 24 various international journals in 175 countries; they are also the publisher of STEM Fellowship Journal and a main sponsor of the Big Data Challenge.



SCINET UNIVERSITY OF TORONTO

Boasting Canada's largest supercomputer centre, they provide Canadian researchers with cutting edge computation resources. They also sponsor STEM Fellowship's data science education and the Big Data Challenge.



SAS CANADA

Primary host of the Big Data Challenge finals and provides the scholarship prize that aids the data science education curriculum and certification for STEM Fellows. Use innovation, business intelligence, analytics and data management services to help more than 75 000 customers make decisions faster.



Cognitive Class

Provide STEM Fellowship with learning material as well as being the monetary sponsors for the Big Data Challenge and IBM Student Prize. The goal of Big Data University from IBM is to provide opportunities related to computing and data analysis.



PERIMETER INSTITUTE

Host of the Canadian Young Physicists' Tournament. First founded in 1999 in Waterloo, with the goal of furthering the understanding of the universe on a fundamental level.



ROYAL BANK OF CANADA

Monetary sponsor for National Big Data Challenge.



THE SCHULICH FOUNDATION

Monetary sponsor for National Big Data Challenge. The Schulich Foundation has donated more than \$350 million to university faculties and continue to hold scholarships for high achieving students today.



CANADIAN RESIDENT MATCHING SERVICE (CaRMS)

A non-profit that helps Canadian doctors across the country match into residencies through an objective and transparent application process. They are also sponsors for the Big Data Challenge.



LET'S TALK SCIENCE

Sponsor the Big Data Challenge. Encourage youth to take an interest in the STEM field and motivate them to fulfil their potential as both young professionals and citizens.



UNIVERSITY OF CALGARY HUNTER HUB

The Hunter Hub aims to enrich student experience and encourages innovation across the community as well as sponsoring the Big Data Challenge.



UNIVERSITY OF CALGARY
Hunter Hub for Entrepreneurial Thinking

PACIFIC INSTITUTE FOR MATHEMATICAL SCIENCES (PIMS)

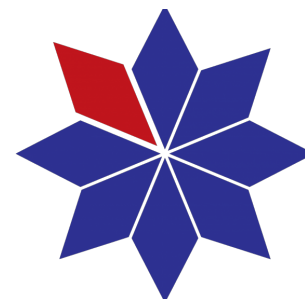
PIMS aim to promote research and applications of math in various different fields of study as well as enrich public awareness of math through various outreach programs.



Pacific Institute *for the*
Mathematical Sciences

SOCIETY FOR CANADIAN WOMEN IN SCIENCE AND TECHNOLOGY

The Society for Canadian Women in Science and Technology, founded in Vancouver, BC in 1981, is a not-for-profit organization that promotes, encourages and empowers women and girls in science, engineering and technology



SCWIST

CALLYSTO

Callysto is a free, interactive, curriculum based learning and skills development tool - with the goal of building tomorrow's digital leaders. STEM Fellowship is proud to have Callysto sponsoring our Big Data Challenge.



UNIVERSITY OF CALGARY - FACULTY OF SCIENCE

Being one of the top-ten universities in Canada, with a stellar sciences program, STEM Fellowship is thrilled to have U of C's Faculty of Science sponsoring our Big Data Challenge.



UNIVERSITY OF CALGARY
FACULTY OF SCIENCE

ROCHE

Based in Mississauga, Roche is a successful pharmaceutical company that aims to bring targeted treatments to patients. Originally founded in 1896, Roche has now grown to have a global impact, having saved countless number of lives and improving the quality of life for millions around the world.



OUR PARTNERS



Pacific Institute *for the*
Mathematical Sciences



WHAT'S NEXT FOR **STEM FELLOWSHIP?**

Our vision for STEM Fellowship is to be among the forefront leaders of STEM education in Canada. Given our success in 2019, we have much more to offer in the coming years. We aim to expand the scope of our key programs like the Big Data Challenge, STEMPowerment and Sci Comm, to provide more mentorship and experiential learning opportunities to students. To achieve this goal, we plan to strengthen relationships with our current partners and foster new relationships with organizations who share our vision. We are continually seeking and developing ideas for new initiatives that we can implement – for instance, in 2020, we are holding a pilot of the STEM Fellowship Interdisciplinary Contest – so one can expect to see new initiatives being coordinated by STEM Fellowship in the upcoming years as well!

STEM Fellowship will also continue to improve and develop our current projects. For example, we want to further improvements to the STEM Fellowship Journal so we can continue to have great articles published. The vision of STEM Fellowship is to foster more student involvement and initiative in self-driven learning and inquiry specifically in the STEM fields of study. Moreover, we want to encourage students to build stronger skill sets in community development, peer-to-peer learning, and student leadership. Because STEM Fellowship is a national organization which relies mainly on remote communication, we are always working to strengthen the sense of community across the organization, and continue to work towards this goal over the next few years as well.

Science Communication Team

Arman Athwal Science Communication Director

Scholarly Writing Workshop Team

Philipp Maurus SWW Team Lead
Jenny Smith SWW Developer/Presenter
Ada Zhang SWW Developer
Mahima Siall SWW Developer

Scholarly Writing Challenge Team

Shadan Ashrafi SWCTeam Lead
Alex Lee SWC Outreach Coordinator
Ayesha Hassan SWC Outreach Coordinator
Rahul Aggarwal SWC Writing Challenge Outreach Coordinator
Mary Joyce Avisado SWC Outreach Coordinator
Jennifer Sedgewick SWC Marketing Coordinator
Rida Pasha SWC Challenge Sponsorship Coordinator
Jana Kurrek SWC Sponsorship Coordinator

Internship and Competition Review Members

Morgan Young-Speirs Mentor
Katherine Liu Mentor
Fazeela Mulji Mentor
Julianna Svishchuck Mentor
Alexandra (Sasha) Stroyev Mentor
Nhi Nguyen Mentor
Muskan Zaidi Mentor

Ambassador Outreach Team

Christy Chan Co-Director for Ambassador Program
Marcus Chung Alberta Ambassador Regional Lead
Elizabeth Shim Ontario Ambassador Regional Co-Lead
Carmel Tung BC Ambassador Regional Lead
Fatima Sajid HR Ambassador
Josephine Hon HR Ambassador
Alisha Rullay School Outreach Director
Helen Liu VP Outreach/Marketing

Student Editorial Board

Jayneel Limbachia SFJ Editorial Lead
Harsukh Benipal Editorial Coordinator
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