2018 | ANNUAL REPORT

Shaping the future of STEM

Mindfuel™

MindFuel™

MindFuel ignites a passion for STEM in youth, inspiring them to shape our future by becoming the engaged knowledge workers, leaders and problem-solvers of tomorrow. As a STEM education technology leader, we have served K-12 students and teachers in Alberta, across Canada and around the world for nearly three decades.

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"Education is a once in a lifetime opportunity to open children's hearts and minds to the unbelievable wonder of the universe."

Sir Anthony Seldon

"Too often we give children answers to remember rather than problems to solve."

Roger Lewin

LETTER FROM CEO / CHAIR

K-12 STEM education is a critical component of the innovation ecosystem. It is during K-12 that students develop attitudes, skills and knowledge regarding the world around them and the role they will seek beyond their formative years. Therefore, K-12 education is one of the most influential determinants in guiding youth to understand how they will meet the demands of our rapidly-changing, technology-focused society. As a leader in educational technology and STEM programming in Canada for 30 years, MindFuel is a key partner to many stakeholders in the innovation ecosystem, where we focus on providing skills development for youth as they prepare to become the knowledge workforce of tomorrow. To date, we have invested approximately $100M to support and advance Canada's innovation agenda.

In 2018 we reached more than 14,000 communities globally in 195 countries with our English and French STEM learning resources. Specifically, 3.9 million learning sessions were delivered in biodiversity, energy and alternative energy, agriculture and environmental and water management science; more than 1 million sessions in STEM knowledge foundations including biology, physics, chemistry and earth sciences; 409,716 sessions specific to design thinking, innovation and entrepreneurialism; 159,403 sessions focused on synthetic biology and nanotechnology; 56,303 sessions on computational thinking, robotics, information modelling, machine learning and artificial intelligence; and 28,454 sessions regarding our STEM Career Showcase, with content supporting girls and women in STEM. Students across Canada also logged a total of 410,646 hours through our digital interactive learning, workshops, mentor-supported student activities and real-world problem solving.

In terms of research, now in its third year, our PhysicsFuel project – in collaboration with the Schulich School of Engineering, University of Calgary, with funding support from NSERC PromoScience – continues to focus on deepening and broadening student engagement and interest in physics across diverse populations, with a particular focus on increasing female enrolment in high school physics and boosting student enrollment in post-secondary science programs like engineering. In 2018 we worked with 13 classrooms and 283 grade 8 students in five schools across Alberta for a total of 1,924 hours of learning about mechanical systems. We were pleased to present our results of our study at STEM conferences, including the Canadian Coalition of Women in Engineering, Science, Trade & Technology (CCWESTT) Biennial Conference and Canadian Engineering Education Association (CEEA-ACEG) Conference.

We are grateful to our many community supporters, advocates, partners and funders – including the Governments of Alberta and Canada, with special thanks to NSERC PromoScience – and all those who help us continue moving education forward. With your support, we are shaping the future of STEM one student at a time.

Cassy Weber | CEO

Shahauna Siddiqui | Chair

INTRODUCTION

Sparking imagination in the innovators of tomorrow and preparing them to thrive in future careers is our most important work. We inspire them to take risks, adopt a growth mindset, build real-world connections, become creative problem-solvers and think critically about the world around them.

Everyone who works with MindFuel – in schools and throughout our communities – plays a vital role in inspiring and engaging students and teachers in STEM education, through:

>> Empowering and engaging students through STEM topics and entrepreneurialism

>> Empowering teachers to ignite a passion for science exploration and discovery in their students

>> Developing and delivering high-quality, innovative, scientifically-unbiased STEM-learning resources that connect to real-world scenarios and help students build problem-solving and critical thinking skills

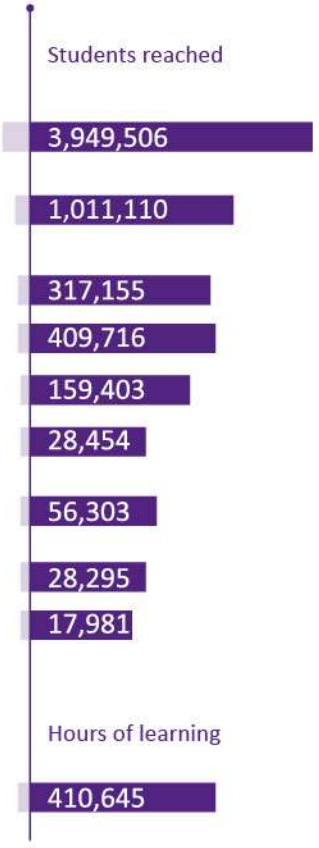
>> Increasing science literacy and curiosity, and sparking student interest in STEM topics

>> Inspiring students to pursue STEM-related post-secondary programs and careers

INTRODUCTION Skills Development Area

As a MindFuel supporter, you are part of an energetic team of individuals and organizations committed to the development of leading-edge programming to drive the future of STEM learning and discovery. Our award-winning resources and programs are designed to help students engage in real-world problem-solving and innovation across numerous crucial fields, and reached 195 countries and more than 14,716 communities globally in 2018.

>> Real-world skills development areas



>> Empowering STEM thinking

>> Many thanks to our dedicated funding partners and donors, including those who chose to be anonymous. We would not be the organization we are without their support.

With gratitude to all our supporters:

- Corporations and Foundations
- Philanthropists

Alberta Government

With funding from | Avec un financement du
Canada

INTRODUCTION 2018 Highlights

Total student learning sessions:
6,649,803
(WV Eng. & Fren, global)

Students engaged:
77,632

Hours of learning:
410,645

Volunteers:
938

Total volunteer hours:
18,271

Teachers / Team advisors supported:
21,151

Teachers / Advisors hours of support:
26,538

Total strategic partnerships:
42

INTRODUCTION Summary of MindFuel Social media

Total brand impressions:
18,000,952
(across web, social & traditional media, events, etc.)

Online presence:
19,828,116

Radio/Print/TV:
161,485

Social media:
1,108,831

Websites' unique users:
859,057

Youtube User Experiences:
19,200

Facebook Impressions:
650,378

Twitter Impressions:
447,319

wonderville™

INSPIRING K-12 STUDENTS

>> SUMMARY OF WONDERVILLE PROGRAM OUTCOMES (GLOBAL)

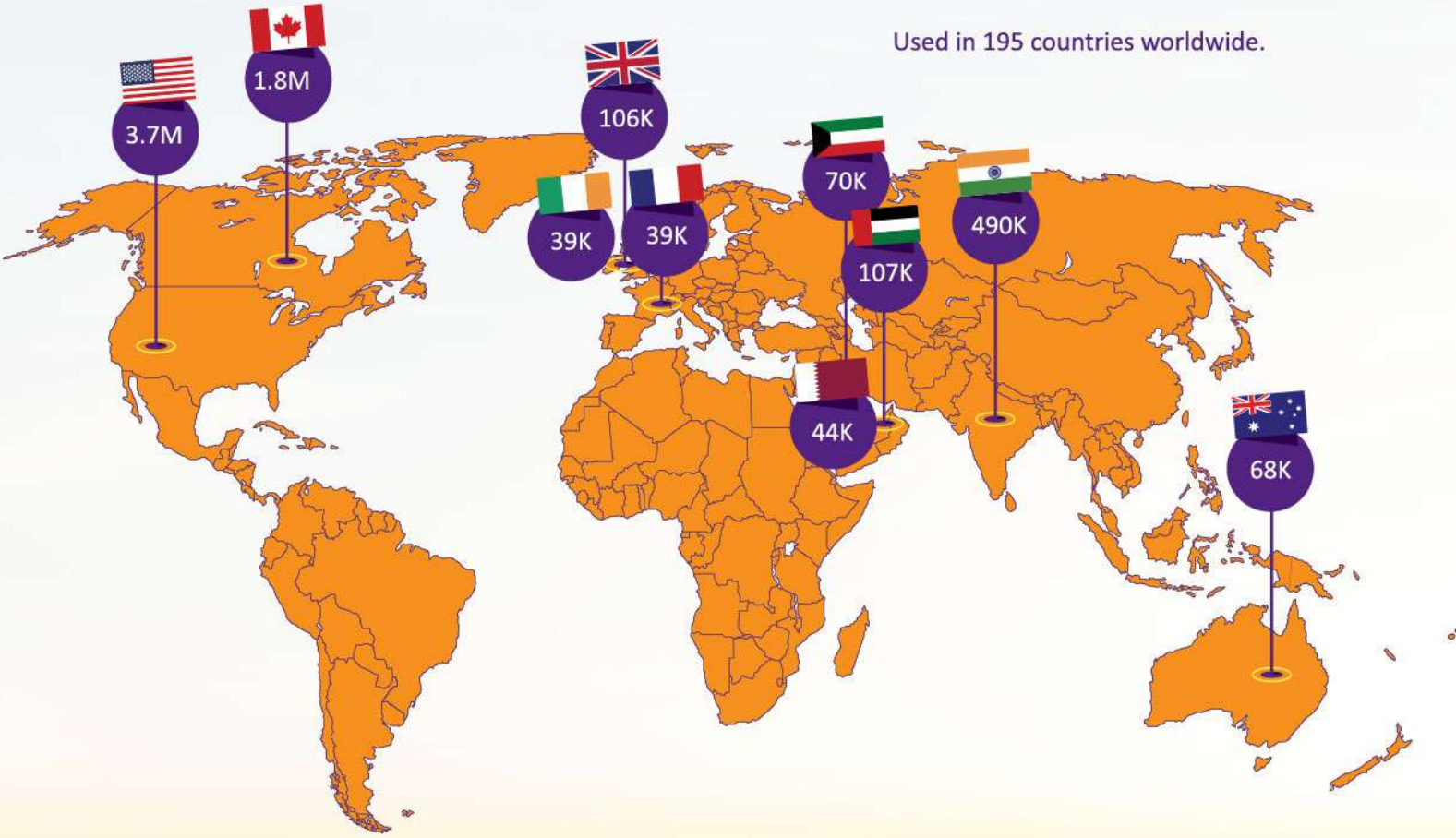
Global student learning sessions

English + French
6,649,803

English only
6,532,035

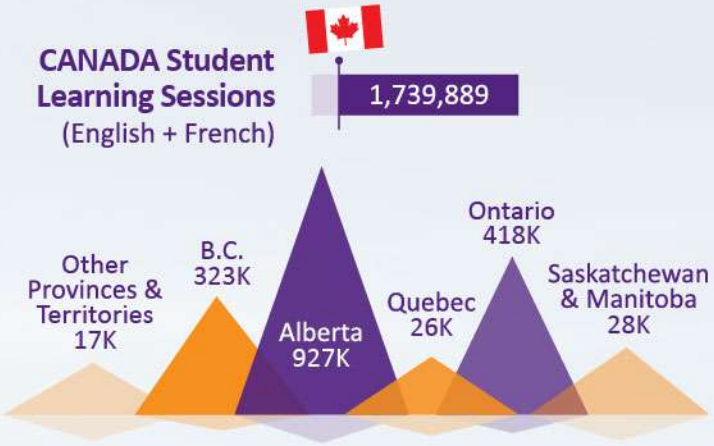
French only
117,768

TOP 10 Countries	ENG + FRE WV Learning Sessions
1 United States	3,685,366
2 Canada	1,739,929
3 India	488,884
4 United Arab Emirates	107,086
5 United Kingdom	105,777
6 Kuwait	69,874
7 Australia	68,294
8 Qatar	44,015
9 France	39,286
10 Ireland	39,156

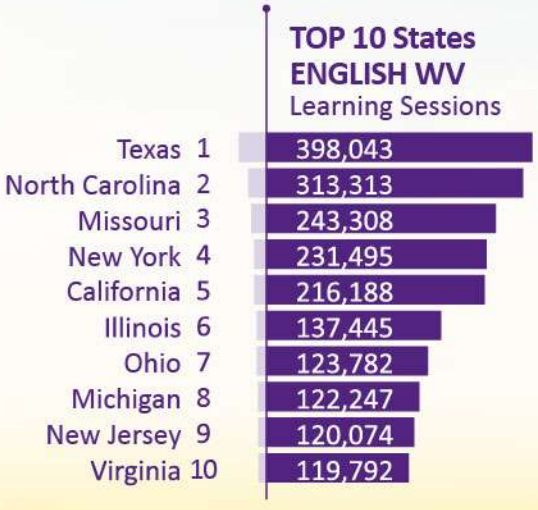


April 1, 2018 – March 31, 2019

>> WONDERVILLE REACH IN CANADA



>> WONDERVILLE REACH IN THE U.S.



wonderville OVERVIEW

Wonderville is an award-winning student engagement platform, which supports blended-learning in the STEM classroom. Students explore the wonder of STEM by engaging in game-based learning, hands-on activities, real-world videos and animations, hands-on experiments and STEM career showcases. These reliable, high-quality student activities are supplemented by lesson plans, assessment and professional learning resources for teachers.

ENRICHING LEARNING

- Developed by teachers and extensively tested in Canadian and American classrooms.
- Aligned with curricula across Canada and the Next Generation Science Standards (NGSS) in the United States.

>> INSPIRING STUDENTS' FUTURE

- Deepen students' understanding of STEM concepts through scientifically unbiased, engaging digital resources.
- Support teachers in their delivery of STEM topics - such as biodiversity, water management science, synthetic biology and computational thinking.

>> EMPOWERING STEM THINKING

- Developed 25 lesson plans for teachers, which incorporated Wonderville activities.
- Incorporated immersive technology in our *Diversity of Living Things* lesson using virtual reality-based content created by The Energi Simulation / Frank and Sarah Meyer Collaboration Centre at the University of Calgary.
- Created a new library of professional learning resources, featuring ten quick tip videos and two webinars.

>> Wonderville.org student user testimonials

"It was a fun game and helped me learn more about science."

"Getting to play the games and watching the video helped me remember it better."

>> Teacher user Testimonials

"Exploring the life of trees and growing conditions through an interactive activity on Wonderville.org. This is a perfect way to reinforce learning from our in-school field trip 'Tree Tales' yesterday!"
Wonderville.org teacher user, Twitter quote

"It makes learning about alternative energy fun."

"Highly engaging and simple."

PROFESSIONAL LEARNING OVERVIEW

Launched in 2018, MindFuel's professional learning workshops offer K-12 teachers support in their professional development and growth in STEM education through impactful teaching practices, hands-on activities, educational presentations and engaging roundtable discussions.

5 teacher workshops

276 hours of professional learning

118 Alberta teachers supported

40% rural

60% urban

>> EMPOWERING STEM THINKING

- Learning directly from subject matter experts, teachers immersed themselves in STEM concepts that they can implement easily into their own classrooms.
- Provided helpful classroom tips, innovative teaching practices and learning resources to increase student engagement and learning of STEM topics.
- Workshop topics included design thinking, digital literacy, computer programming and coding in the classroom.

>> Teacher Survey Responses

90% I plan on using some of the workshop ideas and activities in my classroom.

87% Learnings from this workshop will help make my STEM class more interesting and engaging for my students.

"It was a great opportunity to learn about new ideas to try in the classroom, and to share with colleagues."

PL Teacher Participant, Design Workshop

"I appreciated the clear explanations of coding terms because it gave me ideas of how to explain them. The activities were very engaging and gave me an understanding of the student experience."

PL Teacher Participant, Digital Literacy & Coding Workshop

* Survey summary based on surveys completed at three professional learning workshops held at MindFuel's offices between April 1, 2018 – March 31, 2019.

wonderville™

PhysicsFuel OVERVIEW

Developed in collaboration between MindFuel and the University of Calgary's Schulich School of Engineering, with funding support from NSERC (Natural Sciences and Engineering Research Council of Canada), PhysicsFuel focuses on deepening and broadening student engagement and interest in physics across diverse populations.

>> INSPIRING STUDENTS' FUTURES

PhysicsFuel, now in its third year of research, aims to:

- Increase female enrolment in high school physics, noting that only 30% to 35% females complete grade 12 physics
- Increase student enrolment in post-secondary science related programs, such as engineering

238 grade 8 students engaged

1,924 hours of learning

13 teachers supported

>> EMPOWERING STEM THINKING

- Developed two interactive digital resources - *Play with Pulleys* and *Science Seekers Levers* - two hands-on design projects and activity sheets on mechanical systems (core physics concepts, grade 8).
- Presented year 2 research findings at two conferences: Canadian Coalition of Women in Engineering, Science, Trade & Technology (CCWESTT) Biennial Conference (Edmonton, June 2018) and Canadian Engineering Education Association (CEEA-ACEG) Conference (Vancouver, June 2018) including the following highlights:

  1. Students who are more interested in physics and engineering tend to have learning styles that require more active and less sequential programming than traditionally delivered. This is particularly the case for female students.
  2. The gender disparity in the interest level of the grade 8 students was evident. Although most students agreed that female students were encouraged to study science and both groups felt that science had the same difficulty level, the male students showed a much higher interest in science and in pursuing physics and engineering in high school than females.

PhysicsFuel FINDINGS

Both attitudinal perspectives, gender and, indirectly, learning and teaching style, impact student interest when choosing physics as a science field to study in high school.

Key findings from 2018-19 research data collected from pre- and post-attitudinal surveys on student engagement and interest in physics/science across a diverse population include:

1. Positive shift in the total number of students who saw science in everyday life, and in the number of girls who felt prepared to pursue science in high school.*
2. Positive shift in the total number of students who strongly felt they had an understanding of what engineering is about, and in female students in particular, many of whom strongly felt science leads to rewarding career choices and felt encouraged to pursue science in high school.**
3. Students are more interested in science, and that their learning needs are better met, through active engagement. Students wanted more of the following types of science lessons (listed in order of most popular selected option): experiments/labs (78%), digital games (44%), videos (33%) and design challenges (28%).

>> Teacher Survey Responses

80% By using these digital resources, my students learned more about this science topic.

80% The digital resources were helpful in supplementing my teaching of this unit.

>> PhysicsFuel Pilot Teacher Participant Testimonials

"I've primarily been looking for technology to integrate into my lessons. This was wonderful to use."

"The background information was great... I felt like my students were learning something and connecting things. This one was excellent!"

* Based on pre- and post-surveys regarding digital hydraulics resources.
** Based on pre- and post-surveys regarding digital levers resources

geekStarter

OVERVIEW

GEEKSTARTER PROGRAM ENCOMPASSES THE FOLLOWING:

>> GEEKSTARTER

- Student-led, project-based learning for middle, high school and collegiate students
- Teams focus on solving real-world problems using emerging STEM fields, such as synthetic biology, nanotechnology, robotics and coding
- MindFuel provides project funding and mentorship support

>> CAREER AND TECHNOLOGY FOUNDATIONS (CTF) ACCELERATOR

- Semester-long program support to enhance CTF classes for middle school students in the exploration of occupational areas through real world challenges
- Application of rapid prototyping methods and completing multiple cycles of the 'plan, create, appraise, communicate' learning process

>> CAREER AND TECHNOLOGY STUDIES (CTS) INNOVATION BANK

- For-credit course materials to teach ENT1010, ENT2010 and ENT3020 to high school students
- Design challenges to explore how to take a product to market, as well as potential career pathways

>> INSPIRING STUDENTS' FUTURE

- Engage students in finding and solving real-world challenges.
- Develop the next generation of innovators, entrepreneurs and problem-solvers.
- Encourage post-secondary education and careers in STEM fields.

geekStarter

OVERVIEW

Grades 4-12 and post-secondary students across Alberta who participate in one of our geekStarter programs build critical thinking skills as they develop solutions to real-world challenges through hands-on workshops and entrepreneurial-inspired events. These entrepreneurial, real-world programs break down barriers that prevent students from embracing emerging STEM fields, and foster a belief that we are all innovators and problem-solvers who can contribute to the creation of a better future.

>> SUMMARY OF GEEKSTARTER OVERALL OUTCOMES

- 849 Students engaged
- 53,629 Hours of learning
- Student participation:
  21% Rural or Remote / 79% Urban
  47% Female, 5% Indigenous

- 85 Teachers/team advisors
- 5,242 Teacher/team advisor hours

- 52 mentors
- 962 Mentor hours

- 43 Subject matter experts (SME)/judges
- 846 SME/judge hours

geekStarter

OVERVIEW

geekStarter is an enrichment program based on student-driven, hands-on research projects. Students identify real-world problems and work to develop innovative solutions through emerging STEM fields such as robotics, automation, synthetic biology, computer programming and coding, nanotechnology and artificial intelligence.

>> geekStarter REACH IN ALBERTA

- 15 middle/high school teams, including 3 teams from economically disadvantaged schools
- 242 students
- 48,400 hours of student learning

- 4 collegiate teams
- 52 students
- 10,400 hours of learning

- 36% rural & 64% urban

>> EMPOWERING STEM THINKING

- Engaged student- teams in finding and solving real-world challenges and building solutions based in emerging STEM fields that could be commercialized.
- Supported teams and their real-world research-based projects through hands-on workshops, skill- building events and mentorship support.
- Continued to build connections between geekStarter teams and industry and academia subject matter experts to expand students' knowledge, direct experience and understanding of STEM industries and possible careers.

A majority of alumni pursue careers in emerging STEM fields. Some have turned their geekStarter experiences into startup companies, such as Alberta-based synthetic biology startups Amino Labs, FREDsense Technologies, Nomadogen and Synbiota Inc.

Make With Biology amino labs

FREDsense Technologies

NOMADOGEN BIOTECHNOLOGIES

Synbiota™

>> Student Survey Responses

89% I learned something more about science.

86% I can see myself working in science.

>> Teacher Survey Responses

91% Through this geekStarter workshop, my students learned more about this science topic.

94% Participating in geekStarter can inspire students to pursue advanced studies in post-secondary STEM programs.

* Survey summary is a collation of surveys from six geekStarter workshops (April 1, 2018 – March 31, 2019)

>> geekStarter Testimonials

"This workshop really helps students to look at their science from a real world perspective. The program as a whole is an amazing learning experience for students and MindFuel/geekStarter is an integral part of the experience."

High School Team Advisor, High School iGEM workshop participant

"Today I saw students from grades 7-12 accurately - and confidently - explain graduate level information, which is amazing. Students who are passionate are able to channel their STEM passion into creative solutions that would otherwise not be addressed by them. Getting nerdy is cool here."

Notre Dame Collegiate Team Advisor, High School Jamboree workshop participant, High River

"This jamboree allowed me to remind myself of my love for science, and gave me inspiration for future careers."

Grade 12 student, Jamboree workshop participant, Edmonton

geekStarter

TEAM PROJECTS

>> EMPOWERING STEM THINKING

- **University of Alberta** (Edmonton): Epiculture - Reducing disease in bee populations by targeting parasites that affect bees.
- **University of Calgary** (Calgary): Gene Therapy - how to fix medical deficiencies at the gene level.
- **University of Calgary** (U of C) **BIOMOD** (Calgary): Building a nanosensor for detecting and measuring the presence of DNA, with potential for use in diagnostics, forensics and more.
- **University of Lethbridge** (Lethbridge): Creating a nano-scale tool that limits the growth of invasive species in waterways.
- **Father Mercredi Community High School RSports Robotics** (Fort McMurray): Main projects for their local community include: a football tackle robot to reduce player injury and a bear robot decoy to train protection dogs at oil sands sites.
- **Lacombe Composite High School Robotics** (Lacombe): Building a robotic dog to protect gardens and farm land from prey, such as birds & animals.
- **Lester B. Pearson High School Robotics** (Calgary): Building a robotics platform to assist with forest fire management.
- **Lethbridge High School SynBio iGEM** (Lethbridge): Removing heavy metal contaminants from tailings ponds and wastewater using synthetic biology.
- **NotreDame Collegiate High School Synbio** (High River): Breaking down fatty buildup in sewage pipes using synthetic biology.
- **Our Lady of the Snows Catholic Academy SynBio and Robotics** (Canmore): Bio-tagging individual plastic types to simplify and improve sorting and developing robotics components to one day achieve fully-automated sorting.
- **Queen Elizabeth High School Robotics Team** (Edmonton): Building a robotic exoskeleton to help children with mobility issues.
- **Ted Harrison Junior High School SynBio Team** (Calgary): Creating a robot that picks up litter in public spaces such as parks and school yards.

geekStarter Teams	iGEM Acknowledgements and Awards
University of Alberta	Won Gold medal Won Best Food and Nutrition Project Nominated for Best Integrated Human Practices
University of Calgary	Won Gold medal Nominated for Best Software
University of Lethbridge	Won Gold medal
Lethbridge High School	Won Silver medal
Notre Dame High School (High River)	Won Silver medal
Our Lady of the Snows Catholic Academy High School (Canmore)	Won the Chairman's Award for their exploration of accessibility for scientists with physical disabilities

Our geekStarter teams competed against 300+ teams from over 40 countries.

>> 2018 STARTUP WORKSHOP

Held November 24, 2018, the geekStarter: Startup Workshop was one of six main events held for geekStarter teams in 2018-19. It sparked ideas, increased understanding about entrepreneurialism, and created new networking connections for current and potential geekStarter participants, as well as alumni. This day-long workshop empowered these future STEM leaders to fulfill their dreams through post-secondary studies, careers and entrepreneurialism in STEM, which will have the long-term benefit of helping to diversify Alberta's economy.

- 45 middle/high school/collegiate students from 11 teams
- 36% rural, 64% urban teams
- 11 team advisors
- 12 SMEs

>> Student Survey Responses

74% I can see myself being an entrepreneur and/or working in STEM.

82% This workshop makes me more knowledgeable about entrepreneurialism and/or STEM.

>> Team Advisors Survey Responses

96% Participating in geekStarter can inspire students to pursue a post-secondary STEM and/or entrepreneurialism program.

"Hearing the mentors talk about their experiences and relating it to ours was a benefit. It gave our group a chance to restart and pivot."

Grade 11 student, StartUp workshop participant

"Provided students with the opportunity to share and discuss their ideas with entrepreneurs in the related fields! Understanding further how their proposal can come to life was extremely encouraging and brought about renewed passion for the project!"

Our Lady of the Snows Team Advisor, StartUp workshop participant

* Survey research summary based on geekStarter Startup workshop (Nov. 24, 2018)

CTF ACCELERATOR PILOT PROGRAM
Career & Technology Foundations

OVERVIEW

Developed in partnership with the Calgary Board of Education (CBE) - with support from EducationMatters, Enactus Mount Royal University and the University of Calgary Hunter Hub for Entrepreneurial Thinking - the CTF Accelerator gives students an opportunity to explore their interests and passions through hands-on experiences to solve real-world challenges using iterative problem-solving and rapid prototyping.

- 505 Grade 5-9 CBE students
- 17,079 hours of collective student in-class learning
- 20 CBE teachers
- 64 hours of teacher professional learning

>> EMPOWERING STEM THINKING

- Engaged students in solving real-world challenges using iterative problem-solving and rapid prototyping.
- Provided teachers with high-quality CTF teaching materials and professional learning workshops on rapid prototyping methods and interdisciplinary learning environments.
- Connected teachers and students with community mentors, local innovators and subject matter experts who provided feedback and shared insights about future STEM career possibilities.
- Co-planned the Fall 2018 Program Celebration event in January 2019 where students presented their projects to other CTF Accelerator students and teachers, mentors and pre-service teachers.

>> SAMPLE 2018-19 STUDENT PROJECTS

- Working with the Tuscany Club to create a space for local birds
- A wheelchair specifically-designed for athletes with physical limitations
- A device to autonomously clean our oceans
- A solar-powered backpack to charge personal electronics
- Redesigning a public space on campus to be a unifying community hub
- An exploration of the importance of digital literacy and suggestions for how to be a responsible digital citizen

>> Student Survey Responses

73% I learned something more about science.

86% The CTF Accelerator program makes me more knowledgeable about rapid prototyping approaches.

>> Teacher Survey Responses

93% I am comfortable in assessing the CTF learning outcome: exploring interests, passions and skills while making personal connections to career possibilities.

94% Today's session and resources will help me enrich and enhance my ability to teach the CTF course.

* Survey summary based on online surveys completed at the completion of the Fall 2018 cycle.

>> CTF Accelerator Testimonials

"I really enjoy this program because it allows you to do what you are interested in in a way that you can be learning as well as having fun."

CTF Accelerator Pilot Program Student, Fall 2018 Cycle

"This program has surprisingly showed me different ways to approach not only design thinking problems, but also being more creative in answering questions in my daily life."

CTF Accelerator Pilot Program Student, Fall 2018 Cycle

"I feel like this is a good experience and that it will help in life when we get older."

CTF Accelerator Pilot Program Student, Fall 2018 Cycle

"Highlights include: 1. Community. 2 Mentor!! 3. Reassurance that I'm on the right track."

CTF Accelerator Pilot Program Teacher participant, Fall 2018 Cycle

IGNITION PACK™

OVERVIEW

Ignition Pack is a permanent resource that transforms science classes by combining the best of 21st century learning, hands-on resources and digital components. Aligned with the Alberta program of studies, students learn fundamental science concepts through exploration, experimentation and critical thinking.

- Distributed 117 kits
- Engaged 4,500+ Grades 5, 7 and 8 students across Alberta
- 112,700 hours of STEM learning
- 117 teachers
- 79% rural and 21% urban AB schools within 23 communities

>> INSPIRING STUDENTS' FUTURE

- Increase students' engagement and experience with complex science concepts through inspiring Alberta-based real-world examples and fun, hands-on activities.
- Provide teachers with high-quality, blended learning resources and detailed lesson plans that enable them to teach a complete unit of science.
- Continue to expand MindFuel's reach into rural and urban Alberta schools by distributing more Ignition Pack kits.

>> EMPOWERING STEM THINKING

- 38 of the 117 Ignition Pack kits were distributed to schools throughout the Northlands School Division in August & September 2018.
- Hosted two distribution events for the public and Catholic school districts in Fort McMurray to present 43 donated Ignition Pack kits in October 2018.

IGNITION PACK™

>> Student Survey Responses

80% I learned something more about this science topic.

74% Ignition Pack makes me more knowledgeable about science.

>> Teacher Survey Responses

87% Through this Ignition Pack, my students learned more about this science topic.

85% Ignition Pack helped make my science classes more interesting and engaging for students.

*Survey research summary based on online surveys for the period April 1, 2018 – March 31, 2019.

>> Ignition Pack Testimonials

"The videos are so humorous, the students are hooked from the start. Then when it comes time to build the wetlands, they cannot wait to put together everything they have learned. As a teacher, I also generally appreciate how much time was put into making some of the activities cross-curricular so that I can use them to meet Language Arts and Social Studies outcomes as well."

Grade 5 teacher, Wetland Ecosystems Ignition Pack user

"The pictures because it was easier to understand what was going on. I also liked the narrator because they had very good explanations for things."

Grade 5 student, Wetland Ecosystems Ignition Pack user

"The cards were helpful and fun to use and helped me understand how wetland ecosystems work."

Grade 5 student, Wetland Ecosystems Ignition Pack user

"The activities that were pre-made helped increase my student's engagement. I really liked the Water Use Activity, The Biological Indicator Species Activity and the Melting Ice Activity."

Grade 8 Science Teacher, Freshwater & Saltwater Systems Ignition Pack user

IGNITION PACK™

SUMMARY

>> OVERALL OUTCOMES SINCE LAUNCH

April 1, 2018 – March 31, 2019

- 238 kits distributed
- 10,074 students engaged
- 251,850 hours of learning
- 67% rural / 33% urban AB recipient schools within 45 communities

EACH UNIT KIT - grade 5 Wetland Ecosystems, grade 7 Interactions & Ecosystems and grade 8 Mix & Flow of Matter and Freshwater & Saltwater Systems - has over 40 resources and 20-25 hours of teaching material.

>> FORT MCMURRAY DELIVERY

On October 19, 2018, MindFuel brought Ignition Packs and professional learning to science teachers from both Fort McMurray school districts with the support from two senior Syncrude Canada representatives.

- 43 kits distributed
- 31 teachers & administrators
- 90 hours of professional learning
- Fort McMurray Public Schools and Fort McMurray Catholic Schools

>> Ignition Pack Testimonials from article

When Mayor Don Scott thanked Syncrude Canada and MindFuel, he said the donation was an "investment in youth... You are helping leaders of tomorrow."

"These resources provide teachers with high quality science units. The activities are highly engaging and allow for a variety of hands-on opportunities for exploration and experimentation. These instructional units were developed with other areas of the curriculum in mind, integrating literacy and numeracy into science activities, as well as incorporating 21st century skills."

Merrie-Rae Mitsopolous, Director of Education, Fort McMurray Public Schools

THURSDAY, NOVEMBER 1, 2018 ■ FORT MCMURRAY TODAY

school column

MindFuel helps fuel the minds of science students

"The Wetlands Ignition Packs are fantastic because they allow students to zero in on information that is specific to Alberta. The interactive online content also allows our students to virtually travel to and interact with ecosystems in other parts of Alberta that we don't have access to up here in the North."

Emilie Giroux, grade 5 teacher who has used the Ignition Pack for two years

STEM Futures

On November 23, 2018 -MindFuel hosted STEMFutures, with thanks to Bennett Jones LLP for use of its facility. The third in our Innovation Exchange series, STEMFutures is a thought-leadership event to share insights with communities of interest across Alberta and the country, and to inspire the diverse stakeholders we serve to reflect upon how we can work collaboratively to strengthen community critical to building our future. The theme of the 2018 STEMFutures was Young Innovators and showcased post-secondary students enrolled in the geekStarter program who were in the midst of developing solutions to some of the world's most critical challenges, including: cancer cell de-vascularization, keratin breakdown in municipal waterway systems, revitalizing the bee population and rapid blood-clotting solutions.

- 8 students
- 12 teachers
- 38 business representatives and subject matter experts

" I've been really lucky to have been a participant of the the geekStarter program through the iGEM Competition, for three years now, and to be honest, this program has quite literally changed my life. iGEM stands for the International Genetically Engineered Machine Competition. It is an annual research and design competition that challenges students across the globe to develop biology-based solutions for real world issues. Starting in high school and up until this year, I've been an active member of the Edmonton iGEM teams. In 2016, our project aimed to produce oxygen for Mars colonization using bacteria. In 2017, our project aimed to develop a novel drug discovery platform. And this year, my team aimed to develop a much needed treatment for honey bee fungal infections, an issue that is crucial to Alberta's honey industry. And throughout these three years, geekStarter support has given us the means to compete and has been paramount to the success of our projects."

Ethan Agena, post-secondary student, University of Alberta; current geekStarter participant

STEM Futures

>> Special Guests & Speakers:

Cassy Weber, CEO, MindFuel

Jim Gray, founder and honourary chair, MindFuel

Jana Hanova, director, Evok Innovations

Ryan Nicholas Hofer, president, Collegiate Entrepreneurs Organization at Hunter Hub for Entrepreneurial Thinking, University of Calgary

Luc Arvasais, high school teacher, Our Lady of the Snows Catholic Academy (Canmore) and six-year geekStarter alumni champion

Ethan Agena, post-secondary student, University of Alberta; current geekStarter participant

David Lloyd, co-founder and CEO, FREDsense Technologies and geekStarter alumni

Christian Emond and **Sam Wilton-Clark**, members of the University of Calgary iGEM team

>> In-kind supporter:

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2018 SCHOLARSHIP RECIPIENTS

MindFuel and ASTech Foundation scholarships are an investment in Alberta's future. Supported through donations received via our annual fundraising campaign, MindFuel offers five scholarships awarded to students graduating from Alberta high schools and entering their first year of STEM-related studies at an accredited Alberta post-secondary institution (university, college, or polytechnic).

- 5 Alberta grade 12 high school recipients
- 20% Rural, 80% urban, 80% female
- 5 awards

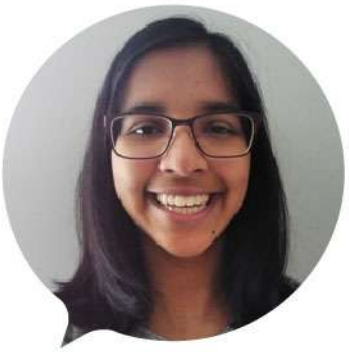
>> EMPOWERING STEM THINKING

The scholarship recipients all now in their first year of post-secondary education are:

Nimaya De Silva

Award: Jim Gray

- Graduated: Winston Churchill High School (Lethbridge)
- Studying: Bachelor of Science in Biomedical Sciences
- Goal: to become a medical scientist, biomedical engineer or family physician



"First year was certainly a year full of surprises--both good and bad. The experiences I had have formed the foundation for the rest of my post-secondary career. The friends I made, habits I formed and the classes I entered were all worthwhile, and have made meaningful impacts to my future. By the end of this year, I had made mistakes, learned from them and I am now ready to see what next year will hold."

Ryane Fyith

Award: Anne Tingle

- Graduated: J.A. Williams High School (Lac La Biche)
- Studying: Bachelor of Science in Kinesiology
- Goal: to become a sports medicine doctor, OBGYN or surgeon

"I am so grateful to have been given the opportunity to pursue further education in a program, Kinesiology, that I am really passionate about. This year has really allowed me to open my eyes and view the world with a different perspective on a variety of things. Thank you for believing in me and helping me take the first steps towards my dreams. I hope that one day I will be able to make a difference in others' lives like this scholarship has done for me!"

Ben Lokanc

Award: Arlene Ponting

- Graduated: Notre Dame High School (Calgary)
- Studying: Bachelor of Applied Science in Engineering
- Goal: to become a software or computer engineer, or to work in biomedical engineering

"The best part of my first year of university was meeting so many like-minded individuals and forming bonds that I know will last beyond my university years. It was definitely a learning experience - learning new ways to study, learning to manage the social aspect of my life with the academic part of it, and learning how to deal with the stress of exams. I wouldn't trade this experience for anything. I am so very grateful for MindFuel and to have been granted the Dr. Arlene Ponting scholarship."

Bushra Anjum

Award: ASTech

- Graduated: J. Percy Page High School (Edmonton)
- Studying: Bachelor of Science
- Goal: to become a pediatrician

"Firstly, thank you for the support that you have given me! It was hard to adjust to the expectations and rigor of university life, however, winning this scholarship had a big impact on my mindset during my first year. It has reinforced my self-confidence and pushed me towards pursuing opportunities that have helped me decide my future career path. Before this scholarship, my goal of medicine seemed out of reach, however, believing that I am a valuable investment has truly impacted my goals and ambitions for the future."

Femi Akinola

Award: ASTech / GrowSafe Systems Founders, in memory of Dr. Terry Rachuk, PhD

- Graduated: Lindsay Thurber High School (Red Deer)
- Studying: Bachelor of Science in Chemical Engineering
- Goal: to develop sustainable solutions for clean water worldwide

"My first year of university has taught me that a strong will is everything, and skill accompanies resolve. Because of your support, this year has been one of interest and great learning for me. I am excited about my future, and my goal is still to design devices that help people, such as clean water technologies or medical devices. This scholarship award has permitted me to pursue my goals, and achieve them. I remain very honoured and thankful to everyone from the MindFuel and ASTech Foundations for providing me with immense financial respite, and the courage to try my best."

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