

BASER 2019

Annual Report

Bay Area Science and Engineering Fair
presented by ArcelorMittal Dofasco

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Big ideas ...
Infinite possibilities

Sparking the love of science and technology in our youth!

The Bay Area Science and Engineering Fair (BASEF) is one of 100+ Youth Science Canada affiliated regional science fairs. From March 28 to April 2, 2019, BASEF presented its 59th Annual Fair at Mohawk College in Hamilton. Thanks to Mohawk College for providing an excellent venue and helping us support the 466 students who participated in the Fair.

BASEF's goal is to make Science Fair participation a rewarding and enjoyable experience. We believe all students should be given the opportunity to participate in science fairs.

Students learn invaluable academic and life skills through researching, experimenting, displaying and presenting their projects. The judging process and public viewing components at the Fair allow students to practice their presentation and communication skills and to gain self-confidence and a sense of accomplishment for a job well done.

BASEF inspires young people to positively impact the world through science, technology, engineering and mathematics. BASEF provides opportunities for students to showcase their innovations and discoveries.



"Science: It's like magic, only real!"



Pinnacle Award winners Arielle Ainabe (left), Sabrina Mogus, and Anne Jing.

Strategic Planning Initiative: The BASEF strategic planning activity continues as we execute planned improvements. We identified our key focus for the future and formed groups to explore new ideas that we may want to implement and expand. This will strengthen our Fair and take us boldly into the future.

Alumni Project: BASEF is looking for alumni! Since 1960, there have been over 20,000 participants in this Fair! BASEF has formed an Alumni Association and is excited to invite BASEF alumni to get in touch with us. We want to connect alumni with today's innovators and budding scientists. We can use your help as mentors, volunteers and sponsors. Tell us what you are doing today and how you would like to get involved. Contact us at basef@basef.ca.

Bursary Program: This year, thirty five bursaries were awarded to students nominated by their teachers, representing five area school boards. Eighteen of the teachers were first time participants in this program which assists students in financial need to participate in project-based science and to complete a project. Here is one testimonial from a teacher:

"This is a great program to show that equal opportunities are given to all regardless of your socio-economic background! Seeing that our marginalized students are being recognized and are given these amazing opportunities will just boost their confidence and that confidence will stretch into so many domains in their academic and extra-curricular endeavours! Great job!! Thanks!!!".

Fair Highlights

Over **\$300,000** in cash, prizes, trips, scholarships and participation awards.

Merit Awards
sponsored by
Primary Fluid



**Primary Fluid
Systems Inc.**

Systems, amounting to over \$10,000 were given to 192 students. All Merit Award winners also receive merit scholarships provided by Mohawk College and Sheridan College (total value \$192,000).



Special Awards

Over 200 special awards totaling \$31,050 in cash awards, \$13,000 in scholarships and an internship valued at \$3,000 were presented to deserving students.



Dan Bowman (left) and Christopher Lamont at CWSF 2019

Volunteering



BASEF chaperones show off their traditional henna lobster tattoos!

BASEF thrives on volunteers! In fact, everyone involved with BASEF is a volunteer! We are thankful to over 350 dedicated volunteers who help by donating their time to make our fair the huge success that it is!

Volunteering at BASEF can include as little as three hours before or during the Fair to long term planning on the committee. Opportunities include: judges, mentors, fundraisers, planners, marketers, etc. Send us an email to sign up: volunteers@basef.ca

Bay Area Science and Engineering Fair
c/o Mohawk College,
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Hamilton, ON L9C 0E5

www.basef.ca

basef@basef.ca

Registered Charity #BN 11895 1565 RR0001

Cover image:

The Periodic Table of Chemical Elements, developed in 1869, has significantly influenced many scientific fields. 2019 is the 150th anniversary of this discovery so the United Nations General Assembly and UNESCO proclaimed 2019 the “**International Year of the Periodic Table of Chemical Elements (IYPT2019)**”. Learn more at <https://iypt2019.org/>

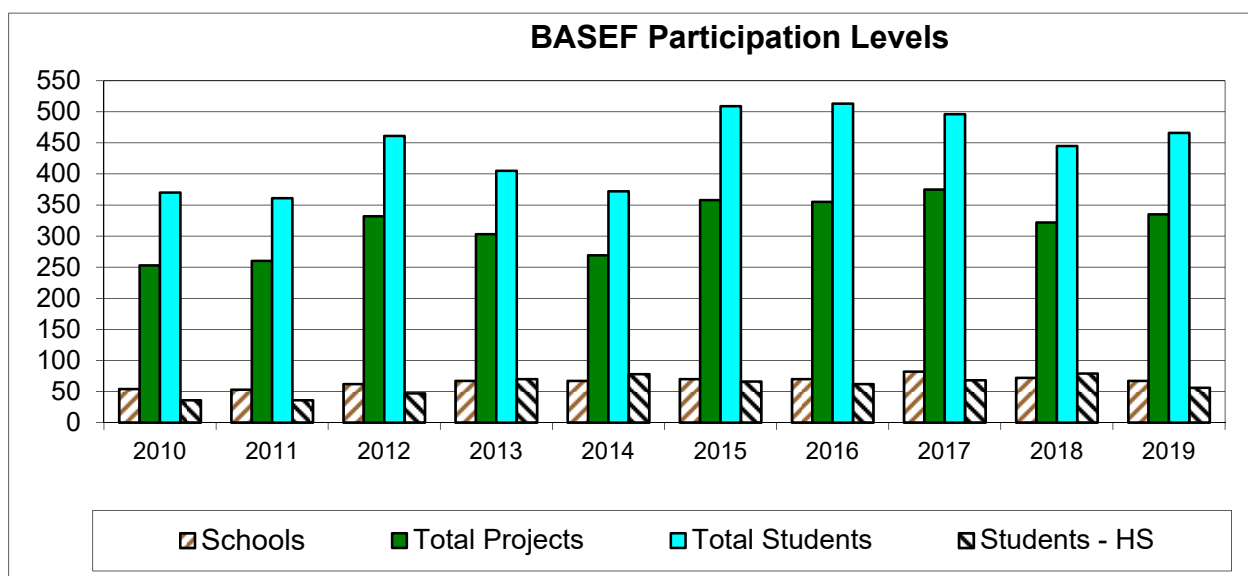
Student Participation



BASEF students sing and dance at the CWSF talent show



Looks a bit chilly during the student tours at CWSF



Fun in the lab at U New Brunswick with Lily Smales (left), Rya Adronov, George Geczy (chaperone)

"Once I told a chemistry joke. There was no reaction."



Student tours to the Sea Caves, NB.

"I might look like I am doing nothing, but at the cellular level, I'm really busy!"

National and International Fair Winners

Canada Wide Science Fair



Canada Wide Science Fair (CWSF) team, May 11 - 17, 2019, Fredericton, New Brunswick (left to right): Maya Clapperton, Christina Hanna, Monica Mahut, Lily Smales, Ethan Chiang, Jacob Meleka, Mohammed Torkmani, Raphael Xu, Tavian Augustus, Rya Adronov, Mitchell Clapperton, Paul Kyum Lee, Anthony Saturnino, David Vidican, Evan Shvetsov, Jeffrey Klinck, Christopher Lamont.

Canada Wide Science Fair (CWSF) - National Competition Results

Christopher Lamont St. Margaret Mary, Hamilton, Hamilton-Wentworth Catholic District School Board	<i>'Development of an Intravenous Fluid Delivery System (IV FDS) for use in Developing Countries'</i> Gold Excellence Award Youth Can Innovate Award and the S. M. Blair Family Foundation Award
Anthony Saturnino St. Margaret Mary, Hamilton, Hamilton-Wentworth Catholic District School Board	<i>'Eave 3.0: An Autonomous Robotic Eavestrough Cleaner using Artificial Intelligence'</i> Gold Excellence Award
Mohammed Torkmani and Raphael Xu Maple Grove Public School, Oakville, Halton District School Board	<i>'Plastic Delicacies'</i> Silver Excellence Award
Rya Adronov Sir William Osler, Dundas, Hamilton-Wentworth District School Board	<i>'Ti-Dye Energy: Natural Dye Combinations in Dye-Sensitive Solar Cells'</i> Silver Excellence Award
Jeffrey Klinck W. H. Morden Public School, Oakville, Halton District School Board	<i>'Using B.C.I. And A.I. For Emotion Detection For Mental Health Applications'</i> Silver Excellence Award
Tavian Augustus St. Augustine, Dundas, Hamilton-Wentworth Catholic District School Board	<i>'The Solar Step'</i> Bronze Excellence Award
Ethan Chiang St. Andrew Elementary, Oakville, Halton Catholic District School Board	<i>'Proteolytic Effect of Fruit Enzyme Homogenate on Beef with Varying Degrees of Doneness'</i> Bronze Excellence Award
Mitchell Clapperton Guy B. Brown, Waterdown, Hamilton-Wentworth District School Board	<i>'Aero-Tronics: A High Pressure Aeroponics System for Sustainable Indoor Agriculture'</i> Bronze Excellence Award
Christina Hanna King's Christian Collegiate, Oakville, Independent	<i>'Eco-Friendly Rusting Solutions through Redox Reactions Regarding Economic Sustainability'</i> Bronze Excellence Award
Paul Kyum Lee Dalewood, Hamilton, Hamilton-Wentworth District School Board	<i>'Conserving Momentum with MMDs'</i> Bronze Excellence Award
Monica Mahut M. M. Robinson High School, Burlington, Halton District School Board	<i>'Elevator to Everywhere'</i> Bronze Excellence Award
Lily Smales W. H. Morden Public School, Oakville, Halton District School Board	<i>'Convolutional Neural Network to Detect Eyes with Early Stages of Visual Impairment'</i> Bronze Excellence Award

Intel International Science and Engineering Fair



*What you do makes a difference.
And you have to decide what kind of
difference you want to make.
- Jane Goodall*

Intel International Science & Engineering Fair (ISEF) team, May 12 - 18, 2019, Phoenix, Arizona (left to right): Sabrina Mogus, Arielle Ainabe, Anne Jing, Joseph Saturnino, Neha Gupta (Observer).

Intel International Science and Engineering Fair (ISEF) - International Competition Results

Anne Jing Assumption College School, Brantford	"Project ATTIS: An Assistive Aid for Parkinson's Patients Using Vibrational White Noise to Reduce Resting Tremors" 1st place in the category of Biomedical Engineering, US\$3,000 Award
Joseph Saturnino Bishop Ryan Catholic Secondary School, Hamilton	"Robotic Revolution in the Construction Industry: An Autonomous Roof Shingling Robot" 2nd place in the category of Robotics and Intelligent Machines, US\$1,500 Award
Sabrina Mogus White Oaks Secondary School, Oakville	"TLC - Tigernut Liquid Coagulant: An Undiscovered Biocoagulant for Water Turbidity Reduction" 3rd place in the category of Environmental Engineering, US\$1,000 Award

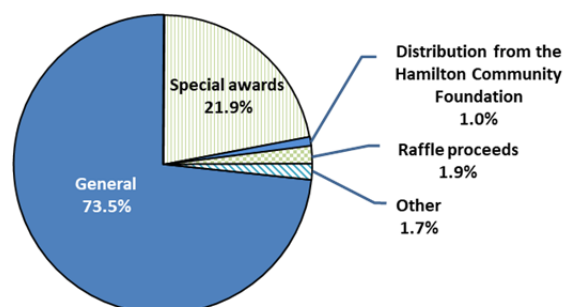


**Please join us for the 60th annual BASEF
March 26 – March 31, 2020
at Mohawk College**

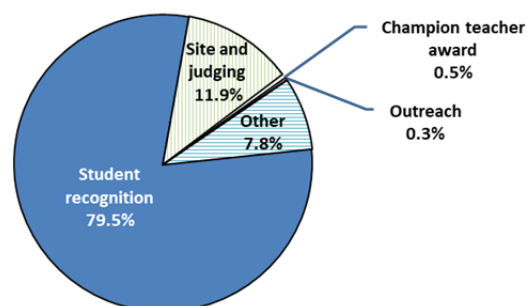
Financial Highlights – Statement of Operations

For the year ended August 31, 2019 (unaudited)

Revenue	2019	2018
General	\$ 103,455	\$ 101,177
Special awards	30,900	30,650
Distribution from the Hamilton Community Foundation	1,434	2,516
Raffle proceeds	2,640	2,226
Other	2,432	3,418
	<u>\$ 140,861</u>	<u>\$ 139,987</u>



Summary of Expenses	2019	2018
Student recognition	\$ 104,996	\$ 102,386
Champion teacher award	606	446
Site and judging	15,788	13,334
Outreach	364	200
Other	10,368	9,206
	<u>\$ 132,122</u>	<u>\$ 125,572</u>
Excess of Revenue Over Expenses	<u>\$ 8,739</u>	<u>\$ 14,415</u>






Disbursements to Students

Bursaries	\$ 750
CWSF trips	39,540
Special awards	30,223
IISSEF trips	17,535
Merit awards	10,340
Participation awards	4,767
Prize expenses	1,841
	<u>\$ 104,996</u>

Other

Ceremony & sponsor recognition	\$ 3,604
Administrative	2,899
Bank charges	905
Volunteers	2,297
Registration	399
Fundraising	50
Marketing & publicity	59
Raffle expenses	155
	<u>\$ 10,368</u>

Sponsors

Presenting (\$25,000+)			
<div> ArcelorMittal DOFASCO HAMILTON</div>			
Diamond (\$10,000+)	Platinum (\$5,000+)	Gold (\$2,500+)	
<div>  Primary Fluid Systems Inc.</div>	Hamilton & District Heavy Construction (HAND) Association Imperial Oil Nanticoke Refinery Masters Insurance McMaster University The Hamilton Spectator	Alectra Utilities Corporation Bay Area Health Trust Bennett Mechanical Installations Interprovincial Corrosion Control Lifetouch McMaster Innovation Park Taylor Leibow Accountants & Advisors	
Silver (\$1,000+)	Bronze (\$500+)		
Appleby College Canadian Linen & Uniform Service City of Hamilton Economic Development Department Halton District School Board Hamilton-Wentworth Catholic District School Board Hamilton-Wentworth District School Board Hillfield Strathallan College John Deere Canada ULC King – KPM Industries Nikola Tesla Educational Corporation NSERC Ontario Power Generation Posner Metals	A.T. McLaren Limited D.E.N.M. Engineering Halton Catholic District School Board Hamilton Amateur Astronomers Hamilton Chamber of Commerce Hamilton Community Awareness and Emergency Response (CAER)	Hamilton Police Senior Officers Association Judy Marsales Real Estate Lanhack Consultants Inc. Optimist Club of Stoney Creek Rotary Club of Waterdown Society of Tribologists & Lubrication Engineers Vizyia Corp.	
	Friends (\$250+)		
	Conservation Halton Electrical Construction Association Of Hamilton Hamilton Police Retirees Association	McMaster University Department of Materials Science and Engineering NewAE Technology Inc. Talkit.ca Inc.	
Benefactors*			
Banting & Best Level (\$1000+)	Bondar Level (\$500+)	Polanyi Level (\$200+)	McGill Level (\$50+)
Mike and Sue McNally Michael Taylor David Walker	Steve and Cathy Hayman Peter and Susan Olynky	Helen Barton Dan and Debbie Bowman Steven and Kathy Brent Tom and Roslynne Crawford Renato and Enza DeTina John and Eleanor O'Flynn Dr. Nicola Simmons	Jim Casey Jo-Anne Connery Brandi Kehoe Jason Legg Linda Hazelden Linda Millar Norman Young
* In addition to the donors listed, BASEF also has donors who wish to remain anonymous.			

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Note: Sponsors donating in-kind services help us provide an exceptional experience for BASEF participants. Key in-kind donations included: Printing, posters, newspaper advertising, trip winners' jackets, photo ID tags, accounting, and web hosting.