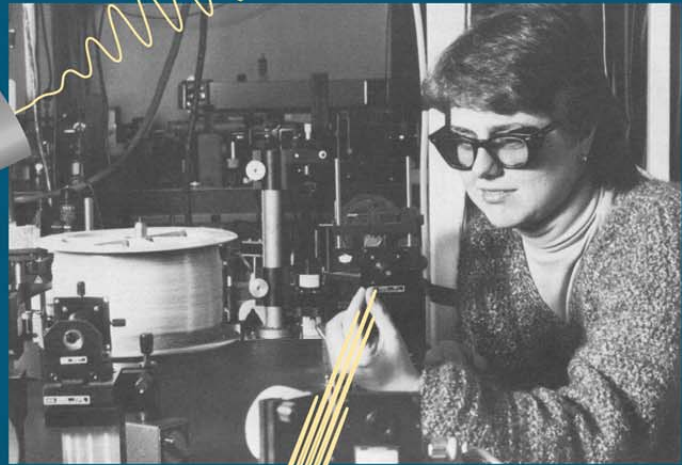




# BASEF 2018

Annual Report

Bay Area Science and Engineering Fair  
presented by ArcelorMittal Dofasco



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. On March 21-27, 2018 BASEF presented its 58<sup>th</sup> Annual Fair at Mohawk College in Hamilton. Thanks to Mohawk College for providing an excellent venue and helping us support the 450 students who participated in the Fair.

BASEF is the regional Fair for the City of Hamilton, Region of Halton, Six Nations, and the counties of Brant, Haldimand and Norfolk. It is open to over 100,000 students from grades 7 to 12 attending public, separate, independent, private and home schools. BASEF is a Registered Charity #BN 11895 1565 RR0001.

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's goal is to make Science Fair participation a rewarding and enjoyable experience. Students may not win big in their first or even second Science Fair competition, but they gain the tremendous opportunity to meet other students interested in science and engineering. Students also have the opportunity to share their passion with the judges and with the public.



Yaser & Aayaan proudly show off this year's BASEF T-shirt which is given to all participants & volunteers.

**Strategic Planning Initiative:** This past year, the BASEF organizing committee formed a smaller team to complete strategic planning. This will strengthen our Fair and take us boldly into the future. The Fair has a new mission and vision. We identified our key focus for the future and formed groups to explore new ideas that we may want to implement and expand. Thanks to committee member, Renato De Tina, for his leadership and initiative in forging this effort.

### BASEF's NEW Mission Statement

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

**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](mailto:basef@basef.ca).



Leo DeMeo of ArcelorMittal Dofasco presents the AMD Pinnacle Best in Fair Award to Joseph Saturnino.

## 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 \$11,000 were given to 209 students. All Merit Award winners also receive merit scholarships provided by Mohawk College and Sheridan College (total value \$209,000).



Over 200 special awards totaling \$29,600 in cash awards, \$13,000 in scholarships and an internship valued at \$2,200 were presented to deserving students. Two new schools won a cash award for use in their classroom. Special awards are given to projects of specific interest to almost 50 donors.



30 years of BASEF volunteering and 3 generations in the Bowdish family: Wayne (left) is a long time Committee member and is joined by his grandson, Brandon, and son, Ryan.

## Volunteering



CWSF volunteer chaperones: Dan Bowman, Varsha Jayasankar, Donna Stack-Durward and George Geczy

Without our dedicated volunteers, BASEF would not happen! BASEF is one of Canada's premier regional Science and Engineering Fairs and is always looking for committed and interested volunteers of all ages. BASEF is very thankful to over 350 volunteers who help by donating their time to make our Fair as successful as possible every year.

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](mailto:volunteers@basef.ca)

**Bay Area Science and Engineering Fair  
c/o Mohawk College,  
135 Fennell Ave West, Room F175  
Hamilton, ON L9C 0E5**

[www.basef.ca](http://www.basef.ca)

Cover image:

A representation of the 2018 Nobel prize winning work of Donna Strickland.

*The Nobel Prize in Physics 2018. NobelPrize.org. Nobel Media AB 2018. Wed. 24 Oct 2018.*  
<<https://www.nobelprize.org/prizes/physics/2018/summary/>>

Photo credit:

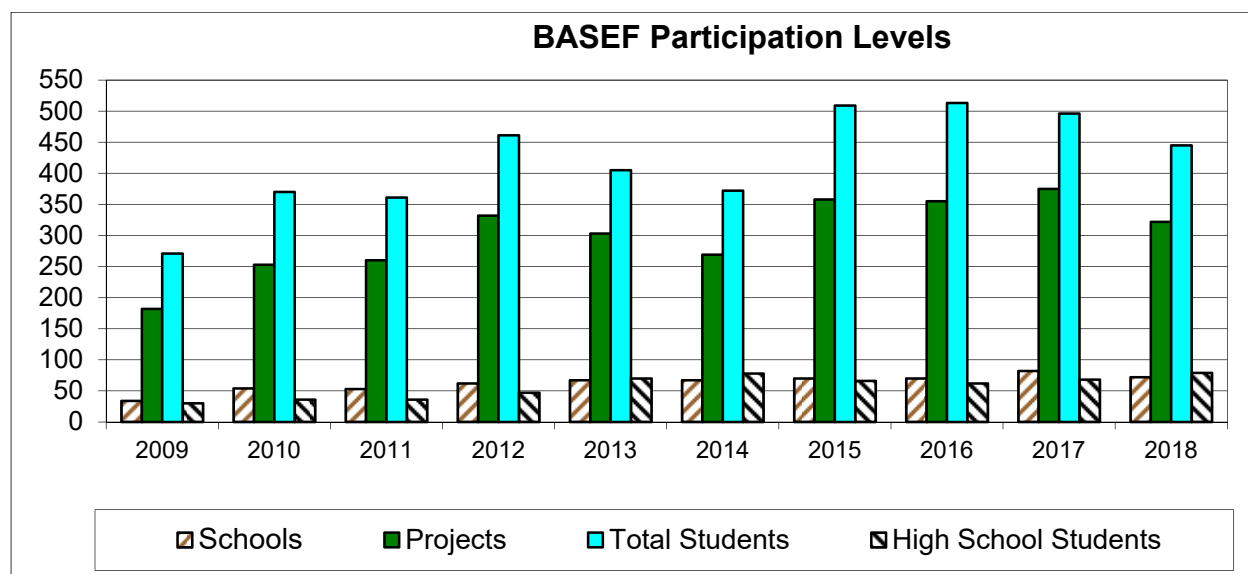
[https://en.m.wikipedia.org/wiki/File:Donna\\_Strickland\\_as\\_a\\_graduate\\_student\\_at\\_the\\_University\\_of\\_Rochester.jpg](https://en.m.wikipedia.org/wiki/File:Donna_Strickland_as_a_graduate_student_at_the_University_of_Rochester.jpg)



## Activity Morning at BASEF

BASEF Activity Morning includes both BASEF participants and local Grade 7-8 students in a morning program designed to promote STEM engagement and encourage interest in future BASEF participation. Attendance at this captivating show was approximately 500 BASEF students and an additional 515 students from eleven schools (not participating in BASEF) within the BASEF catchment area. Presenters included:

- Tyler Ustrizycki (Tesla Motors) provided a captivating presentation of his work as an engineer working on Tesla electronic cold weather adaptation. Tyler showed students how employment is no longer localized but is now global. He finished his presentation with corporate footage courtesy of Space X of the Falcon Heavy test launch of “Spaceman.”
- John Gauvreau (Hamilton Amateur Astronomers) inspired the students to put their STEM goals on a more astronomical scale. John built upon the Space X presentation clip showing the latest in astronomy research fueled through private and public partnership in rocket launches supporting exploration of the cosmos.
- Dr. Colin Campbell and Vic Djurdjevic (Nikola Tesla Educational Corporation) narrated a play around how electricity first came to Hamilton 120 years ago. BASEF students were the stars of this historic show. It told the story of how five men named John and the inventor, Nikola Tesla, worked together to make electrification of Hamilton a practical application of STEM.
- Randy Dumont, Paul Harrison, and Lydia Chen (McMaster University Chemistry Show) demonstrated the potential of chemistry through an orchestrated series of live demonstrations.



Team BASEF (Canada Wide Science Fair winners) in Ottawa enjoying the sights in our capital city!

## National and International Fair Winners

### Canada Wide Science Fair



Team BASEF (l to r): Claire La Donne, Monica Mahut, Neha Gupta, Markus Kunej, Ellie Xu, Benjamin Waldie, Krish Joshi, Sean Romel, Stefanie Mahut, Kailas Chari, Connor McCourt, Anne Jing, Christopher Lamont, Andrew Probert, Anthony Saturnino, & Mitchell Clapperton.

Sixteen students won all-expenses paid trips to the Canada Wide Science Fair (CWSF) held in Ottawa, ON from May 12-19, 2018. Chaperones, who mentored and coached the students, were Dan Bowman (Lead), George Geczy, Donna Stack-Durward and Varsha Jayasankar. This year TEAM BASEF consisted of 10 male and 6 female students, with 9 junior, 3 intermediate and 4 senior projects.

### Canada Wide Science Fair (CWSF) - National Competition Results

<b>Kailas Chari</b> , Maple Grove Public School, Oakville, HDSB (Grade 8)	Project: <i>'Freezing Point Depression of Different Salts in Varying Concentrations in Solution'</i> <b>Gold Excellence Award and a CHALLENGE AWARD - ENVIRONMENT</b>
<b>Markus Kunej</b> , North Park Collegiate and Vocational School, Brantford, GEDSB (Grade 12)	Project: <i>'The Echo Belt: Navigation Technology for the Visually Impaired'</i> <b>Gold Excellence Award</b>
<b>Mitchell Clapperton</b> , Guy B. Brown Public School, Waterdown, HWDSB (Grade 7)	Project: <i>'Automated Bottle Opener'</i> <b>Silver Excellence Award</b>
<b>Christopher Lamont</b> , St. Margaret Mary, Hamilton, HWCDSB (Grade 8)	Project: <i>'Use of Technology to Reduce Medical Complications: Development of a Smart Cast'</i> <b>Silver Excellence Award &amp; YOUTH CAN INNOVATE AWARD</b>
<b>Neha Gupta</b> , Sir William Osler Public School, Dundas, HWDSB (Grade 8)	Project: <i>'A Hydrogen Fuel Cell as a Renewable Energy Source Using Water Electrolysis'</i> <b>Bronze Excellence Award</b>
<b>Krish Joshi</b> , Robert Bateman High School, Burlington, HDSB (Grade 9)	Project: <i>'Tackling Pseudomonas aeruginosa Biofilm Resistance: Synergy of Bacteriophage &amp; Grapeseed Phenolics'</i> <b>Bronze Excellence Award</b>
<b>Monica Mahut</b> , M. M. Robinson High School, Burlington, HDSB (Grade 10)	Project: <i>'WATS UP: Water Activated Transportation System Uplifting Physics'</i> <b>Bronze Excellence Award</b>
<b>Stefanie Mahut</b> , Rolling Meadows Public School, Burlington HDSB (grade 8)	Project: <i>'TWEET: Torsionally Whirling Environmentally Esthetic Turbine'</i> <b>Bronze Excellence Award</b>
<b>Connor McCourt</b> , Oakville Christian School, Oakville, Independent School (Grade 8)	Project: <i>'Pee-Tricity'</i> <b>Bronze Excellence Award</b>
<b>Anthony Saturnino</b> , St. Margaret Mary, Hamilton, HWCDSB (Grade 7)	Project: <i>'HCDPS - Hot Car Death Prevention System'</i> <b>Bronze Excellence Award</b>
<b>Ellie Xu</b> , Garth Webb Secondary School, Oakville, HDSB (Grade 11)	Project: <i>'C.O.D.I.A. (Computer Operated &amp; Delightfully Intelligent Assistant)'</i> <b>Bronze Excellence Award</b>

## Intel International Science and Engineering Fair



Team BASEF (l to r): Kishore Jaiswal, Rishi Popuri, Arielle Ainabe, Anika Gupta, Joseph Saturnino and Michael Wolfe.

Five outstanding high school projects won all-expense paid trips to the Intel International Science & Engineering Fair (ISEF) in Pittsburgh, Pennsylvania from May 12 - 18, 2018. Chaperones Dana Bee (lead) and Ming Chong, from the BASEF Organizing Committee, mentored and escorted the students.

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

<b>Michael Wolfe</b> , King's Christian Collegiate, Oakville (Grade 10)	Project: <i>ENMC054 — EVERSE: Electric Vehicle Energy Recovery and Safety Enhancement</i> 4 <sup>th</sup> Place - ENGINEERING MECHANICS: Award of \$500 and <u>International Council on Systems Engineering – INCOSE</u> Certificate of Honorable Mention
<b>Kishore Jaiswal</b> and <b>Rishi Popuri</b> , Hillfield Strathallan College, Hamilton (Grade 11/12)	Project: <i>ENEV070T — Utilizing the Limestone Cycle to Reduce Net Atmospheric CO2 While Simultaneously Producing Electricity</i> <u>ASU Rob and Melani Walton Sustainability Solutions Initiatives</u> : Award of \$1,000
<b>Arielle Ainabe</b> , Garth Webb Secondary School, Oakville (Grade 11)	Project: <i>MCRO054 — Tardigrade Mech: A Biomimetic System for Advanced Radiation Protection in Space</i> <u>National Aeronautics and Space Administration (NASA)</u> 2 <sup>nd</sup> Place Award of \$750 which commends research for its excellence and ingenuity in meeting the challenges of the US civilian space program.

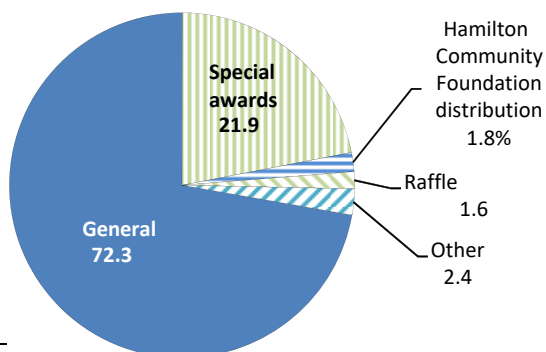


**Please join us next year for the 59<sup>th</sup> annual BASEF  
 March 28 – April 2, 2019  
 at Mohawk College**

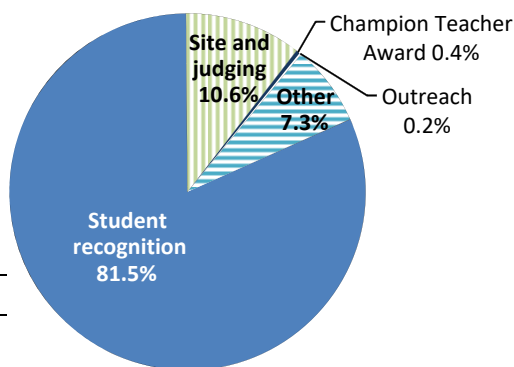
## Financial Highlights – Statement of Operations

For the year ended August 31, 2018 (unaudited)

Revenue	2018	2017
General	\$ 101,177	\$ 98,365
Special awards	30,650	29,850
Hamilton Community Foundation distribution	2,516	-
Sale of backboards	-	9,912
Raffle proceeds	2,226	2,510
Other	3,418	2,144
	<u>\$ 139,987</u>	<u>\$ 142,781</u>



Summary of Expenses	2018	2017
Student recognition	\$ 102,386	\$ 105,123
Champion teacher award	446	343
Site and judging	13,334	13,687
Outreach	200	200
Project backboards	-	9,281
Other	9,205	7,802
	<u>\$ 125,572</u>	<u>\$ 136,436</u>
<b>Excess of revenue over expenses</b>	<u>\$ 14,415</u>	<u>\$ 6,345</u>



### Disbursements to Students









Bursaries	\$ 570
CWSF trips	37,130
Special awards	29,997
IISEF trips	16,799
Merit awards	11,075
Participation awards	4,406
Prize expenses	1,972
Student activities	135
Technology seed initiative	302
	<u>\$ 102,386</u>

### Other Expenses

Ceremony & sponsor recognition	\$ 2,824
Administrative	2,639
Bank charges	406
Volunteers	1,622
Registration	562
Fundraising	949
Marketing & publicity	64
Raffle expenses	140
	<u>\$ 9,205</u>



## Sponsors

Title Sponsor (\$15,000+)				
 <p>ArcelorMittal DOFASCO   HAMILTON</p>				
Diamond (\$10,000+)		Platinum (\$5,000+)		Gold (\$2,500+)
 <p>"You can always count on us." <b>LEGGAT</b> AUTO GROUP   LAG.CA</p>  <p><b>MOHAWK</b> COLLEGE</p>  <p><b>Primary Fluid Systems Inc.</b></p>		 <p>THE HAMILTON <b>SPECTATOR</b> —thespec.com—</p>  <p>HAMILTON AND DISTRICT SCHOOL BOARD</p>  <p>McMaster University</p>  <p>NIKOLA TESLA EDUCATIONAL CORPORATION</p>		<p>Interprovincial Corrosion Control Co.</p> <p>Lifetouch</p> <p>Masters Insurance</p> <p>McMaster Innovation Park</p> <p>Taylor Leibow Accountants &amp; Advisors</p> <p>Union Gas Ltd.</p>
Silver (\$1,000+)		Bronze (\$500+)		
<p>Appleby College</p> <p>Canadian Linen &amp; Uniform Service</p> <p>City of Hamilton Economic Development Department</p> <p>Halton Catholic District School Board</p> <p>Halton District School Board</p> <p>Hamilton Police Senior Officers Ass'n</p> <p>Hamilton-Wentworth Catholic District School Board</p> <p>Hamilton-Wentworth District School Board</p> <p>Hillfield Strathallan College</p> <p>John Deere Canada ULC</p> <p>King - KPM Industries</p> <p>Magna International</p> <p>Ontario Power Generation – Nanticoke</p> <p>Posner Metals</p>		<p>A.T. McLaren</p> <p>BattleGoat Studios</p> <p>D.E.N.M. Engineering Ltd.</p> <p>Hamilton Amateur Astronomers</p> <p>Hamilton Chamber of Commerce</p> <p>Hamilton Community Awareness &amp; Emergency Response</p> <p>Judy Marsales Real Estate</p>		<p>Lanhack Consultants</p> <p>Optimist Club of Stoney Creek</p> <p>Rotary Club of Hamilton AM</p> <p>Rotary Club of Waterdown</p> <p>Society of Tribologists &amp; Lubrication Engineers – Hamilton Section</p> <p>Sun-Canadian Pipe Line Limited</p> <p>Triple M Metal</p> <p>Viziya Corp.</p>
		Friends (\$250+)		
		<p>Conservation Halton</p> <p>Electrical Construction Association of Hamilton</p>	<p>NewAE Technology</p> <p>Talkit.ca</p>	
Benefactors				
Banting & Best Level (\$1000+)	Bondar Level (\$500+)*	Polanyi Level (\$200+)		McGill Level (\$50+)
<p>Mike &amp; Sue McNally</p> <p>Michael Taylor</p>	<p>Steve &amp; Cathy Hayman</p> <p>Peter &amp; Susan Olynyk</p>	<p>Helen Barton</p> <p>Dan &amp; Debbie Bowman</p> <p>Steven &amp; Kathy Brent</p> <p>Tom &amp; Roslyne Crawford</p> <p>Renato &amp; Enza DeTina</p> <p>John &amp; Eleanor O'Flynn</p>		<p>Jim Casey</p> <p>Jo-Anne Connery</p> <p>Linda Millar</p> <p>Wayne Schaefer</p> <p>Dr. Nicola Simmons</p> <p>Norman Young</p>
* In addition to the donors listed, BASEF also has donors who wish to remain anonymous.				

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.