

BASEF 2016

Annual Report

Bay Area Science and Engineering Fair
Sponsored by ArcelorMittal Dofasco



ArcelorMittal

Big ideas ...
Infinite possibilities

About BASEF

The Bay Area Science and Engineering Fair (BASEF) volunteer organizing committee planned and staged the **56th Annual Regional Fair**, March 30-April 5, 2016 at Mohawk College in Hamilton. Over 500 students participated in the fair. We thank Mohawk College for their excellent support of 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. BASEF 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*.

Our Mission

To promote project-based science and encourage youth to conduct research in areas of science, technology, engineering, and mathematics (STEM), utilizing the scientific method or engineering design process. 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 allow students to practice their people and communication skills and gain self-confidence and a sense of accomplishment for a job well done.

Our Goals

Our goal at BASEF 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, however they gain the tremendous opportunity to meet other students interested in science and engineering, and get a chance to meet and learn from some of our successful science fair veterans.

* BASEF is a registered charity 118951565RR0001

Major Activities & News

New this year, BASEF initiated a pilot **Bursary Program** to help students in need of financial assistance to complete a science fair project. Based on teacher recommendations, 42 student projects in BASEF's catchment area were given \$25.00 and a project backboard. Seven of these projects won awards and medals at BASEF this year.

Teacher's Activity Day Workshop was presented free of charge to HCDSB on October 28, 2015 with 17 teachers attending from all over Halton. It was presented flawlessly by BASEF's former Chief Judge, Tom Crawford.

BASEF's fundraising committee, under the leadership of Sue Olynyk, attracted 14 new sponsors this year.

Greening marketing (as part of BASEF sponsorship by Leggat Auto Group) produced excellent promotional videos including BASEF participant interviews.

BASEF held a raffle for 2 gold hockey tickets (Toronto vs. Montreal), generously donated by Masters Insurance and raised over \$3000 to support the fair!

More than 200 volunteer judges evaluated over 350 projects by meeting and interviewing the students to discuss their projects. All of these judges are highly respected professionals, doctors, lawyers and researchers, dedicated to assessing students and their projects.



Taylor Hanson receiving the New Health Scientist Award

Fair Highlights

Over **\$200,000** in cash, prizes, trips, scholarships and participation awards.

233 students received Merit Awards



sponsored by Primary Fluid Systems, amounting to over \$12,000. All Merit Award winners received merit scholarships provided by Mohawk College and Sheridan College (total value \$116,500).



Over 170 special awards by over 50 donors, rewarding projects of specific interest to the award donors, were presented to students, totaling \$26,800 in cash, \$10,000 in scholarships and one internship valued at \$2,000. In addition, cash prizes of \$250 were awarded to three outstanding new schools: St. Mary Elementary, Tiger Jeet Singh Public School (both Halton DSB) and Our Lady of Fatima Elementary School (Halton Catholic DSB).

CHAMPION TEACHER

Frank Macchiusi, a grade 7 & 8 teacher at the Hamilton Academy of Performing Arts in Dundas won the Champion Teacher Special Award of \$250 to put towards supplies for science fair projects in his classroom. His students brought 8 projects to BASEF.



BASEF Volunteer Chaperones at CWSF 2016:
George Geczy, Ingrid Munson, Dana Bee, Dan Bowman

Volunteering at BASEF

Without our dedicated volunteers, BASEF would not happen! BASEF is very thankful for everyone who helps to organize and carry out the Bay Area Science and Engineering Fair every year. BASEF is one of Canada's premier regional Science and Engineering Fairs and is always in need of committed and interested volunteers.

Volunteering at BASEF is quite varied and includes:

- Judging which offers not only a very interesting volunteer opportunity, but also a great networking venue with over 200 local educators, business people and technical personnel across many scientific fields.
- Mentoring our future generation of superstar scientists, engineers and researchers
- Fundraising
- Joining our volunteer Organizing Committee
- Security at the Fair
- Event Planning
- Helping students with tasks like set up and tear down of their projects
- Be a Safety Officer
- Help with marketing and publicity
- Photography
- Graphic design

Send us an email to sign up here:

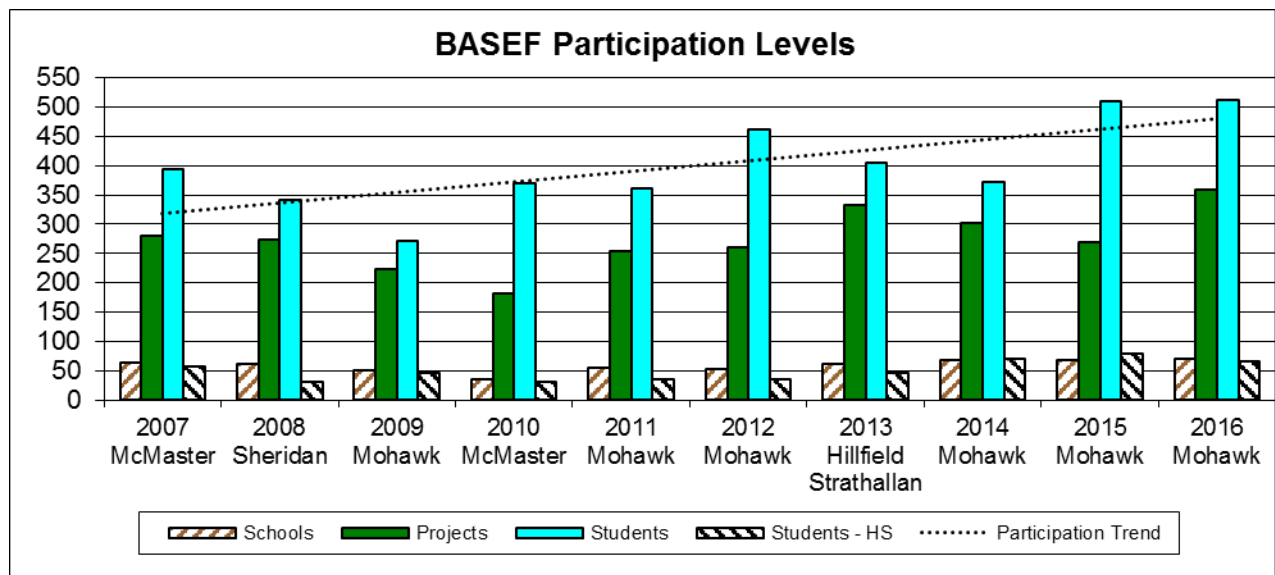
volunteers@basef.ca

Bay Area Science and Engineering Fair
c/o Mohawk College,
135 Fennell Ave West, Room F175
Hamilton, ON L8N 3T2

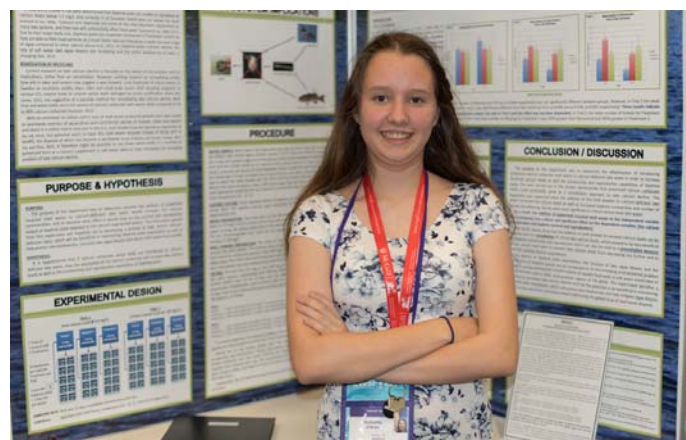
www.basef.ca

Activity Morning at BASEF

Activity Morning is a major STEM outreach event for both BASEF participants and local Grade 7- 8 students designed to engage students. Approximately 1,100 students (nearly 500 from BASEF plus 600 from eight schools) attended this amazing show focusing on Astronomy. Activity morning happens on judging day, when the judges are looking at the students' projects without the students present. Activity day started with a "flyby" of Pluto. Next, the students were shown how good backyard astronomy could be enjoyed on a realistic budget and then a history of backyard astronomy from the earliest days of civilization was presented. The students were wowed with an HD tour of the universe using the best photos from NASA. The McMaster Chemistry show wrapped up the morning with a chemical tour of the molecules within the universe.



Gold Medal winner, Katie Brent at her project



ArcelorMittal Pinnacle Best in Fair winner Isabella O'Brien

National and International Fair Winners

Canada Wide Science Festival



National Competition Results at the Canada Wide Science Fair (CWSF)

Caroline Mahut M.M. Robinson High School, Burlington	Project - Slowing Down to Power Your Town Gold Medal Challenge Award – Top Senior Innovation project
Isabella O’Brien Westmount Secondary School, Hamilton	Aquatic Osteoporosis: Remediating the emerging problem of lake calcium decline Gold Medal Challenge Award – Top Intermediate Environment Project
Zoe Chisholm & Camila Moran-Hidalgo Sir William Osler, Dundas	Antimicrobial Wound Dressing from Synthesized Silver Nanoparticles on Cellulose Gold Medal
Jack Mogus Garth Webb Secondary School, Oakville	Graphene Reinforced Guayule Rubber – Conductive Hypoallergenic Super Nanocomposite Silver Medal Special Award – Australian National Youth Science Forum Award
Katie Brent Notre Dame Secondary School, Burlington	At a Measured Step: An Orthopaedic Pressure-Based Rehabilitative Insole Silver Medal
Paul Drakos Hillfield Strathallan College, Hamilton	A Prototype “Water Coil” for Generating Electricity Silver Medal
Joseph Saturnino St. Margaret Mary School, Hamilton	Wearable Sonar Technology Silver Medal
Margaret Williams Ancaster High School, Ancaster	The Role of Fabric in the Prevention of Nosocomial Illness Silver Medal
Michael Wolfe Trinity Christian School, Burlington	Wi-Tricity on Wheels: Solar / Hydro Wireless Charging of Electric Vehicles Silver Medal
David Vidican St. Matthew, Oakville	TAGUCHI Method Applied for Optimizing the Performance of a Trebuchet Bronze Medal
Alexander Waldie King’s Christian Collegiate, Oakville	The Synthesis of Silver Nanoparticles and Their Effects on Plant Growth Bronze Medal

Intel International Science and Engineering Fair



Samna Aziz, Radhika Khanna, Anika Gupta, Emma Mogus, Jack Mogus

Three outstanding projects presented by high school students won all-expense paid trips to the Intel International Science & Engineering Fair (IISSEF) in Phoenix, Arizona from May 8 to 13, 2016. Samna Aziz, Radhika Khanna and Emma Mogus were selected to compete at IISSEF.

Also in attendance from BASEF were Jack Mogus, as a student observer, and Anika Gupta representing Youth Science Canada as Canada’s top Grade 8 student at the Broadcom Masters (Math, Applied Science, Technology and Engineering Rising Stars) Program.

International Competition Results at Intel International Science and Engineering Fair

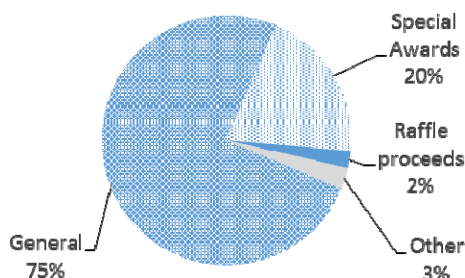
Samna Aziz Westmount Secondary School, Hamilton	Surface Modification of Polycaprolactone and Hydroxyapatite Endosseous Implant Fixture Coatings IISSEF Grand Award (Third) Material Sciences
Emma Mogus, White Oaks Secondary School, Oakville	TIC – Tongue Interface Communication: Assistive Technology for Severe Impairments IISSEF Grand Award (Third) Biomedical Engineering IISSEF Special Award – Synaptics, Inc. Award (Second)



Financial Highlights – Statement of Operations

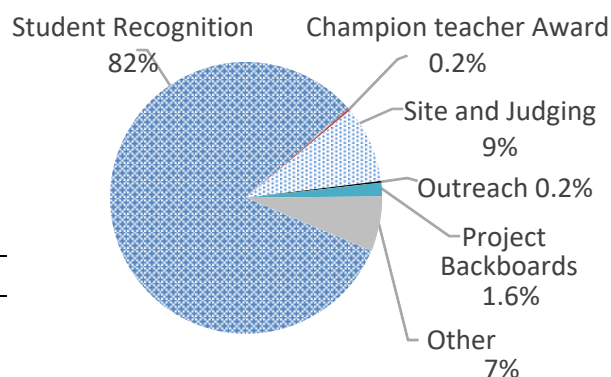
For the year ended August 31, 2016 (unaudited)

Revenue	2016	2015
General	\$ 102,880	\$ 70,980
Special awards	27,150	24,530
Raffle proceeds	3,160	1,185
Other	3,711	3,251
	<u>\$ 136,901</u>	<u>\$ 98,761</u>



Summary of Expenses

Student recognition	\$ 99,214	\$ 88,358
Champion teacher award	292	685
Site and judging	11,058	10,171
Outreach	250	250
Project backboards	1,935	-
Other	7,897	7,320
	<u>\$ 120,646</u>	<u>\$ 106,784</u>



Excess of Revenue Over Expenses (expenses over revenue)	<u>\$ 16,255</u>	<u>\$ (8,023)</u>
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Disbursements to Students

Bursaries	\$ 1,182
CWSF Trips	35,027
Special Awards	27,036
IIFEF Trips	17,191
Merit awards	12,300
Participation awards	3,772
Prize expenses	2,073
Photography	633
	<u>\$ 99,214</u>

Other Expenses

Ceremony & sponsor recognition	\$ 2,650
Administrative	1,979
Bank charges	1,009
Volunteers	982
Registration	658
Fundraising	565
Marketing & publicity	35
Raffle expenses	19
	<u>\$ 7,897</u>

Sponsorship

Title Sponsor				
 ArcelorMittal DOFASCO HAMILTON				
Diamond (\$10,000+)		Platinum (\$5,000+)		Gold (\$2,500+)
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Silver (\$1,000+)		Bronze (\$500+)		
Canadian Linen & Uniform Service Halton Catholic District School Board Halton District School Board Hamilton Chamber of Commerce Hamilton Economic Development Hamilton-Wentworth Catholic District School Board Hamilton-Wentworth District School Board Hillfield Strathallan College John Deere Canada ULC LiUNA Local 837 Ontario Power Generation TD Friends of the Environment		BattleGoat Studios D.E.N.M. Engineering Ltd Etratech GM BluePlan Engineering Hamilton Amateur Astronomers Hamilton Community Awareness & Emergency Response		Judy Marsales Real Estate International Union of Operating Engineers - Local 793 MMM Group Nikola Tesla Educational Corporation R V Anderson Associates TACC Construction
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Benefactors				
Banting & Best Level (\$1000+)	Bondar Level (\$500+)*	Polanyi Level (\$200+)	McGill Level (\$50+)	
Mr. Mike & Mrs. Sue McNally	Mr. Steve and Mrs. Cathy Hayman Mr. Peter & Mrs. Susan Olynyk	Mr. Dan and Mrs. Debbie Bowman Mr. Grant Buchan-Terrell Mr. Tom and Mrs. Roslyne Crawford Mr. John & Mrs. Eleanor O'Flynn Dr. Danny Soares	Dr. Baker Akad Mr. Jim Casey Ms. Jo-Anne Connery Ms. Linda Millar Dr. Nicola Simmons	Mr. Wayne Schaefer Dr. Odette Tunks Dr. Christine Yeung Mr. Norman Young Ms. Jodi Younger
* In addition to the donors listed, BASEF 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.

Join us next year for the 57th BASEF to be held March 30 – April 1, 2017 at Mohawk College.