BASEF 2019

59th Annual Bay Area Science & Engineering Fair
@Mohawk College
March 28 – April 2, 2019

Diamond Sponsors
Mohawk College
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The Hamilton Spectator
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Mohawk College
Proud Host of the Annual Bay Area Science and Engineering Fair

Welcome to the 2019 Bay Area Science and Engineering Fair.

Congratulations to all of the students who have worked hard to be part of this year's Bay Area Science and Engineering Fair. This is one of Canada's largest and longest running science and engineering fairs. Many students who've competed in this fair have gone on to win national and international competitions and are now making their mark in the world.

I also want to commend the sponsors, judges, volunteers, parents and teachers who make BASEF such a resounding success and showcase for remarkable young talent. Your support and mentorship encourages students to dream bigger, aim higher and exceed all expectations.

Mohawk is committed to providing students with an excellent education and a great college experience.

As a college with a reputation for academic excellence in health and technology, we are proud to once again host the Bay Area Science and Engineering Fair.

Congratulations again to all of the students participating in this year's fair. You have represented your schools well and you should be very proud of what you've accomplished.

Good luck!

Ron J. McKerlie
President,
Mohawk College
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Message from BASEF Co-Chairs</td>
<td>1</td>
</tr>
<tr>
<td>Organizing Committee</td>
<td>2</td>
</tr>
<tr>
<td>Sponsors and Benefactors</td>
<td>3</td>
</tr>
<tr>
<td>Endowment Fund</td>
<td>5</td>
</tr>
<tr>
<td>Schedule of Events</td>
<td>6</td>
</tr>
<tr>
<td>Emergency Procedures while at Mohawk College</td>
<td>7</td>
</tr>
<tr>
<td>Map of Mohawk</td>
<td>8</td>
</tr>
<tr>
<td>Parent Pages</td>
<td>9</td>
</tr>
<tr>
<td>BASEF Outreach and Bursary Programs</td>
<td>13</td>
</tr>
<tr>
<td>BASEF Champion Teacher</td>
<td>14</td>
</tr>
<tr>
<td>Volunteers</td>
<td>15</td>
</tr>
<tr>
<td>Merit Award Judges</td>
<td>16</td>
</tr>
<tr>
<td>BASEF Alumni Project</td>
<td>18</td>
</tr>
<tr>
<td>Special Award Judges</td>
<td>19</td>
</tr>
<tr>
<td>Exhibitor Index</td>
<td>25</td>
</tr>
<tr>
<td>Project Listings</td>
<td>32</td>
</tr>
<tr>
<td>Student Boundaries &amp; Floor Layout</td>
<td>37</td>
</tr>
<tr>
<td>Special Awards</td>
<td>57</td>
</tr>
<tr>
<td>Three Young Women &amp; the Science Fair that Changed their Lives</td>
<td>66</td>
</tr>
<tr>
<td>BASEF Inspiration Awards</td>
<td>68</td>
</tr>
<tr>
<td>Scholarships &amp; Internship</td>
<td>69</td>
</tr>
<tr>
<td>Merit Awards</td>
<td>72</td>
</tr>
<tr>
<td>Grand Prize &amp; Trip Awards</td>
<td>74</td>
</tr>
</tbody>
</table>

Cover image is the Spiral Aloe. See, https://commons.wikimedia.org/wiki/File:Spiral_Aloe_from_above.JPG
The curve overlaying the image is a Logarithmic Spiral, often found in nature. See https://en.wikipedia.org/wiki/Logarithmic_spiral for examples of natural logarithmic spirals.
A MESSAGE FROM THE 2019 BASEF CO-CHAIRS

Congratulations to all the participants competing at the 2019 Bay Area Science and Engineering Fair, presented by ArcelorMittal Dofasco, BASEF’s 59th year of operation. This is an opportunity for students to showcase their projects, ideas, dedication and tenacity and to discover themselves as promising scientists and engineers.

What does our motto “Big Ideas… Infinite Possibilities” mean to the students, and to the judges, parents, sponsors, and visitors to our fair? Since BASEF’s inception in the 1960’s, the scientific community has witnessed the moon landing and the discovery of the merger in gravitational waves and electromagnetic radiation; the cloning of Dolly the sheep and the first human face transplant; the invention of the global positioning system and the invention and production of the first all-electric car; the invention of barcode technology; and the first experimental evidence of the Big Bang theory … just to name a few. What discoveries will be made in the next 59 years that our students could be a part of?

We are grateful for the essential support from our many community sponsors and benefactors, and supporters of special student awards that are designed to promote additional interest and participation in the Fair.

ArcelorMittal Dofasco has returned for their thirteenth year as BASEF’s Presenting Sponsor. We are thankful for their generous funding and ongoing commitment to science, engineering, technology and mathematics. BASEF2019 presented by ArcelorMittal Dofasco would not be possible without this support.

Our two Diamond Level sponsors are also key to the success of this year’s Fair:
- Primary Fluid Systems Inc. has sponsored BASEF at the Diamond level for many years. Primary Fluid Systems Merit Award Certificates will be given to all Gold, Silver, and Bronze merit award winners.
- Mohawk College is again hosting BASEF in its state of the art David Braley Athletic and Recreation Centre. On behalf of the Organizing Committee, we extend a special thank you to Mohawk College and its staff and students, who are very generous with their time, resources and enthusiastic support.

Together with over 50 other sponsors and benefactors, and over 50 Special Awards donors, our premier sponsors make it possible for BASEF’s students to showcase their innovations and discoveries and inspire young people to change the world through science, technology, engineering and mathematics.

This year the total value of merit awards, special awards, scholarships and trip awards is expected to top $300,000.

BASEF is a volunteer-driven registered charity. We acknowledge with thanks the huge efforts of this year’s Organizing Committee members who have dedicated countless hours toward making BASEF2019 a success. Our thanks also to the over 300 volunteer Merit and Special Awards Judges and to the more than 100 other volunteers who help run registration, safety, and other fair activities.

Be sure to attend the BASEF awards ceremony on Tuesday, April 2nd 7:00 pm in the McIntyre Performing Arts Centre at Mohawk College to celebrate our students’ successes.

We hope this year’s student exhibitors meet new friends, enjoy their experience, and capture the science fair passion that leads to new research and the discoveries of tomorrow. We congratulate the participants on a job well done and wish them the best of luck in their future endeavours.

Dan Bowman and Ingrid Munson/Scully
BASEF ORGANIZING COMMITTEE

MOHAWK COLLEGE, 2019 HOST
President, Ron McKerlie
V.P. Academic, Paul Armstrong

CO-CHAIRS
Dan Bowman and Ingrid Munson/Scully

FINANCE
Treasurer: Eleanor O’Flynn, C.P.A., C.A.
Susan Olynyk

REGISTRAR
George Geczy (Chair), Marc Trotta, Maria Trotta

JUDGE IN CHIEF
Donna Stack-Durward,
Assistants: George Geczy, Neil Manmohan

SCIENTIFIC REVIEW
Donna Stack-Durward (Judge in Chief), Dan
Bowman (Co-Chair), George Geczy (Co-Chair),
Dana Bee (Co-Chair), Neil Manmohan (Co-Chair),
David Reed (Co-Chair), Debbie Ciotti-Bowman RN,
Dr. Robert Brown, Allison Boyd, Marc Trotta

SPECIAL AWARDS COORDINATION
Roslynne Crawford (Chair), Jim Casey, Eleanor
O’Flynn

SAFETY
Neil Manmohan

CANADA-WIDE & INTERNATIONAL CHAPERONES
CWSF: Dan Bowman (Lead), George Geczy,
Ingrid Munson/Scully, Donna Stack-Durward
IISEF: Dana Bee (Lead), David Reed

INFORMATION SYSTEMS
Gerard Chiasson, George Geczy

BASEF BURSARY PROGRAM
Linda Hazelden (Chair), Dan Bowman,
George Geczy, Ingrid Munson/Scully, Eleanor
O’Flynn

STUDENT ADVISORS
Arielle Ainabe, Karim Faltas, Anika Gupta, Anne
Jing

FUNDRAISING
Sue Olynyk (Chair), Mike McNally, Renato De Tina

STUDENT ACTIVITIES
Kevin Hunt (Chair), Daniel Hoeksema

PHOTOGRAPHY & GRAPHICS
Wayne Bowdish

MARKETING AND PUBLICITY
Roslynne Crawford (Chair), Christopher Ainabe,
Mark Mindorff, Meg Miller, Wayne Bowdish

MOHAWK COLLEGE LIAISON
Jamie Bennett

MOHAWK STUDENT ASSOCIATION LIAISON
Jessica Martin

DAVID BRALEY ATHLETIC CENTRE LIAISON
Kat Clewley

SPONSOR REPRESENTATIVE
Sandy Walker

FACILITIES
David Reed, Dana Bee

CHAMPIONS OF BASEF
Daxon Flynn, Linda Hazelden, Ola Lunyk Child,
Ingrid Munson/Scully

OUTREACH
Mark Mindorff (Chair), Roslynne Crawford, George
Geczy, Linda Hazelden, Michelle Lafontaine

VOLUNTEER RECRUITMENT AND COORDINATION
Dana Bee, Michelle Lafontaine, Meg Miller

OFFICIAL FAIR PROGRAM
Katie Cummings (Chair), Roslynne Crawford,
Eleanor O’Flynn, Sue Olynyk

FOOD PLANNING
Dan Prowse

ALUMNI PROGRAM
Denise Brennan-Rieder

DISTRICT SCHOOL BOARD ADVISORS
BHNCDSB: Jasmine Vorkapic
GEDSB: Valerie Slawich
HCDSB: Rachel Muvrin
HDSB: Ingrid Munson/Scully
HWCDSB: Judith Eaton
HWDSB: Sandra Chow
Six Nations (INAC): Alex Randall

MEMBERS AT LARGE
Varsha Jayasankar, Amanda Kako, Andrea
Stevenson, Lu Wang
GENERAL FUNDING SPONSORS – 2019

PRESENTING $25,000 +
ArcelorMittal Dofasco

DIAMOND $10,000 +
Mohawk College
Primary Fluid Systems

PLATINUM $5,000 +
HAND Association of Sewer, Watermain and Road Contractors, operating as the Hamilton & District Heavy Construction Ass’n
Imperial Oil Nanticoke Refinery
Masters Insurance
McMaster University
The Hamilton Spectator

GOLD $2,500 +
Alectra Utilities
Bay Area Health Trust
Bennett Mechanical Installations
Interprovincial Corrosion Control Co.
Lifetouch
McMaster Innovation Park
Taylor Leibow Accountants & Advisors

SILVER $1,000+
Appleby College
Canadian Linen & Uniform Service
City of Hamilton Economic Development Dept.
Halton District School Board
Hamilton-Wentworth District School Board
Hamilton-Wentworth Catholic DSB
Hillfield Strathallan College
King- KPM Industries
Nikola Tesla Educational Corporation
NSERC
Ontario Power Generation
Posner Metals

BRONZE $500 +
AT McLaren
D.E.N.M. Engineering
Halton Catholic District School Board
Hamilton Amateur Astronomers
Hamilton Community Awareness and Emergency Response
Hamilton Chamber of Commerce
Hamilton Police Senior Officers Association
Judy Marsales Real Estate
Lanhack Consultants
Optimist Club of Stoney Creek
Rotary Club of Waterdown
Society of Tribologists & Lubrication Engineers
Viziya

FRIENDS $250+
McMaster University Department of Materials Science and Engineering
Conservation Halton
Electrical Construction Association of Hamilton
Hamilton Police Retirees Association
NewAE Technology
Talkit.ca

Congratulations to all the Student Exhibitors at BASEF
BENEFACTORS – 2019

Through personal donations, individuals can support BASEF. BASEF Benefactor Levels celebrate famous Canadian scientists and engineers.

Banting and Best Benefactors ($1,000+)
Sir Frederick Banting and Dr. Charles Best were the co-discoverers of insulin used in the treatment of diabetes. In 1923, Dr. Banting was awarded the Nobel Prize in Medicine.

- Mike & Sue McNally
- David Walker
- Michael Taylor

Bondar Benefactors ($500+)
Dr. Roberta Bondar was the first Canadian woman to have flown in space as an international astronaut on board the Space Shuttle Discovery. Dr. Bondar is a trained physician, scientist, astronaut and photographer.

- Cathy & Steve Hayman
- Susan & Peter Olynyk

Polanyi Benefactors ($200+)
John Charles Polanyi won the 1986 Nobel Prize for chemistry for using chemiluminescence of molecules to explain energy relationships in chemical reactions.

- Helen Barton
- Dan & Debbie Bowman
- Kathy & Steven Brent
- Roslynne & Tom Crawford
- Renato & Enza DeTina
- Eleanor & John O'Flynn
- Dr. Nicola Simmons

McGill Benefactors ($50+)
Elsie McGill was Canada’s first woman graduate in electrical engineering. She also held a master’s degree in aeronautical engineering. She is considered the first woman to be a designer of airplanes. During World War II her primary responsibility was the production of the Hawker Hurricane fighter aircraft.

- Jim Casey
- Linda Millar
- Jo-Anne Connery
- Brandi Kehoe
- Jason Legg

In addition, BASEF has received donations from a number of individuals who wish to remain anonymous.
BASEF’S ENDOWMENT FUND

THE BAY AREA SCIENCE AND ENGINEERING FAIR FUND

In June 2012, BASEF established an endowment fund with the Hamilton Community Foundation (HCF) under their Agency Endowment Program. Contributions are invested by HCF and the income earned, net of management fees, is made available for BASEF to support BASEF’s mission and goals. As at August 31, 2018, the endowment fund had grown to just over $38,000. In October 2018, BASEF received a distribution from the fund in the amount of $1,434.

Please consider the BASEF Endowment Fund as part of your charitable giving. You may send a cheque designated for the BASEF Endowment Fund to BASEF, or send your donation directly to the HCF.
## BASEF2019 SCHEDULE OF EVENTS

**All at Mohawk College Fennell Campus**

**Gym** - David Braley Athletic Centre (DBARC)

**Theatre** – McIntyre Performing Arts Centre

### Thursday, March 28 – On-Site Project Setup/Safety Check

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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<tr>
<td>4:00 – 8:00 pm</td>
<td>Registration, set-up and safety checks</td>
<td>Gym</td>
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### Friday, March 29 - Student Activity Morning & Judging of Projects

<table>
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<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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</table>
| 8:30 – 9:30 am | BASEF Student Drop Off - Proceed to Main Auditorium  
**Notes: Theatre Doors Open at 8:30 am, some schools may be arriving up to 9:30 am based on busing schedules** | Theatre  |
| 9:00 – 9:10 am | Kevin Hunt, BASEF Activity Day Coordinator  
Welcome from Mohawk College -President Ron McKerlie | Theatre  |
| 9:10 – 9:30 am | Bats and Conservation  
BRIGHT Eco Team – Kathy Zadvorny | Theatre  |
| 9:30 – 9:45 am | Eco Pen, The Forge at McMaster Innovation Park  
Ali Awais Amin and Rucha Kolte – ecopencanada.com | Theatre  |
| 9:45 – 10:25 am | Return to Astronomy, Hamilton Amateur Astronomers  
John Gauvreau – amateurastronomy.org | Theatre  |
| 10:25 – 11:10 am | Tesla and the DeCew Power Station  
Nikola Tesla Educational Corporation  
Dr.Colin Campbell, Vic Djurdjevic | Theatre  |
| 11:10 – Noon | McMaster University Chemistry Show  
Professor Randy Dumont, Paul Harrison, Gillian Goward | Theatre  |
| Noon – 1:00 pm | BASEF students to bring their own bagged lunches. Students are not permitted to go elsewhere for lunch and must remain at their projects in the gym. There will be **no food or drink** in the theatre. | Gym      |
| 1:00 – 4:00 pm | Judging interviews for BASEF students (BASEF participants must remain at their projects during judging) | Gym      |

### Saturday, March 30 - Public Viewing

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<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
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| 9:00 am – Noon | Public Viewing  
Projects are to remain in place until end of Public Viewing | Gym      |
| Noon – 12:15 pm | Project take-down. All projects **must** be removed by 12:15pm | Gym      |

### Tuesday, April 2 - Awards Ceremony

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
<th>Location</th>
</tr>
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<tbody>
<tr>
<td>5:15 – 6:30 pm</td>
<td>Champions of BASEF Dinner</td>
<td>By Invitation</td>
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<tr>
<td>6:00 pm</td>
<td>Awards Ceremony seating opens</td>
<td>Theatre</td>
</tr>
<tr>
<td>7:00 - 9:30 pm</td>
<td>Awards Ceremony</td>
<td>Theatre</td>
</tr>
<tr>
<td>9:30 - 10:00 pm</td>
<td>Meeting with chaperones for trip winners and their parents</td>
<td>Theatre</td>
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EMERGENCY PROCEDURES WHILE AT MOHAWK COLLEGE

**Emergency Situations:**
- Main Security Desk: Dial 55 on College phones or press the Emergency button on Bell pay phones, or press the button on the intercom.
- Police/Fire/Ambulance: Dial 9-911 on College phone or 911 on Bell pay phones.

**Non-Emergency Situations:**
- Main Security Desk: Dial 2003 on College phones.
- Dial 905-575-2003 or 905-575-2316 on other phones.

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**Emergency Evacuation**  
(Reference Procedure ERP 805)

**Upon Discovery of Fire:**
- Leave fire area immediately and close doors behind you.
- Pull the nearest fire alarm.
- Evacuate the building via the nearest exit.
- Call Security at 55, or call 9-911 on college phones or 911 on Bell pay phones.

**Upon Activation of the Fire Alarm:**
- Go to the nearest exit and leave the building.
- Close doors behind you.

**Note:**
- Do not use elevators or chair lifts.
- Use an alternative exit if you encounter smoke.
- If a person with a disability cannot be evacuated, assist them to a fire rated room such as an office or classroom that is away from smoke or fire, as close as possible to an exit. Preference should be given to rooms with two exits and a telephone or intercom.
- Notify Security and/or the Fire Department of their specific location.
- Do not re-enter the building until authorized by the Fire Department, Security, Staff or Fire Wardens.

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**Emergency Lockdown**  
(Reference Procedure ERP 809)

**Threat Inside the Building:**

Upon Hearing the Voice Message Advising Lockdown:
- Exit all Common and Open Areas (including Library and Cafeteria):
  - Disperse... do not congregate in open areas.
  - Exit the building or go to a room or area where you feel safe to enter.
- If Exit is Not Possible:
  - Enter or stay in a room or area where you feel safe.
  - Close and secure doors if possible.
  - Turn out lights.
  - Cover windows and/or stay away from windows.
  - Silence cell phones/use text messaging only.
  - Stay alert, quiet and out of sight.
  - Disregard fire alarm signal unless in immediate danger.
  - Do Not Exit Until “All Clear” Signal is heard.

**End of Lockdown:**
- A recorded announcement of an “all clear” signal will be given to indicate the end of lockdown. Emergency Officials or College Security will conduct a door-to-door confirmation of this announcement.

**Threat Outside the Building:**

Hold and Secure:
- The threat is outside and everyone remains inside the building.
- Notification will be communicated by a voice message.

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For more detailed information, please visit https://www.mohawkcollege.ca/about-mohawk/security-and-emergency-management/emergency-procedures
Thursday March 28
Project setup in the Gym
4:00 pm to 8:00 pm
Student drop off at lot P7
Enter Gym via Fair Entrance
(1 hour complimentary parking between 4:00pm and 9:00pm in lot P7 only)

Friday March 29
Activity morning in the Theatre
Students arrive 8:30 am to 9:00 am
Bus pickup & dropoff at Main Entrance
Project judging: 1:00pm - 4:00pm in Gym
Parents: Student pick up complimentary parking 3:30pm to 4:30pm in lot P7 only

Saturday March 30
Public viewing in the Gym
9:00 am to 12:00 pm
Complimentary parking on all campus lots

Tuesday April 2
Awards Ceremony in the Theatre
7:00 pm to 9:30 pm
Doors open at 6:00 pm
Parents: You must pay for parking at the Pay To Park $ machines.
THE PARENT PAGES (OR HOW TO SURVIVE SCIENCE FAIR!)

*Congratulations on your decision to support your child's participation in BASEF!*

All BASEF student participants are rewarded with an enriching experience, participating both in Activity Morning and Judging. Along with a certificate of participation, students will come away with the experience of meeting new people - both judges and other top students.

BASEF awards cash prizes, awards and scholarships. The top winners have the chance to win an expense paid trip to either the national (CWSF) or international science fair (IISEF).

**Location of Events:** Mohawk College

Science Fair projects will be located in the David Braley Athletic and Recreation Centre (DBARC) gym.

Activity Morning and the BASEF Awards Ceremony will be in the McIntyre Performing Arts Centre.

Any changes or revisions to the plan will be posted on the BASEF website and will be announced at the fair.

See the campus map, included on the previous page of this program.

**Miscellaneous Information**

**Dress code:** We suggest neat and casual, with the emphasis on neat.

**Food Allergies and Medical Issues:** We ask that you remind the BASEF volunteers at the Registration Desk and throughout the fair of any food allergies or special medical issues that pertain to your children. BASEF should be considered a public facility regarding food allergies.
THE PARENT PAGES (OR HOW TO SURVIVE SCIENCE FAIR!) (Continued)

Day by Day - Parent Responsibilities

**Day 1 – Registration and Set-up, Thursday, March 28, 2019 @ 4:00 p.m. - 8:00 p.m.**

Project set up for the fair occurs **ONLY** on Thursday, March 28, 2019 from 4:00 – 8:00 p.m. at Mohawk College DBARC Athletic Centre. Parking in Lot P7 is complimentary for an hour. Park, then carry your child’s project into the Gym. Projects not set up by 8:00 pm will be deemed as "no shows" and deleted from the judging process. Your child will visit a registration desk and find out their assigned display area in the gym. They will have their photograph taken for an ID badge and receive their goody bag. After the project is set up, one of our many safety inspectors will ensure that the project meets all safety guidelines. **Students cannot leave until their project has passed their safety check.** The registration process and project set-up usually take less than an hour.

**Day 2 - Student Activity Morning, Friday, March 29, 2019 @ 8:30 a.m. – 12:00 noon**

Students will be welcomed by volunteers at the McIntyre Performing Arts Centre beginning at 8:30 am. The Activity Morning event starts at 9:00 am.

**Day 2 - Lunch - Friday, March 29, 2019 @ 12:00 noon - 12:45 p.m.**

BASEF student exhibitors will be escorted from the McIntyre Theatre to the DBARC gym. **Students must bring their own lunch** and eat in the gym. There are no cafeteria facilities available to the students. Students will **not** be allowed to buy food from any of the College vendors.

**Day 2 – Afternoon Judging, Friday, March 29, 2019 @ 12:45 p.m. – 4:00 p.m.**

Students are required to be at their projects for judging between 1:00 p.m. – 4:00 p.m. **Teachers and parents are not permitted on the gym floor after 12:45 p.m.** in preparation for judging, which starts promptly at 1:00 pm. Typically, each student will be interviewed by at least four judges. Regular parking rates apply during the day.

When picking students up after Judging at 4 p.m., parents have **1 hour complimentary parking in Lot P7.** Other parking lots will have parking enforcement present. Do not wait along the roadway at the DBARC gym entrance; this is a fire route.

**Day 2- Evening, after 4 p.m. Friday, March 29, 2019**

The Fair is NOT open to students or the public in the evening on Friday, March 29.

**Day 3 - Public Viewing, Saturday, March 30, 2019**

There is complimentary parking in Lots P5, P6, P7, and P8.

We ask that your children be at their projects in the gym for Public Viewing from 9:00 a.m. - 12:00 noon. At noon the students will be given 15 minutes to remove their projects. **Students may not remove their projects until after the Public Viewing.**

We strongly recommend that you attend the public viewing with your child. It will give you an opportunity to view all of the great projects on display, and to see your own child doing presentations for visitors.

Students are asked to pick up their project between 12 noon and 12:15 p.m. After this time, projects will be removed by the volunteer staff.
The Awards Ceremony – Tuesday, April 2, 2019 7:00 p.m. – 9:30 p.m.

Evening parking for the Awards Ceremony is a flat rate of $6 from 5:00 p.m. to 3 a.m.

The award ceremony is the culmination of the Fair and where the hard work of the students is recognized. The awards ceremony will begin at 7:00 p.m. sharp. It is recommended to come early, as seating is limited. Doors will open to the theatre at 6:00 p.m. Students will be asked to sit near the front of the theater.

Note: Our trip award winners and a parent are required to attend an information meeting immediately after the Awards Ceremony (approximately one hour).

There! Wasn’t that easy? Congratulations to you and your young scientists and engineers! Be sure to visit the BASEF website (basef.ca) throughout the year. You’ll find project pictures and abstracts from last year’s fair, resource materials and important information about the next fair. Also follow the BASEF winners at basef.ca as they compete at the national and international science fairs. Their progress can be found in “Team BASEF”, with links to Facebook and Twitter.
BASEF thanks its 2019 sponsors

ArcelorMittal
DOFASCO | HAMILTON

Primary Fluid Systems Inc.
mohawk
FUTURE READY

$10,000
$5,000
$2,500
$1,000
$500

$10,000
$5,000
$2,500
$1,000
$500

Gold
Platinum
Diamond
Title

Silver

Bronze

Friends of the Fair

Dept. of Materials Science & Engineering, McMaster University
The BASEF Bursary Program

The BASEF Bursary Program was once again offered this year to assist students in grades 7-12 who were in need of financial assistance to complete a science fair project. Based on teacher recommendations, up to 40 students in the BASEF catchment area were eligible for a $30.00 bursary. The projects could be a classroom activity or be entered into BASEF; we asked only that the students undertake and complete a science project to the satisfaction of their teachers. The goal of the program is to make it easier for students in need to participate in project-based science.

This year the program awarded 35 bursaries to students nominated by over twenty-one teachers, representing five area school boards. Eighteen of the teachers were first-time participants.

BASEF Outreach: Resources Available to Students, Teachers, and Parents

The Bay Area Science and Engineering Fair offers students the opportunity to explore problems that matter to them using a longer term project-based approach. BASEF offers a wide range of resources to help students conduct their research; from help getting started, to technical considerations such as how to design a project display, or finding answers to ethical and safety questions. We also offer help to parents and teachers working in support of young researchers.

The main portal for this help is our website. If you only have time to explore one resource, a definitive guide called “Science Success” is a good place to start. It is available at www.basef.ca/outreach. “Science Success” consists of 4 parts: a guide for teachers, a student workbook, and two slide presentations useful for groups of students, teachers or parents. The teacher guide and student workbook are available in both English and French.

The page www.basef.ca/resources contains a large number of links to a range of resources, with detailed descriptions. To see what a typical BASEF project looks like, visit our project archives at www.basef.ca/pastresults

The following initiatives, first introduced in 2017, are still available for our students

- The TECHSEED program offered a free computer electronics kit to qualifying students who want to explore the use of an Arduino computer in a project. Mentors are available to assist students with the kits and answer questions.
- A PATENT information booklet and workbook was developed in collaboration with Gowling WLG, a long-time special awards sponsor. This booklet transforms the legalese into understandable information for students whose project might benefit from patent protection or intellectual property laws. These are provided to our trip award winners and all high school projects. These booklets are also available on our website.

Students, teachers and parents can access help directly from BASEF by emailing us at outreach@basef.ca. Experienced science fair veterans, professional scientists, engineers and educators are available to provide chalk-talks or workshops. This is particularly valuable for students attending schools not supportive of science fairs in the BASEF catchment area. Mentors can be arranged on request by emailing outreach@basef.ca. The BASEF Outreach program can also help you assemble a team of judges for your school fair, and provide help on how to organize the judging and evaluate the results.

Teacher Activity Day is an all-day seminar for teachers covering everything you wanted to know about science fair projects, including the application process for students entering BASEF, safety, judging, and how to avoid the most common pitfalls encountered during registration. This course can be booked by emailing outreach@basef.ca

Project-based science, as promoted by science fairs, is one of the best ways to engage young people in a focused initiative where they can explore their own interests, exercise their curiosity, and experience the thrill of discovery. BASEF provides a friendly competition to encourage this in-depth exploration of new ideas. We at BASEF Outreach are here to help you get started with your project. Need help? Email outreach@basef.ca or visit our website at www.basef.ca.

The BASEF Bursary Program

The BASEF Bursary Program was once again offered this year to assist students in grades 7-12 who were in need of financial assistance to complete a science fair project. Based on teacher recommendations, up to 40 students in the BASEF catchment area were eligible for a $30.00 bursary. The projects could be a classroom activity or be entered into BASEF; we asked only that the students undertake and complete a science project to the satisfaction of their teachers. The goal of the program is to make it easier for students in need to participate in project-based science.

This year the program awarded 35 bursaries to students nominated by over twenty-one teachers, representing five area school boards. Eighteen of the teachers were first-time participants.
The Organizing Committee of the Bay Area Science and Engineering Fair congratulates:

Susan Bouwer
North Park Collegiate and Vocational School
Grand Erie District School Board

CONGRATULATIONS TO THE 2019 BASEF CHAMPION TEACHER!

The nominators comments:

"Many students want to participate in BASEF because of their genuine desire to learn and participate in practical applications of their knowledge, but also because of how accepting and interesting the community of science is at North Park Collegiate, a community which Ms. Bouwer has played a large part in creating"

"Ms. Bouwer made science fun and interesting, memorable, challenging and rewarding yet doable, increasing confidence in the sciences for many students"

"She has enriched my high school science experience and given me support to learn skills I will carry throughout my career and life."

"Mrs. Bouwer is an absolute champion of BASEF. Each year she takes on multiple projects as a teacher advisor and dedicates her time, money and energy into helping the students achieve and reach their own potential."

The Champion Teacher Recognition Award for 2019 includes induction into the BASEF Champion Teacher Hall of Fame, a trophy and $250 for use in the classroom of each winning teacher. A panel of BASEF Organizing Committee members selects the Champion Teacher Recognition Award winners from among those nominated online by their peers, parents and students.

This award recognizes a science and technology teacher who displays a remarkable ability to empower and excite student interest in science and who actively promotes the Bay Area Science and Engineering Fair.
THANKS TO BASEF2019 VOLUNTEERS!

Volunteers
Adina Fatima
Anastasia Drakos
Ann Byrne
Biem-Aime Wadelyne
Christopher Jobity
Corinne Ophof
Drew Biglow
Dylan
Ed Gillis
Mary Helen Gillis
Hanchen Xiao
Jackie Cote
Jason Saltarelli
Jessica Dekker
Jo-Anne Teoh
Kareem Elmokattaf
Katie Altoft
Kristine Yuan
Lu Wang
Meg Miller
Michele Joch
Michelia Alba
Mitchell McCrory
Noor Fazal Karim
Payal Thakkar
Razan Mohamed
Reed Graves & Flynn
Solang Thomas Dowden
Sylvia Galli
Tom Crawford
Trevor Hayhurst
Vijaya Visweswarappa
Waliz Tafhim
Xin Guan
Yang Bo (Emma) Zhang

Photo Team
Alan Bates
Bernard Buchanan
Glen Lawson
Ryan Bowdish
John Novak

Registration Team
Marc Trotta
Maria Trotta
Katie Brent

Congratulations to all Science Fair participants
In the 59th Annual
Bay Area Science & Engineering Fair

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Hamilton’s Economic Development Office is the central point of contact for business assistance. Its services are geared to serve new start-up companies, corporate relocations, and the expansion and retention of existing business.
MERIT AWARD JUDGES

Alta Technology Ltd
   Nigel Birch

Amazon
   Diana Kurbanova

ArcelorMittal Dofasco
   Colin Grey, Jason Legg, David Starr, Isadora van Riemsdijk, Jane Wood, Daniel Hoeksema, Shayne Yeaman

AVAR Environmental Inc.
   Justin Lewis

Avenue Physiotherapy
   Adrienne Hol

Ballagh & Edward LLP
   Valerie Edward

Brantford General Hospital
   Preet Kaur

Brock University
   Laura Harris, Katherine McLean, Alicia Savelli, Amanda Segal

Brock University Teacher's Education
   Melissa Palermo

Canadian Cancer Research Alliance
   Louisa Salemi

CanmetMATERIALS
   Yimin Zeng, Kumar Sadayappan

Century 21 People's Choice Realty Inc.
   Lata Bhardwaj

City of Hamilton
   Daniel Lawlor, Erick S. Merlos

City of Hamilton - Economic Development
   Carolynn Reid

City of Hamilton and Mohawk College
   Bill Docherty C.Tech. PMP. MsPM.

City of Hamilton - Public Health Services
   Steven Walsh

City of Toronto
   Aamir Shaikh

Compass Information Center - McMaster University
   Kanika Saini

Conestoga College
   Nicole Howe

Dana Canada Inc
   Andrea Aylward

Darts
   Mark Mindorff

Degroote Institute for Pain Research and Care
   Rachel Couban

EngOL inc.
   Gino Niro

EnviroDiamond Technologies Inc.
   Daren Swanson

Every1Games Professional Services Inc.
   Sarah Saucier

FCA Canada - Etobicoke Casting Plant
   David Wood

Fisheries and Oceans Canada
   Margot Smith

Fort Erie School of Music
   Janet Schaefer

Government of Ontario
   Val Kim

Green Venture
   Erinn Todd

Halton Catholic District School Board
   Matt Kovacs, Michaela Yan, Stephanie Thompson

Hamilton General Hospital
   Pamela Pagunsan

Hamilton Health Sciences
   Jill Boreyko, Tracy Carrier, Linda Mattina Salvo

IT Force
   Scott Putman
MERIT AWARD JUDGES (Continued)

Humber College
Luana Sciullo

HWDSB
Dr Shushmita Gupta

IT Force
Adam Freeman

Kinectrics Inc.
Boguslaw Bochenski

McMaster Immunology Research Centre
Hannah Stacey

McMaster University

MetroMinc
Divya Khattar, Scott McLaren, Richard Wolfsgruber

Mohawk College
Stephen Adams, Gabriela Covaci, Brian Miraji, Tanya Spence, Brian Stefanchuk, Ahmad Obeid

National Steel Car
James Forbes, Tom Nagy

P2Insight Inc.
Mike Popovic

Peto MacCallum Ltd. Consulting Engineers
Sean Denham

Petro-Canada
Nikola Lukenda

Purplebricks
Glenn Sheils

Quadra
Monika Malig

Region of Peel
Steve Lonz

ReproLabels
Rebecca Smith

Retired
Jacqueline Roberts, Jim Garrett, Eric Harrison, Peter Jennings, Jana Jilek, Ramani Leanage, Paul Martin, Mike McNally, Ray Rikic, Peter Stubbs, Paul Wehrle, Norman Young, Warren Johnson, Donald Chung, Peter Abi-Rashed, Tony Briatico, Richard Hamilton, Fraser Forrest, Lu Wang, Lynda Bowen, Dave Bowen, Helen Howard-Lock Preston, Neil Beasley, Graham Stratford, Mike Sheehy, Ross Johnson, Renato De Tina, Shane Morin, Terry Hill, Beverly Shepard, Anthony Davis, Stuart Critchley, Ben Simmons, Matt Zambri

Rexall
Yugam Desai

Rockwell Automation
Jeff Tod

Self-Employed
Helen Graham, Liz Pietrzak, Harold Anderson, Ben Shepard, Denise Brennan-Rieder

Sheridan College
Marcus Freeman, Sohail Mahmood

Sovereign Asset Management
Charles Dyer

St Joseph’s Healthcare
Victoria Flaxman, Bruce Young, Adam Prieur

St. Elizabeth Seton – HCDSB
Matthew Stodolak
BASEF Alumni Project

Since 1960, the Bay Area Science and Engineering Fair (BASEF)* has been one of the largest and most successful regional science fairs in Canada. More than 20,000 students have participated over the years. The mission of the fair is to encourage and support young people in carrying out scientific research and presenting their findings to others. Many successful careers have been launched from science fairs and from BASEF in particular.

As we approach our 60th anniversary in 2020, we are in the process of launching a BASEF Alumni Network. The purpose of this initiative is to enable alumni to share their stories, to connect with each other and to support our current fair participants in a variety of ways.

A network of alumni has no precedent in regional science fairs and we feel such an initiative will add to the prestige of our already outstanding science fair. If you are interested in being part of the BASEF Alumni Network, please email us at alumni@basef.ca. We look forward to hearing from you!

*Also known previously as the Hamilton Science Fair, Hamilton District Science Fair, Hamilton & District Science & Engineering Fair and the Hamilton Wentworth Halton Science & Engineering Fair.
SPECIAL AWARD JUDGES

ArcelorMittal Dofasco Awards
Shannon Clark, Adam Aglipay, Sidique Baksh, Alex Barsan, Alex Bernal, Kristen Bloom, Rachel Choon, Josh Freer, Andrew Kraus, Cameron Mitchell, Corinne Mullen, Ana Opulencia, Dan Papalazarou, Sagarika Paul, Phillip Principato, Hayley Scott, Jonah Szajman, Chantal Ullyett

Artistically Inspired Display Awards
Cathy Hamilton, Cathy Hayman

Association for Iron & Steel Technology Northern Chapter Awards
Shannon Clark

Canadian Institute of Mining, Metallurgy and Petroleum (Hamilton Branch) Awards
Shannon Clark

Canadian Nuclear Society (Golden Horseshoe Branch) Awards
Elizabeth McConnachie, Garik Patterson

Chemical Institute of Canada- Hamilton Section Awards
Don Barclay, Tom Sutton, Dragan Vuckovic

Dillon Consulting Awards
Chris Gibbons, Trevor Goulet

Dr. Colin J.L. Lock Memorial Chemistry Award
Dr. Nicola Simmons, Gord Simmons

Dr. Nicola Simmons Award in Cognition Studies
Dr. Nicola Simmons, Gord Simmons

Doris Casey and Gwen Nicolls Disability Solutions Awards
Jim Casey, Al Nicolls

Electrical Construction Association of Hamilton Award
Joe Kurpe

Environmental Inspiration Award
Isabella O’Brien

Gowling WLG Innovation Awards
Alex Ross

Hamilton Academy of Dentistry Awards
Frank Stechey

Hamilton Association da Vinci Award
Tony Petric, Ken Chin, Jim Garrett, Ludvic Previc, Isobel Bicket

Hamilton Wentworth Occasional Teacher Awards
Barry Naidoo, Nguyen Trang
SPECIAL AWARD JUDGES (CONTINUED)

Hillfield Strathallan College Awards of Excellence
Dr. Lara De Lazarri, Marc Edgar

Hillfield Strathallan College Entrance Scholarship Award
Dr. Lara De Lazarri, Marc Edgar

Indigenous Peoples of Canada Scientific Study Awards
David Reed

International Science & Engineering Affiliated Fair Awards
Tyler Collins, Cathy Hayman, Varsha Jayasankar, Radhika Khanna, Adree Khondker

James A. Winger Award, sponsored by the Hamilton Amateur Astronomers
Rowan Dee, Gary Sutton, Bernie Venasse

John W. Howard Materials Research Award
Dr. Nicola Simmons, Gord Simmons

Laurentian Chapter of SETAC Award
Oana Birceanu, Gerald Tetreault

Mahut-Brent Award for Women in Science and Engineering
Katie Brent

McMaster University Awards
  Department of Chemistry and Chemical Biology Award
  Gillian Goward
  Department of Chemical Engineering & Chemical Engineering Club
  Patrick Morkus
  Department of Materials Science and Engineering Awards
  Danielle De Rango, Beth McNally
  Faculty of Engineering Entrance Awards
  Alaine Coschi
  LEAP Academy Female Award of Innovation
  Andrew Berriault, Sandun Thilak Aarachci
  School of Geography and Earth Sciences
  Jeremy Gabriel, Rebecca Moumblow, Nick Riddick, Maureen Padden
  Venture Award of Innovation
  Andrew Berriault, Sandun Thilak Aarachci
  Women in Engineering Entrance Awards
  Alaine Coschi

Mechanical Contractors Association of Hamilton Award
Dave Crawford

Michael G. DeGroote Institute for Infectious Disease Research Internship Award
Luke Yaeger, Tori Marko
Memories of Recent Fairs
SPECIAL AWARD JUDGES (CONTINUED)

Mohawk College Awards

Building & Construction Sciences Awards
Nathaniel Adie, Dan Havercroft

Computer Science & Information Technology Excellence Award
Sharon Scollard, Joseph Varasso

Electrical Engineering Technology Awards
Richard Ma, Brian Stefanchuk

Mathematics Awards
Frosina Stojanovska-Pocuca, Kathryn Vrhovnik

Nelson Steel Awards
Shannon Clark

Nikola Tesla Innovation Awards
Vic Dijurdevic, Dr. Colin Campbell, Branko Lukic, Mike Popovic, Alex Stojanovic, Samuel Symbaluk

Oakvillegreen Conservation Association Award for the Environment
Karen Brock

Primary Fluid Systems Awards
Sandy Walker

Procor Engineering Awards
Edmund Lee

Professional Engineers of Ontario-Hamilton/Burlington Chapter Awards
Michelle Chin, Gary Closson, David Dean, Erika Kadar, Jim Sweetman

Professional Engineers Ontario - Oakville Chapter Awards
Fred Datoo, Hazel Hezhi Fan, Viet Le-The

The Research Institute at St. Joe’s Hamilton, Health Research Awards
Laura Garrick, Dr. Gail Martin, Adam Weerdenburg

Royal Botanical Gardens Award
Karin Davidson-Taylor

Society of Tribologists & Lubrication Engineers - Hamilton Section Awards
Richard Schrama

Water Environment Association of Ontario Award
Dean Iamarino
GOOD LUCK PARTICIPANTS!

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<th>Exhibit Number</th>
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<td>Q18</td>
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<td>Q14</td>
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<td>K19</td>
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<td>M11</td>
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<td>P10</td>
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### EXHIBITOR INDEX
(CONTINUED)

<table>
<thead>
<tr>
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<th>Location</th>
</tr>
</thead>
<tbody>
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<td>K11</td>
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</tr>
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<td>S14</td>
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<td>Frigo, Caleb</td>
<td>E04</td>
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<td>Gagnon, Émilie</td>
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<td>Garry-Jones, Ellie</td>
<td>D04</td>
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<tr>
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<td>F12</td>
</tr>
<tr>
<td>Gharib, Hana</td>
<td>S02</td>
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<td>Ghauri, Aman</td>
<td>S05</td>
</tr>
<tr>
<td>Gomez, Lily</td>
<td>F16</td>
</tr>
<tr>
<td>Goranson, Nolan</td>
<td>K14</td>
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<tr>
<td>Gratton, Caitlyn</td>
<td>Q11</td>
</tr>
<tr>
<td>Gray, Teagan</td>
<td>G11</td>
</tr>
<tr>
<td>Greene, Alison</td>
<td>Q07</td>
</tr>
<tr>
<td>Grewal, Daya</td>
<td>F06</td>
</tr>
<tr>
<td>Guagliano, Alissa</td>
<td>T15</td>
</tr>
<tr>
<td>Guay, Natalie</td>
<td>P01</td>
</tr>
<tr>
<td>Guay, Samantha</td>
<td>D12</td>
</tr>
<tr>
<td>Guillemette, Jack</td>
<td>Q19</td>
</tr>
<tr>
<td>Gulliford, Douglas</td>
<td>M09</td>
</tr>
<tr>
<td>Guorgui, Chantelle</td>
<td>E09</td>
</tr>
<tr>
<td>Gupta, Anika</td>
<td>C09</td>
</tr>
<tr>
<td>Gupta, Neha</td>
<td>H05</td>
</tr>
<tr>
<td>Haqar, Saleh</td>
<td>J09</td>
</tr>
<tr>
<td>Hamilton, Hillary</td>
<td>B03</td>
</tr>
<tr>
<td>Hanna, Christina</td>
<td>P19</td>
</tr>
<tr>
<td>Hanna, Jacob</td>
<td>Q08</td>
</tr>
<tr>
<td>Hanna, Matthew</td>
<td>E05</td>
</tr>
<tr>
<td>Hanna, Nour</td>
<td>R04</td>
</tr>
<tr>
<td>Harris, Sofija</td>
<td>G14</td>
</tr>
<tr>
<td>Harrison, Laken</td>
<td>K06</td>
</tr>
<tr>
<td>Hayman, Jennifer</td>
<td>D03</td>
</tr>
<tr>
<td>Healey, Isabelle</td>
<td>B08</td>
</tr>
<tr>
<td>Hernandez, Isabella</td>
<td>T05</td>
</tr>
<tr>
<td>Higgins, Steven</td>
<td>P18</td>
</tr>
<tr>
<td>Higham, Fiona</td>
<td>M05</td>
</tr>
<tr>
<td>Hill, Domenic</td>
<td>J07</td>
</tr>
<tr>
<td>Hill, Lily</td>
<td>Q07</td>
</tr>
<tr>
<td>Hill, Taylor</td>
<td>L04</td>
</tr>
<tr>
<td>Hinca, Luke</td>
<td>Q08</td>
</tr>
<tr>
<td>Hoferica, Jakub</td>
<td>L03</td>
</tr>
<tr>
<td>Hofstee, Tristan</td>
<td>B18</td>
</tr>
<tr>
<td>Hope, Téa</td>
<td>R05</td>
</tr>
<tr>
<td>Horn, Abby</td>
<td>J13</td>
</tr>
<tr>
<td>Hryniwki, Stephanie</td>
<td>C07</td>
</tr>
<tr>
<td>Hu, Rebecca</td>
<td>M05</td>
</tr>
<tr>
<td>Hussaini, Uzayr</td>
<td>N12</td>
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<td>Iannuzzi, Daniella</td>
<td>N12</td>
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<tr>
<td>Ieluzzi, Emily</td>
<td>M05</td>
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<tr>
<td>Ieluzzi, Isabel</td>
<td>T15</td>
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<tr>
<td>Ikram, Rabia</td>
<td>F11</td>
</tr>
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<td>Iluobe, Anita</td>
<td>D14</td>
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<tr>
<td>Inam, Zainab</td>
<td>Q16</td>
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<tr>
<td>Inayatali, Hassaan</td>
<td>U14</td>
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<td>Iqbal, Areeb</td>
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<td>Ismail, Jumana</td>
<td>A14</td>
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<td>Israel, Hailey</td>
<td>T25</td>
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<td>Jafabrad, Marcus</td>
<td>P15</td>
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<td>Jain, Riya</td>
<td>E02</td>
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<tr>
<td>Jamieson, Cadence</td>
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<td>Janvekar, Noora</td>
<td>H11</td>
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<td>G08</td>
</tr>
<tr>
<td>Jin, Molly</td>
<td>U13</td>
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<td>Jing, Anne</td>
<td>M17</td>
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<td>Johnson, Katelyn</td>
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<td>Q04</td>
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<td>P11</td>
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<td>Jung, Caleb</td>
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<td>Jung, Claire</td>
<td>U04</td>
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<td>S17</td>
</tr>
<tr>
<td>Kacarevic, Julia</td>
<td>F05</td>
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</table>
## EXHIBITOR INDEX (CONTINUED)

<table>
<thead>
<tr>
<th>Name</th>
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<tbody>
<tr>
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<td>N15</td>
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<td>L13</td>
</tr>
<tr>
<td>Mitchell, Kaysee</td>
<td>P13</td>
</tr>
</tbody>
</table>
EXHIBITOR INDEX  
(CONTINUED)

Parvinchi, Adelia        G18  Saturnino, Anthony        M19  Short, Patrick        K17  
Patel, Dhruv              P15  Saturnino, Joseph        N09  Shvetsov, Evan        C16  
Pathak, Shuvam           L14  Scheben, Aiden           P18  Sienna, Elizabeth      D09  
Paul, Joshua              J16  Schooley, Jacob         F08  Silva, Sofia           F03  
Paulson, Owen             L14  Schwartz, William      T20  Sim, Haylee            H12  
Pencil, Shernee          K07  Scott, Grace            A13  Singh, Satyam          L19  
Perri, Maddy              G06  Semelhago, Justin      U14  Singh, Suraj           K18  
Peters, Isaiah            N02  Shah, Anjali            G05  Situ, Kelly            D10  
Peters, Jake              N01  Shaikh, Aayan           M10  Situ, Winni            C02  
Petrocelli, Isabella      A02  Shaikh, Aimen           P12  Sivagurunathan, Shivani R19  
Pontet-DaSilva, Kasia    H03  Shannon, Ethan          D02  Skye, Aleena           F04  
Popowich, Maya           S03  Shi, Amy                B07  Skye, Darrus           B10  
Powell, Kaitlyn Rebecca  E01  
Probert, Andrew           T04  
Pyle, Radley              E15  
Qa dri, Yusuf            K04  
Qazi, Emaad              D16  
Qing, Chen               T03  
Qureshi, Areeba          G17  
Rabia, Camila            G10  
Racco, Devin             J11  
Raheel, Hafsaht Binte    J15  
Rajack, Ethan            N02  
Ramelli, Paolo           E06  
Rauf, Talha              D13  
Reda, Ali                D07  
Redford, Angeline        C14  
Reitsma, Julie           Q01  
Renaud, Kyle             K08  
Ritskes, Katelyn         D08  
Rivas-Gonzalez, John Eric E17  
Rizw an, Aleesa          S02  
Robinson, Bronwen        B09  
Rocha, Alyssa            H10  
Romachy, Evan            N03  
Romano, Matteo           C04  
Ross, Lexi               B09  
Rueda, Valentina         T05  
Ruetsas, Alicia          U09  
Ruetsas, Jason           K10  
Ruhland, Abigail         S04  
Ruiter, Kailey           J14  
Saharwal, Mahir          T14  
Sacha, Julianna          G16  
Saeed, Aliza             S06  
Salai, Rebecca           G04  
Salerno, Adriana         A07  
Samadi, Sarah            K06  
Sandhu, Kaylan           C05  
Sangha, Jyot             M15  
Sanni, Misimi           T12  
Sarao, Arjun             T22  
Sarkar, Nidhi           C18  
Sassanelli, Ava          M07  
Satosek, Thomas          R03  

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30
EXHIBITOR INDEX
(CONTINUED)

Skye, Evan P04  White, Elizabeth D05
Slootweg, Jonah B15  White-Marquard, Chelsea J02
Smale, Lily N13  Williams, Charles U06
Smith, Bradley L12  Wilson, Maggie S08
Song, Bohmie G01  Wong, Caitlyn B08
Son, Ruhan R12  Wong, Mya K07
Sos-Medeiros, Kevin K02  Wu, Sterling A17
Spolia, Praneel L10  Wythe, Zander Q10
Stanley, Amelia B14  Xu, Ellie N18
Stelpstra, Rachel E03  Xu, Julia R14
Stephen, Julia E13  Xu, Michael M16
Stevenson, Ashley K05  Xu, Raphael Q15
Suhail, Laalbah N19  Yan, Eileen S12
Suras, Ojas T09  Yin, Allan D15
Swamy, Lacek R06  Yin, Brian M14
Syed, Yahya L05  Youssif, Danyal T09
Symons, Cale P07  Zantingh, Emma-Grace P02
Tassé, Devan D02  Zhang, Jerron T22
Taylor, Sophie D17  Zhang, Kaylee M12
Teeuwen, Katelyn A03  Zhang, Nicole A05
Tesser, Luke R17  Zhao, Ashley S12
Theron, Ben K01  Zhao, Cindy N14
Thomas, Emmalea P17  Zhao, Daniel T21
Thompson, Jordan A16  Zito, Fadheelah B02
Tlabar, Alp B05
Toito Neto, Gisela C06
Torkmani, Mohammed Q15
Towardros, David F17
Traoré, Kader J09
Tremblay, William Q18
Tryguba, Iuliya K05
Unnithan, Ashwin F10
Van Doodewaard, Ryan R08
Van Groningen, Jacob B03
Van Voorst, Hope C11
Vanever, Quincy B10
Vidican, David L17
Vimalathas, Anajanaa U13
Vincent, Tori B04
Virani, Aydin S07
Vlasic, Edwin L11
Vos, Rachel A09
Vossoughi, Sam K14
Vrsaljko, Emily D06
Vrsaljko, Rebecca D06
Wang, Cindy G02
Wang, Edward A06
Wang, Joanna U03
Ward, Julie R16
Warren, Colby F08
Wasi, Alezea R02
Watkin, Kasia F12
Wei, Han K13
Whetstone, Kathryn R15
White, Ayla Q11
<table>
<thead>
<tr>
<th>Project Number</th>
<th>Title</th>
<th>Students</th>
<th>School/Region</th>
</tr>
</thead>
<tbody>
<tr>
<td>A01</td>
<td>Bacteria In The Classroom</td>
<td>Maryanna Oraha, Alice Fan</td>
<td>Jr 7/8 Life Sciences Non-Human St. Michael, HWCDSB</td>
</tr>
<tr>
<td>A02</td>
<td>Little Waves, Big Impact</td>
<td>Isabella Collia, Isabella Petrocelli</td>
<td>Jr 7/8 Life Sciences Non-Human St. Andrew Elementary School, HCDSB</td>
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<tr>
<td>A03</td>
<td>Is Your Dog's Mouth Cleaner Than Yours?</td>
<td>Katelyn Teeuwsen, Amy Kippers</td>
<td>Jr 7/8 Life Sciences Non-Human Calvin Christian School (Hamilton), IND</td>
</tr>
<tr>
<td>A04</td>
<td>Haricot!</td>
<td>Lilyanne Lavoie, Émilie Gagnon</td>
<td>Jr 7/8 Life Sciences Non-Human École Secondaire Georges-P.-Vanier, CSV</td>
</tr>
<tr>
<td>A05</td>
<td>Bacteria Growth on Bread Past Different Expiration Dates</td>
<td>Nicole Zhang</td>
<td>Jr 7/8 Life Sciences Non-Human Appleby College, IND</td>
</tr>
<tr>
<td>A06</td>
<td>Coloring Plant</td>
<td>Edward Wang</td>
<td>Jr 7/8 Life Sciences Non-Human Maple Grove Public School, HDSB</td>
</tr>
<tr>
<td>A07</td>
<td>Traumatic Effects</td>
<td>Adriana Salerno, Sophia Fiorucci</td>
<td>Jr 7/8 Life Sciences Non-Human Sts. Peter &amp; Paul, HWCDSB</td>
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<td>A08</td>
<td>Will It Eggspire?</td>
<td>Beatrice Faber</td>
<td>Jr 7/8 Life Sciences Non-Human Trinity Christian School, IND</td>
</tr>
<tr>
<td>A10</td>
<td>Proteolytic Effect of Fruit Enzyme Homogenate on Beef with Varying Degrees of Doneness</td>
<td>Ethan Chiang</td>
<td>Jr 7/8 Life Sciences Non-Human Appleby College, IND</td>
</tr>
<tr>
<td>A11</td>
<td>Testing if there are there dangerous bacteria on your food.</td>
<td>Jack Burian</td>
<td>Jr 7/8 Life Sciences Non-Human Appleby College, IND</td>
</tr>
<tr>
<td>A12</td>
<td>Arabinose: An On/Off Switch for Gene Expression</td>
<td>Lina Elsaadi</td>
<td>Sr 11/12 Life Sciences Non-Human North Park Collegiate and Vocational School, GEDSB</td>
</tr>
<tr>
<td>A13</td>
<td>Geronimo Stilton's Worst Nightmare</td>
<td>Grace Scott</td>
<td>Jr 7/8 Life Sciences Non-Human Trinity Christian School, IND</td>
</tr>
<tr>
<td>A14</td>
<td>Honey Preserving Meat</td>
<td>Jumana Ismail</td>
<td>Jr 7/8 Life Sciences Non-Human Maple Grove Public School, HDSB</td>
</tr>
<tr>
<td>A15</td>
<td>Shake That Thang</td>
<td>Sofia Anunciacao</td>
<td>Jr 7/8 Life Sciences Non-Human Oakville Christian School, IND</td>
</tr>
<tr>
<td>A16</td>
<td>Project B.E.A.N</td>
<td>Holly Jansen, Jordan Thompson</td>
<td>Jr 7/8 Life Sciences Non-Human Balaclava, HWDSB</td>
</tr>
<tr>
<td>A17</td>
<td>The Effects of Garlic, Ginger and Honey on Bacterial Colonies</td>
<td>Sterling Wu</td>
<td>Jr 7/8 Life Sciences Non-Human Appleby College, IND</td>
</tr>
<tr>
<td>A18</td>
<td>5 Second Rule</td>
<td>Agnes Lau</td>
<td>Jr 7/8 Life Sciences Non-Human Maple Grove Public School, HDSB</td>
</tr>
<tr>
<td>B01</td>
<td>Analysis of the Concentration of Acids in Popular Drinks</td>
<td>Jiayi Deng</td>
<td>Sr 11/12 Phys &amp; Math Sci King's Christian Collegiate, IND</td>
</tr>
<tr>
<td>B02</td>
<td>Sleeve Bracelet</td>
<td>Fadheelah Zito</td>
<td>Jr 7/8 Eng &amp; Comp Sci St. Michael, HWCDSB</td>
</tr>
<tr>
<td>B03</td>
<td>The Connection Between the Lunar Cycle and the Behaviour of Canines</td>
<td>Hillary Hamilton, Jacob Van Groningen</td>
<td>Sr 11/12 Life Sciences Non-Human Ancaster High, HWDSB</td>
</tr>
<tr>
<td>B04</td>
<td>The impacts of eco-friendly fertilizing alternatives on green beans from seed to early growth</td>
<td>Tori Vincent</td>
<td>Jr 7/8 Biotechnology Pilgrim Wood Public School, HDSB</td>
</tr>
<tr>
<td>B05</td>
<td>Investigating the Effects of Waves and Grounding on Plants Over a Period of Four Weeks</td>
<td>Alp Tlabar</td>
<td>Jr 7/8 Life Sciences Non-Human Appleby College, IND</td>
</tr>
<tr>
<td>B06</td>
<td>Fountain of Bacteria: Purveyor of Pathogens</td>
<td>Katelyn Johnson</td>
<td>Jr 7/8 Life Sciences Non-Human Guy B. Brown, HWDSB</td>
</tr>
<tr>
<td>B07</td>
<td>How Permanent is 'Permanent'?</td>
<td>Alora Lavalle, Amy Shi</td>
<td>Jr 7/8 Phys &amp; Math Sci Tiger Jeet Singh Public School, HDSB</td>
</tr>
</tbody>
</table>
PROJECT LISTINGS
(CONTINUED)

B08 Rainbow Tomatoes
Caitlyn Wong, Isabelle Healey
Jr 7/8 Life Sciences Non-Human
Oakville Christian School, IND

B09 'Ketchup and fries' grafting efficient experiment
Bronwen Robinson, Lexi Ross
Jr 7/8 Life Sciences Non-Human
Sir William Osler, HWDSB

B10 Soiless Part 2
Darrus Skye, Quincy Vanevery
Jr 7/8 Life Sciences Non-Human
J. C. Hill Elementary, SNS

B11 Is It Worth It? Expensive VS Homemade Cleaning Supplies
Hannah Lavallee, Julia Bakes
Jr 7/8 Life Sciences Non-Human
Tiger Jeet Singh Public School, HDSB

B12 Quelle est la meilleur quantité d'engrais pour faire croître une plante?
Malak Chaar, Sarah al Amine
Jr 7/8 Life Sciences Non-Human
École Secondaire Georges-P.-Vanier, CSV

B13 How Dirty Is My School?
Sofia Koehnen
Jr 7/8 Life Sciences Non-Human
Maple Grove Public School, HDSB

B14 Canine DNA
Amelia Stanley
Jr 7/8 Life Sciences Non-Human
Escarpment View Public School, HDSB

B15 What Types of Video Games Are The Most Addictive
Jonah Slootweg, Ryan Ahn
Jr 7/8 Health Sci. Human
Calvin Christian School (Hamilton), IND

B16 Zero Cals or Gut Fails
Carol Koubaeesh
Sr 11/12 Life Sciences Non-Human
King's Christian Collegiate, IND

B17 NO DIRT
Lucas Martin
Jr 7/8 Life Sciences Non-Human
J. C. Hill Elementary, SNS

B18 The replacement of antibiotics
Tristan Hofstee
Jr 7/8 Life Sciences Non-Human
Guy B. Brown, HWDSB

C01 The Proof is in the Prints
Sydney Cao, Zara Kazi
Jr 7/8 Health Sci. Human
Joshua Creek Public School, HDSB
C02 The Effect of Colour on Reaction Time
Devyanee Mehta, Winni Situ
Sr 11/12 Health Sci. Human
North Park Collegiate and Vocational School, GEDSB

C03 The Golden Spice: Increasing the Bioavailability of Curcumin
Arianna Mastrolonardo
Int 9/10 Health Sci. Human
King’s Christian Collegiate, IND

C04 The Power of One: A Study of Self-Esteem
Matteo Romano
Jr 7/8 Health Sci. Human
W. H. Morden Public School, HDSB

C05 Tame the Video Game
Kaylan Sandhu
Jr 7/8 Health Sci. Human
St. Joachim, HWCDSB

C06 Synesthesia affects 1-4% of the population. Do you have it?
Olivia Nowak, Gisela Toito Neto
Jr 7/8 Health Sci. Human
St. Andrew Elementary School, HCDSB

C07 The Effects Of Music On Students
Stephanie Hrynkiw
Jr 7/8 Health Sci. Human
Balaclava, HWDSB

C08 What’s In Your Water? (filtering microplastics from bottled water)
Kylie DeVries, Isabelle Faulkner
Jr 7/8 Eng & Comp Sci
Burlington Christian Academy, IND

C09 Therapeutic effects of a synthetic CDK5 inhibitor as a drug towards models of Parkinson’s disease
Anika Gupta
Sr 11/12 Health Sci. Human
Westdale Secondary School, HWDSB

C10 Left or Right? A comparative analysis of hemispheric activation
Mark Abdelshaheed, Lucas Monter
Jr 7/8 Health Sci. Human
St. Elizabeth Seton Elementary School, HCDSB

C11 Hungry?
Hope Van Voorst
Jr 7/8 Health Sci. Human
Calvin Christian School (Hamilton), IND

C12 How do rises in body temperature through physical activity affect mental processing?
Aahan Madhok, Mohid Farooqi
Jr 7/8 Health Sci. Human
Tiger Jeet Singh Public School, HDSB

Hamilton Amateur Astronomers
Canada’s largest independent astronomy club
Meetings second Friday monthly
7:30 pm. Spectator, 44 Frid St.
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Events, outreach & newsletter
Open to everyone

www.amateurastronomy.org
info@amateurastronomy.org
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Maya Clapperton
Int 9/10 Health Sci. Human
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C14 Tackling Concussions Head On
Angeline Redford
Sr 11/12 Health Sci. Human
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C15 Are Fingerprints Inherited?
Ellie Bourke
Jr 7/8 Health Sci. Human
Maple Grove Public School, HDSB

C16 How Neurolinguistic Programming in Media Affects Consumers
Evan Shvetsov
Jr 7/8 Health Sci. Human
Maple Grove Public School, HDSB

C17 The PEP Project | Point System Educational Puzzles
Joshua Middleton
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Alexander’s Public School, HDSB

C18 Stabilizing Effect of Exercise and Type of Carbohydrate on Postprandial Blood Glucose Level in T2D
Nidhi Sarkar
Int 9/10 Health Sci. Human
Dundas Valley Secondary School, HDSB

D01 Perception of Time
Brianna Nicholson
Jr 7/8 Health Sci. Human
Trinity Christian School, IND

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E01 The Effects of Classical Music on The Brain
Kaitlyn Rebecca Powell
Jr 7/8 Health Sci. Human
Appleby College, IND
PROJECT LISTINGS
(CONTINUED)

E02 Interestimulants
Riya Jain, Kenzie North
Jr 7/8 Health Sci. Human
W. H. Morden Public School, HDSB

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Rachel Steelpstra
Jr 7/8 Health Sci. Human
Trinity Christian School, IND

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St. David, HWCDSB

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Joshua Creek Public School, HDSB

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Alexander's Public School, HDSB

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Calvin Christian School (Hamilton), IND

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Jr 7/8 Health Sci. Human
Our Lady of Mount Carmel, HWCDSB

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Sandhya Dath
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Balaclava, HWDSB

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St. John Paul II, HWCDSB

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Tobin Davis, Sophie Nguyen
Jr 7/8 Health Sci. Human
W. H. Morden Public School, HDSB

F01 How does the use of electronics affect your vision and brain function?
Emma Li, Sarah Al-tamimi
Jr 7/8 Health Sci. Human
Forest Trail Public School, HDSB
The David Braley Athletic and Recreation Centre (DBARC)
BASEF Student Boundaries
Friday, March 29 - 12 noon to 4 pm.

Students are expected to stay at their projects during lunch and the afternoon judging period. Mohawk College and BASEF ask that all students stay within the highlighted areas.
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Maya Clapperton
Int 9/10 Health Sci. Human
Westdale Secondary School, HWDSB

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Emma Li, Sarah Al-tamimi
Jr 7/8 Health Sci. Human
Forest Trail Public School, HDSB
PROJECT LISTINGS
(CONTINUED)

F02 Which facial cleanser is a flip or flop?
Kate Millar, Cassie Crawford
Jr 7/8 Health Sci. Human
Maple Grove Public School, HDSB

F03 How can we "KINECT" with KINESTHETIC learners?
Sofia Silva
Jr 7/8 Health Sci. Human
St. Mary Elementary School, HCDSD

F04 Haudenosaunee Roots: Preventing Diabetes with Indigenous Methods
Aleena Skye
Jr 7/8 Health Sci. Human
J. C. Hill Elementary, SNS

F05 The Cardiovascular System
Joud Kassim, Julia Kacarevic
Jr 7/8 Health Sci. Human
Joshua Creek Public School, HDSB

F06 A rainbow of emotions
Daya Grewal, Jumana Al khudhairy
Jr 7/8 Health Sci. Human
Maple Grove Public School, HDSB

F07 Using Trojan horse Microbubbles and Ultrasound to Effectively Treat Alzheimer's Disease
Zainab Al-Rammahi
Jr 7/8 Health Sci. Human
Ancaster Meadow, HWDSB

F08 U.S.G - Ultrasonic, Sensor, Glasses
Colby Warren, Jacob Schooley
Jr 7/8 Eng & Comp Sci
Alexander's Public School, HDSB

F09 The Truth Behind Sport Drinks
Jared Moore, Griffin Moore
Jr 7/8 Health Sci. Human
Oakville Christian School, IND

F10 Henoch-Schonlein purpura (HSP) - Causes, Diagnosis, Treatments and Prevention
Ashwin Unnithan
Int 9/10 Health Sci. Human
Orchard Park Secondary School, HWDSB

F11 Sensitive much?
Emily Ieluzzi, Theodora Centritto
Jr 7/8 Health Sci. Human
St. Joachim, HWCDSD

F12 To Eat Or Not To Eat That Is The Question
Kasia Watkin, Isabela Gauch Gomes Viana
Jr 7/8 Health Sci. Human
St. John Paul II, HWCDSD
F13 A Walk Through Life: A Patient’s Journey
Raisa Allarakia
Jr 7/8 Health Sci. Human
W. H. Morden Public School, HDSB

F14 Magic Massager
Elizabeth Bighiu
Jr 7/8 Health Sci. Human
Rotherglen School (Oakville), IND

F15 The Effects of a Student’s Learning Style on Their Success at School
David Amm
Jr 7/8 Health Sci. Human
Appleby College, IND

F16 Chinese Food Syndrome: Fact or Fiction?
Lily Gomez
Jr 7/8 Health Sci. Human
John William Boich Public School, HDSB

F17 Antibiotics: the solution or the problem
Justyna Labib, David Towadros
Int 9/10 Health Sci.
Human
King’s Christian Collegiate, IND

F18 Are You Being Watched?
Joyce Lee
Jr 7/8 Health Sci. Human
Trinity Christian School, IND

G01 Heartbeats for Health
Bohmie Song
Jr 7/8 Health Sci. Human
Sir William Osler, HWDSB

G02 Do You See What Eye See: Using technology to create reliable and efficient vision exams
Cindy Wang
Jr 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

G03 Fingerprints: Inherited or not?
Katherine Lepischak, Taran Kang
Jr 7/8 Health Sci. Human
Dalewood, HWDSB

G04 Analyzing Assumptions: A Study of Societal Stereotypes
Nicole Chan, Rebecca Salai
Jr 7/8 Health Sci. Human
John William Boich Public School, HDSB

G05 The Stroop Effect & Music
Anjali Shah
Jr 7/8 Health Sci. Human
Joshua Creek Public School, HDSB

G06 Musical Memory
Eileen Panicker, Maddy Perri
Jr 7/8 Health Sci. Human
St. Joachim, HWCDSB
PROJECT LISTINGS
(CONTINUED)

G07 Do You Need a Hand?
Kristine Fabro, Yoanna Nasir
Jr 7/8 Eng & Comp Sci
St. Michael, HWCDSB

G08 Put Me In Coach!
William Jeneway
Jr 7/8 Health Sci. Human
Oakville Christian School, IND

G09 What Factors Affect Lung Capacity?
Derek Foo
Jr 7/8 Health Sci. Human
Joshua Creek Public School, HDSB

G10 Our teeth are important
Claudia Brooks, Camila Rabi
Jr 7/8 Health Sci. Human
École secondaire Georges-P.-Vanier, CSV

G11 BCC Gone
Teagan Gray
Jr 7/8 Eng & Comp Sci
Alexander's Public School, HDSB

G12 Breathable Knee Brace
Ema Bauder
Jr 7/8 Eng & Comp Sci
Alexander's Public School, HDSB

G13 Are females smarter than males?
Afia Ahmed, Humaad Ali
Jr 7/8 Health Sci. Human
Tiger Jeet Singh Public School, HDSB

G14 How can background noise effect your concentration
Sofija Harris
Jr 7/8 Health Sci. Human
Tiger Jeet Singh Public School, HDSB

G15 How Time Pressure Affects the Performance and Judgment of Either Genders
Ammie Dai
Jr 7/8 Health Sci. Human
Appleby College, IND

G16 Human Emotion
Julianna Sacha, Jessica Mcleish
Jr 7/8 Health Sci. Human
Maple Grove Public School, HDSB

G17 Naptime!: Solutions for Sleep Deprivation in School
Areeba Qureshi
Int 9/10 Health Sci. Human
Westmount Secondary School, HWDSB

G18 A Tune To Remember
Adela Parvinchi
Jr 7/8 Health Sci. Human
Oakville Christian School, IND

H01 Food of the Future
Jacob Colotosti
Int 9/10 Biotechnology
Bishop Ryan Secondary School, HWCDSB

H02 Doo Your Duty
Lauren Paredes, Larissa Colatosti
Jr 7/8 Biotechnology
St. Luke, HWCDSB

H03 EDEN-ISS - Future of Food in Space
Kasia Pontet-DaSilva
Jr 7/8 Biotechnology
St. Mary Elementary School, HCDSB

H04 Ti-Dye Energy: Natural Dye Combinations in Dye-Sensitized Solar Cells
Rya Adronov
Jr 7/8 Phys & Math Sci
Sir William Osler, HWDSB

H05 Identifying Cross-Resistance between the Antiseptic Chlorhexidine and Clinically-Used Antibiotics
Neha Gupta
Int 9/10 Biotechnology
Westdale Secondary School, HWDSB

H06 Keeping It Fresh: A Natural Alternative for Synthetic Food Preservatives
Gabrielle Buckley, Anita Chander
Sr 11/12 Biotechnology
King’s Christian Collegiate, IND

H07 Gold Nanostructured Biosensor to Detect Pathogens
Camila Moran-Hidalgo
Sr 11/12 Biotechnology
Westdale Secondary School, HWDSB

H08 From Gene Editing to Mutations
Shahd Al Hamadneh, Sondos Al Hamadneh
Jr 7/8 Biotechnology
Escarpean View Public School, HDSB

H09 Factors that Affect Antimicrobial Efficacy in Topical Bacterial Infections
Maya Morcos
Sr 11/12 Biotechnology
King’s Christian Collegiate, IND

H10 Vicks VapoRub Bath Bombs
Gabriella Miklavcic, Alyssa Rocha
Jr 7/8 Biotechnology
St. Michael, HWCDSB

H11 Can bioprinting help with clinical complexities?
Noora Janvekar
Jr 7/8 Biotechnology
Joshua Creek Public School, HDSB

H12 The Future of Food
Haylee Sim
Jr 7/8 Biotechnology
Joshua Creek Public School, HDSB

H14 Studying Stats
Capri Czekaj, Denver Donnelly
Jr 7/8 Health Sci. Human
St. Joachim, HWCDSB
H15 Le slime avec Orbis, est-il meilleur?
Sarra Chaouach
Jr 7/8 Health Sci. Human
École secondaire Georges-P.-Vanier, CSV

H16 Fat Calories
Jose Calouro
Jr 7/8 Health Sci. Human
Cathy Wever, HWDSB

H17 Stretch to Your Limit
Elyse Mostacci
Jr 7/8 Health Sci. Human
St. John Paul II, WCDSSB

H18 The Stroop Effect
Hannah Lewin
Jr 7/8 Health Sci. Human
Trinity Christian School, IND

J01 The Marangoni Effect in liquid environments
Maria Chzhen
Jr 7/8 Phys & Math Sci
Dalewood, HWDSB

J02 Carbohydrate Rush
Kalina Carr, Chelsea White-Marquard
Jr 7/8 Phys & Math Sci
Cathy Wever, HWDSB
PROJECT LISTINGS (CONTINUED)

J03 Magnetic Movements
Michael Kalampalikis
Jr 7/8 Phys & Math Sci
St. Joachim, HWCDSB

J05 The Science Behind The Classic Cookie
Avery Edl
Jr 7/8 Phys & Math Sci
Balclava, HWDSB

J06 Meilleur gel pour cheveux
Dadie Musavyi, Mariana Aguilar Serrano
Jr 7/8 Phys & Math Sci
École secondaire Georges-P.-Vanier, CSV

J07 RezLax
Domenic Hill
Jr 7/8 Phys & Math Sci
J. C. Hill Elementary, SNS

J08 How do salinity and temperature affect the density of water?
Madeeha Naqvi
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

J09 Les moteurs homopolaires: C'est pas sorcier!
Kader Traoré, Saleh Haggar
Jr 7/8 Phys & Math Sci
École secondaire Georges-P.-Vanier, CSV

J10 To Flex or Not to Flex
Jackson Armitage
Jr 7/8 Phys & Math Sci
Trinity Christian School, IND

J11 Sports Dynamics
Devin Racco
Jr 7/8 Phys & Math Sci
St. Andrew Elementary School, HCDSB

J12 The Mpemba Effect: Can Hot Water Freeze Faster Than Cold Water?
Emaan Kotwal
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

J13 'I want to drink this coffee cold', said no one ever.
Abby Horn
Jr 7/8 Phys & Math Sci
Rotherglen School (Oakville), IND

J14 Organic Batteries
Kailey Ruiter
Jr 7/8 Phys & Math Sci
Cathy Wever, HWDSB

J15 The Effect of Corrosion on Water Distribution Pipes
Hafsa Binte Raheel
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

J16 MARS- SEEK SIGNS OF LIFE
Joshua Paul
Jr 7/8 Phys & Math Sci
St. Mary Elementary School, HCDSB

J17 Synthetic Oil, Worth the cost
Levi Fox
Jr 7/8 Phys & Math Sci
Trinity Christian School, IND

J18 Divine Intelligence
Cynthia Coleman
Jr 7/8 Phys & Math Sci
St. Vincent de Paul, HWCDSD

J19 Battle of the Diapers: Super Absorbent Polymers
Jannah Khaja
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

K01 Seeing Beyond the Human Eye
Ben Theron
Jr 7/8 Phys & Math Sci
Oakville Christian School, IND

K03 Estimation of the acceleration due to gravity (g) using a simple pendulum
Khanya Ndiweni
Jr 7/8 Phys & Math Sci
St. Mary Elementary School, HCDSB

K04 Preventing Apple Oxidation
Yusuf Qadri
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

K05 The Unknown Variables of the Universe
Iuliya Tryguba, Ashley Stevenson
Jr 7/8 Phys & Math Sci
St. Andrew Elementary School, HCDSB

K06 Can’t touch this
Sarah Samadi, Laken Harrison
Jr 7/8 Phys & Math Sci
Rotherglen School (Oakville), IND

K07 How to turn your egg from zero to hero
Shernee Pencil, Mya Wong
Jr 7/8 Phys & Math Sci
Forest Trail Public School, HDSB

K08 You Go First
Kyle Renaud
Jr 7/8 Phys & Math Sci
John William Boich Public School, HDSB

K09 Musical Emotions
Rachel Agro
Jr 7/8 Health Sci. Human
St. Augustine, HWCDSB

K10 Predictability of Double Pendulum
Jason Rueta
Jr 7/8 Phys & Math Sci
St. Elizabeth Seton Elementary School, HCDSB

K11 Batteries of the Future
Ali Darwish
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

K12 Conserving Momentum with MMDs
Paul Kyum Lee
Jr 7/8 Phys & Math Sci
Dalewood, HWDSB
K13 Temperature change the Quality of Liquid
Han Wei
Jr 7/8 Phys & Math Sci
Maple Grove Public School, HDSB

K14 Rocketology
Sam Vossoughi, Nolan Goranson
Jr 7/8 Phys & Math Sci
Joshua Creek Public School, HDSB

K15 How to know when you need a new sail
Arbutus Fricker
Jr 7/8 Phys & Math Sci
Dalewood, HWDSB

K16 Using a Non-Newtonian Fluid as Helmet Padding to Reduce the Risk of
Julian Alfano
Jr 7/8 Phys & Math Sci
St. Margaret Mary, HWCDSB

K17 Tee It High and Let It Fly
Patrick Short, James Cheenanjie
Jr 7/8 Phys & Math Sci
St. Joachim, HWCDSB

K18 Sound Insulation. What Works?
Suraj Singh, Maanav Parikh
Jr 7/8 Phys & Math Sci
Joshua Creek Public School, HDSB

K19 Spherification
Julian Ballentyne
Jr 7/8 Phys & Math Sci
Oliver M. Smith Kawennio:io, SNS

L01 E-Waste of Printed Circuit Boards
Brian Machado
Sr 11/12 Phys & Math Sci
King’s Christian Collegiate, IND

L02 Put Your Water To Work: Using Hydro Power To Lift A Load
Haroon Khan
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

L03 Blasting Off for greatness
Jakub Hoferica, Matthew Becze
Jr 7/8 Phys & Math Sci
St. Andrew Elementary School, HCDSB

L04 Little time or lots of time
Taylor Hill
Jr 7/8 Phys & Math Sci
J. C. Hill Elementary, SNS

L05 Thermochromic slime
Yahya Syed
Jr 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

L06 Sustainable advancements in tire rubber using discarded Biomass
Vesa Barileva
Jr 7/8 Phys & Math Sci
Pilgrim Wood Public School, HDSB

L07 Freezing Solutions
Micah Brouwer, Ben Brouwer
Jr 7/8 Phys & Math Sci
Calvin Christian School (Hamilton), IND

L08 The best man made creation
Andrey Martchenko
Int 9/10 Phys & Math Sci
Guy B. Brown, HWDSB

L09 Heat It Up!
Melissa Lee, Gheed Khekani
Jr 7/8 Phys & Math Sci
Oxford Learning Academy, IND

L10 Duracell Quantum vs Coppertop vs Rechargable Which One?
Madhav Parekh, Praneel Spolia
Jr 7/8 Phys & Math Sci
Ancaster Meadow, HWDSB
L11 Digital Quill
Edwin Vlasics, Kareem Fahmi Jr 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

L12 Multi Use Dispenser
Bradley Smith, Tommy Madgett Jr 7/8 Eng & Comp Sci
Alexander's Public School, HDSB

L13 A Better Metal Detector
Luke Misa Jr 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

L14 Sensorbot
Owen Paulson, Shuvam Pathak Jr 7/8 Eng & Comp Sci
Oxford Learning Academy, IND

L15 Out of the Blue
Savannah Koshurba, Thanaa Al-Kaisy Jr 7/8 Eng & Comp Sci
Oxford Learning Academy, IND

L16 Saving the Environment, One Spoon at a Time
Kallista O'Keefe Sr 11/12 Eng & Comp Sci
King's Christian Collegiate, IND

L17 Can UV light save lives?
David Vidican Int 9/10 Eng & Comp Sci
St. Thomas Aquinas Secondary School, HCDSB

L18 The Puzzle Pal
Stephanie Main, Addison Law Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB

L19 The Interphalangeal Joint Flexibility Test: Exploring Joint Flexibility with Piezoelectricity
Satyam Singh Int 9/10 Eng & Comp Sci
King’s Christian Collegiate, IND

M01 Egg-cellent flipper
Ryan Brouwer, Isaiah Peters Jr 7/8 Eng & Comp Sci
Calvin Christian School (Hamilton), IND

M02 SAS - Software Auto Signout
Noah Correia Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB

M03 Aero-Tronics: A High Pressure Aeroponics System for Sustainable Indoor Agriculture
Mitchell Clapperton Jr 7/8 Eng & Comp Sci
Guy B. Brown, HWDSB

M04 Teaching the Artificially Intelligent
Maria Al Sawadi, Arsema Mulugeta Jr 7/8 Eng & Comp Sci
Cathy Wever, HWDSB

M05 Earmergency
Rebecca Hu, Fiona Higham Jr 7/8 Eng & Comp Sci
Joshua Creek Public School, HDSB

M06 Testing Battery Voltage
Maddison Brisson Jr 7/8 Phys & Math Sci
St. Martin of Tours, HWCDSB

M07 Tremblement de terre moins dangereux
Mahassin Maina, Ava Sassanelli Jr 7/8 Eng & Comp Sci
Ecole secondaire Georges-P.-Vanier, CSV

M08 Application of Silver Nanoparticle Polyurethane Foam Filters
Mai Lee Ngo Sr 11/12 Eng & Comp Sci
King’s Christian Collegiate, IND

M09 Investigation of Slum Housing and Using Elements of Design to Improve Upon it
Douglas Gulliford Jr 7/8 Eng & Comp Sci
Appleby College, IND

M10 Kermit's Cars
Aayan Shaikh, Ahmad Abdul-Jabbar Jr 7/8 Eng & Comp Sci
Oxford Learning Academy, IND

M11 IMemory: Independence For Dementia Patients
Rachel Main, Maja Bizic Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB

M12 Power on the GO
Kaylee Zhang Jr 7/8 Eng & Comp Sci
Norwood Park, HWDSB

M13 Rust in Piece: The Corrosive Effects on Steel, Aluminum and Galvanized Steel
Evan Cotter Jr 7/8 Eng & Comp Sci
St. Augustine, HWCDSB

M14 Homopolar Motors
Brian Yin Jr 7/8 Eng & Comp Sci
St. Andrew Elementary School, HCDSB

M15 Lift A Load With Syringes
Jyot Sangha Jr 7/8 Eng & Comp Sci
Oxford Learning Academy, IND

M16 Charging The Future
Zain Mun, Michael Xu Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB
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M17 Project ATTIS: An Assistive Aid for Parkinson’s Patients.
Anne Jing
Sr 11/12 Eng & Comp Sci
Assumption College School, BHNCD

M18 The LaunchPad™
Naila Noormohamed
Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB

M19 Eave 3.0: An Autonomous Robotic Eavestrough Cleaner using Artificial Intelligence
Anthony Saturnino
Jr 7/8 Eng & Comp Sci
St. Margaret Mary, HWCDSB

N01 Jerry’s Great Escape
Jennah Khalil, Mohid Bukhari
Jr 7/8 Phys & Math Sci
Oxford Learning Academy, IND

N02 The Force - How to make a Hand Gesture Controlled Robot
Ethan Rajack, Jake Peters
Jr 7/8 Eng & Comp Sci
St. Joachim, HWCDSB

N03 Waste Water To Wash Water
Evan Romachyk
Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB

N04 Investigation on the best method to design and build an innovative magnetic levitation train.
Josh Mou
Jr 7/8 Eng & Comp Sci
Appleby College, IND

N05 Suspension vs Beam
Kieran Collins
Jr 7/8 Eng & Comp Sci
Sir William Osler, HWDSB

N06 Perpetual Motion Machines: Lighting Our World Without Touching a Button
Gladys Kozyra, Audrey Bisson
Jr 7/8 Eng & Comp Sci
St. Joseph, HWCDSD

N07 Wireless Energy and the Spark Sender
Sydney Eichenberg, Alex Karachok
Jr 7/8 Eng & Comp Sci
St. Andrew Elementary School, HCDSB

N08 Refuel Sidekick
Phillip Kim, Connor Beaupre
Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB

N09 Advanced Autonomous Shingling Robot
Joseph Saturnino
Int 9/10 Eng & Comp Sci
Bishop Ryan Secondary School, HWCDSB

N10 Cold Cure
Keith Allan
Jr 7/8 Eng & Comp Sci
Oakville Christian School, IND

N11 Development of an Intravenous Fluid Delivery System (IV FDS) for use in Developing Countries
Christopher Lamont
Jr 7/8 Eng & Comp Sci
St. Margaret Mary, HWCDSB

N12 Shocking Humidity
Uzayr Hussaini, Haris Cheema
Jr 7/8 Phys & Math Sci
Tiger Jeet Singh Public School, HDSB

N13 Convolutional Neural Network to Detect Eyes with Early Stages of Visual Impairment
Lily Smales
Jr 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

N14 C programming -- Password Encryption
Cindy Zhao
Jr 7/8 Eng & Comp Sci
Maple Grove Public School, HDSB

N15 Is Magnesium best
Jordan Milnthorpe
Jr 7/8 Eng & Comp Sci
John William Boich Public School, HDSB

N16 Motor Windings
Moses Le
Jr 7/8 Phys & Math Sci
Cathy Wever, HWDSB

N17 Bridges to the Breaking Point
Ada Loveless
Jr 7/8 Eng & Comp Sci
Trinity Christian School, IND

N18 CODIA Mark II
Ellie Xu
Sr 11/12 Eng & Comp Sci
Garth Webb Secondary School, HDSB

N19 The Greenhouse Effect
Laibaht Suhail
Jr 7/8 Earth & Env Sci
Al-Falah Islamic School, IND

P01 Natural Pools
Natalie Guay
Jr 7/8 Earth & Env Sci
St. Augustine, HWCDSB

P02 Rain or tap
Emma-Grace Zantingh
Jr 7/8 Life Sciences Non-Human Calvin Christian School (Hamilton), IND

P03 Saving On a Rainy Day: Building a Mini Electric Turbine
Demi Otubaga, Fola Ayibiowu
Int 9/10 Eng & Comp Sci
Hillfield Strathallan College, IND
PROJECT LISTINGS
(CONTINUED)

P04 The chemistry of cleaning
Evan Skye, Alyssa Lickers
Jr 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

P05 The Effect Of Different Solvents on The Freezing Point of Water
Zunaira Ali
Jr 7/8 Earth & Env Sci
Al-Falah Islamic School, IND

P06 Does Environmentally Friendly Equal Effective?
Bassant Ali
Jr 7/8 Phys & Math Sci
Alexander's Public School, HDSB

P07 No Water......No Problem!
A study on the effect of watering plants with laundry detergent.
Cale Symons
Jr 7/8 Life Sciences Non-Human
Trinity Christian School, IND

P08 How Wi-Fi Signals Affect Plant Growth
Owen Luongo
Jr 7/8 Earth & Env Sci
Pilgrim Wood Public School, HDSB

P09 Do plants talk?
Jack Kessig
Jr 7/8 Life Sciences Non-Human
W. H. Morden Public School, HDSB

P10 Its Getting Hot In Here
(How do different natural surfaces affect atmospheric temperatures)
Brielle Clause
Jr 7/8 Earth & Env Sci
Emily C. General Elementary School, SNS

P11 Edible pop
Colin Ott, Abraham Julien
Jr 7/8 Earth & Env Sci
Calvin Christian School (Hamilton), IND

P12 Are Eco-Friendly Detergents Less Toxic Than Regular, Everyday Detergents?
Aimen Shaikh, Areeb Iqbal
Sr 11/12 Earth & Env Sci
Glendale, HWDSB

P13 Mars
Kaysee Mitchell, Krysten Killen
Jr 7/8 Phys & Math Sci
Forest Trail Public School, HDSB

P14 The Effect of Different Ionic Compounds on Water Electrolysis
Simran Matharu
Jr 7/8 Phys & Math Sci
Ancaster Meadow, HWDSB

P15 Electric cars
Dhruv Patel, Marcus Jafrabad
Jr 7/8 Phys & Math Sci
Forest Trail Public School, HDSB

P16 Using food scraps to enrich soil and promote plant growth
Matthew Lawford, Zaid Dabbour
Jr 7/8 Earth & Env Sci
Alexander's Public School, HDSB

P17 Look What We've Done
Emmalea Thomas
Jr 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

P18 One Snip At A Time
Aiden Scheben, Steven Higgins
Jr 7/8 Earth & Env Sci
St. Augustine, HWCDSD

P19 Eco-Friendly Rusting Solutions through Redox Reactions Regarding Economic Sustainability
Christina Hanna
Sr 11/12 Phys & Math Sci
King's Christian Collegiate, IND
Q01 Liquids Becoming Gases - How Much Gas Does Your Favourite Beverage Produce?
Kirstyn Bax, Julie Reitsma
Jr 7/8 Phys & Math Sci
Calvin Christian School (Hamilton), IND

Q02 Planet or Plastic
Aashi Chaubey
Jr 7/8 Earth & Env Sci
W. H. Morden Public School, HDSB

Q03 Fertilizer and Algae: Mass Murderers
Rose Galante
Jr 7/8 Earth & Env Sci
Dalewood, HWDSB

Q04 Urine-Tricity
Jasalyn Jolly
Jr 7/8 Earth & Env Sci
Alexander's Public School, HDSB

Q05 Tectonic Plates
Josie Frasson
Jr 7/8 Earth & Env Sci
St. Augustine, HWCDSB

Q06 Edible Water Bottles
Sydney Daez
Jr 7/8 Phys & Math Sci
St. Joachim, HWCDSB

Q07 Water Saviors
Lily Hill, Alison Greene
Jr 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

Q08 Will It Be Clean
Luke Hinca, Jacob Hanna
Jr 7/8 Earth & Env Sci
St. Andrew Elementary School, HCDSB

Q09 The Effect of Different Sweeteners Substitutes in Baking
Tori Bakker
Jr 7/8 Phys & Math Sci
Calvin Christian School (Hamilton), IND

Q10 Filter This!
Zander Wythe, Mason Jamieson
Jr 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

Q11 Here Comes the Sun
Caitlyn Gratton, Ayla White
Jr 7/8 Phys & Math Sci
St. Joachim, HWCDSB

Q12 The Effect of Oil Spills on Aquatic Plants
Haris Bajwa
Jr 7/8 Earth & Env Sci
Al-Falah Islamic School, IND

Q13 Testing the Biodegradability of Bioplastics
Kristin Ellerbeck
Sr 11/12 Earth & Env Sci
King's Christian Collegiate, IND

Q14 Solar Ovens - A Hot Topic
Claire Babineau, Maya Kasprzyk
Jr 7/8 Phys & Math Sci
St. Joachim, HWCDSB

Q15 Plastic Delicacies
Mohammed Torkmani, Raphael Xu
Jr 7/8 Earth & Env Sci
Maple Grove Public School, HDSB

Q16 The Effects of Acid and Salt Pollutants on Plant Growth
Zainab Inam, Yujin Kim
Sr 11/12 Earth & Env Sci
Glendale, HWDSB

Q17 Oil Spills Cleaner Water Faster
Hannah McDonald, Monika Lekarczyk
Jr 7/8 Earth & Env Sci
Our Lady of Mount Carmel, HWCDSB
Q18 Kinetic Highways
Alexandru Atanasoaei, William Tremblay
Jr 7/8 Phys & Math Sci
Sts. Peter & Paul, HWCDSD

Q19 The Best Cleaning for The Environment.
John Ecclestone, Jack Guillemette
Jr 7/8 Earth & Env Sci
Pilgrim Wood Public School, HDSB

R02 One Bucket Of Oil Burned Is One Glacier Melted
Aleeza Wasi, Mahnoor Fazal
Jr 7/8 Earth & Env Sci
Escarpe View Public School, HDSB

R03 Can Mealworms Eat Styrofoam and Help Save the Environment?
Luka Cepuran, Thomas Satosek
Jr 7/8 Earth & Env Sci
St. Martin of Tours, HWCDSB

R04 Water Without a Bottle
Nour Hanna
Sr 11/12 Phys & Math Sci
King’s Christian Collegiate, IND

R05 The Future of Cleaner Cars
Téa Hope, Beth Dieroff
Jr 7/8 Earth & Env Sci
Aldershot Elementary, HDSB

R06 The Effects Of Green Roofs on The Environment
Lacey Swamy
Jr 7/8 Earth & Env Sci
Appleby College, IND

R07 Quicksand
Stephanie Buturajac, Nolan Olszewski
Jr 7/8 Earth & Env Sci
St. Luke, HWCDSD

R08 Sun In, Salt Out
Ryan Van Doedewaard, Matthew Kareas
Jr 7/8 Eng & Comp Sci
Oakville Christian School, IND

R09 Cooking with the Sun
Nahor Debesay
Jr 7/8 Earth & Env Sci
St. Margaret Mary, HWCDSB

R10 Biodegradable Plastic
Rabia Ikram, Shahla Eslami
Jr 7/8 Phys & Math Sci
Ancaster Meadow, HWDSB

R11 IKO: Constructing an environmentally-friendly solar powered phone charger
Isra Bashir
Jr 7/8 Eng & Comp Sci
Sir William Osler, HWDSB

R12 Carbon Footprint: China Imported Steel vs. Canadian Produced Steel
Ruhan Soni
Jr 7/8 Earth & Env Sci
Hillfield Strathallan College, IND

R13 Plants VS Oil: Can Plants Clean Up Oil Spills?
Shehwar Khan
Jr 7/8 Earth & Env Sci
Al-Falah Islamic School, IND

R14 The Acceleration of the Degradation of Polypropylene
Julia Xu
Int 9/10 Earth & Env Sci
White Oaks Secondary School, HDSB
<table>
<thead>
<tr>
<th>Project Title</th>
<th>Authors</th>
<th>Grade</th>
<th>Subject</th>
<th>School</th>
<th>District</th>
</tr>
</thead>
<tbody>
<tr>
<td>R15 Sure It's Pure?</td>
<td>Kathryn Whetstone</td>
<td>Jr 7/8</td>
<td>Earth &amp; Env Sci</td>
<td>Calvin Christian School (Hamilton), IN</td>
<td></td>
</tr>
<tr>
<td>R16 Enhancing Schools With Efficient Eco-Technology</td>
<td>Soujanya Kumar, Julie Ward</td>
<td>Jr 7/8</td>
<td>Earth &amp; Env Sci</td>
<td>John William Boich Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>R18 Where's The Proof?</td>
<td>Deborah-Peace Dada</td>
<td>Jr 7/8</td>
<td>Life Sciences Non-Human</td>
<td>Calvin Christian School (Hamilton), IN</td>
<td></td>
</tr>
<tr>
<td>R19 Plant Growth VS. Classical Music</td>
<td>Shivani Sivagurunathan</td>
<td>Jr 7/8</td>
<td>Life Sciences Non-Human</td>
<td>Tiger Jeet Singh Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S01 Photo-Spinach-Sis</td>
<td>Nathan Klosay, Rowan Burghall</td>
<td>Jr 7/8</td>
<td>Life Sciences Non-Human</td>
<td>Cathy Wever, HWSDB</td>
<td></td>
</tr>
<tr>
<td>S02 Germs at school: The Hidden Truth!</td>
<td>Aleesa Rizwan, Hana Gharib</td>
<td>Jr 7/8</td>
<td>Life Sciences Non-Human</td>
<td>Escarpment View Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S03 Glitching Growth</td>
<td>Maya Popowich, Alyssa Bashari</td>
<td>Jr 7/8</td>
<td>Life Sciences Non-Human</td>
<td>St. Mark Elementary School, HCDSD</td>
<td></td>
</tr>
<tr>
<td>S04 The Effect of Technology on Attention Span</td>
<td>Abigail Ruholand</td>
<td>Sr 11/12</td>
<td>Health Sci. Human</td>
<td>North Park Collegiate and Vocational School, GEDSB</td>
<td></td>
</tr>
<tr>
<td>S05 Are girls really smarter than boys?</td>
<td>Aman Ghauri, Manal Aquib</td>
<td>Jr 7/8</td>
<td>Health Sci. Human</td>
<td>Tiger Jeet Singh Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S06 Don't Just Sit There! Start Cellular Respiration!</td>
<td>Maria Akhtar, Aliza Saeed</td>
<td>Jr 7/8</td>
<td>Health Sci. Human</td>
<td>Escarpment View Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S07 Are Essential Oils Safe</td>
<td>Aydin Virani</td>
<td>Jr 7/8</td>
<td>Health Sci. Human</td>
<td>Escarpment View Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S09 LauCorail Sunscreen</td>
<td>Laura Busque</td>
<td>Jr 7/8</td>
<td>Eng &amp; Comp Sci</td>
<td>Alexander's Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S10 Do adults and children differ in their ability to detect genuine and fake smiles?</td>
<td>Priya Dath</td>
<td>Int 9/10</td>
<td>Health Sci. Human</td>
<td>Waterdown District Secondary School, HWDSB</td>
<td></td>
</tr>
<tr>
<td>S11 What is the most dangerous form of Distracted Driving?</td>
<td>Nyle Ahmad, Nikhil Khosla</td>
<td>Jr 7/8</td>
<td>Health Sci. Human</td>
<td>Joshua Creek Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S12 The Science Behind Bath Bombs</td>
<td>Ashley Zhao, Eileen Yan</td>
<td>Jr 7/8</td>
<td>Health Sci. Human</td>
<td>Escarpment View Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S14 Farm of the future!</td>
<td>Abraham Durrani</td>
<td>Sr 11/12</td>
<td>Health Sci. Human</td>
<td>North Park Collegiate and Vocational School, GEDSB</td>
<td></td>
</tr>
<tr>
<td>S15 Potato Battery - Can We Run The World on Spuds?</td>
<td>Sophie Mari, Diego Cuan-Celis</td>
<td>Jr 7/8</td>
<td>Phys &amp; Math Sci</td>
<td>St. Elizabeth Seton Elementary School, HCDSD</td>
<td></td>
</tr>
<tr>
<td>S18 Be EMF Safe</td>
<td>Aarush Chawla</td>
<td>Jr 7/8</td>
<td>Phys &amp; Math Sci</td>
<td>Joshua Creek Public School, HDSB</td>
<td></td>
</tr>
<tr>
<td>S20 The Solar Step</td>
<td>Tavian Augustus</td>
<td>Jr 7/8</td>
<td>Phys &amp; Math Sci</td>
<td>St. Augustine, HWCDSB</td>
<td></td>
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T01 Elevator to Everywhere
Monica Mahut
Sr 11/12 Eng & Comp Sci
M. M. Robinson High School, HDSB

T02 Artificial Intelligence is the future
Caleb Jung, Affan Abdin
Jr 7/8 Eng & Comp Sci
Escarpmont View Public School, HDSB

T03 A New App To Improve The Charging Efficiency Of Mobile Devices
Chen Qing
Int 9/10 Eng & Comp Sci
Hillfield Strathallan College, IND

T04 Keeping Roofs Road Safety One Snowflake At A Time
Andrew Probert
Int 9/10 Eng & Comp Sci
Oakville Trafalgar High School, HDSB

T05 Ultra hydrophobic materials
Valentina Rueda, Isabella Hernandez
Jr 7/8 Eng & Comp Sci
Forest Trail Public School, HDSB

T06 Roller Coaster Physics
Abdurrahman Faisal, Ammar Faisal
Jr 7/8 Eng & Comp Sci
Escarpmont View Public School, HDSB

T07 Coin Detection and Recognition in Images
Matthew Aharonian
Jr 7/8 Eng & Comp Sci
St. Andrew Elementary School, HCDSB

T08 How Secure is Your Password?
Hans-Martin Krishnan
Jr 7/8 Eng & Comp Sci
Oakville Christian School, IND
PROJECT LISTINGS
(CONTINUED)

T09 The Smart Windmill
Ojas Suras, Danyal Yousuf
Jr 7/8 Eng & Comp Sci
Escarplant View Public School, HDSB

T10 The All ’n One Pot 4 Plants
Jaden Campbell, Patryk Kopacz
Jr 7/8 Eng & Comp Sci
Sts. Peter & Paul, HWCDSB

T11 Secure !?! Are You Sure ?!?
Spencer Korol
Jr 7/8 Health Sci. Human
Trinity Christian School, IND

T12 Holograms
Misimi Sanni
Jr 7/8 Phys & Math Sci
Oakville Christian School, IND

T13 Artificial Intelligence & IoT to Reimagine the White Cane
Riya Karumanchi
Int 9/10 Eng & Comp Sci
White Oaks Secondary School, HDSB

T14 Automatic Attendance Using Facial Recognition
Mahir Sabharwal
Jr 7/8 Eng & Comp Sci
Joshua Creek Public School, HDSB

T15 S.I.B.S.
Daniella Iannuzzi, Alissa Guagliano
Jr 7/8 Eng & Comp Sci
St. Clare of Assisi, HWCDSB

T16 The Electric solenoid motor
Kristijan Maletic
Jr 7/8 Eng & Comp Sci
St. Andrew Elementary School, HCDSB

T17 Liar Liar Pants On Fire:
Measuring Galvanic Skin Response
Katie Cosgriffe
Jr 7/8 Eng & Comp Sci
Alexander’s Public School, HDSB

T18 RADbotics
Amara Damji, Jahnavi Malhotra
Jr 7/8 Eng & Comp Sci
Escarplant View Public School, HDSB

T19 Vision processing for astronomical applications
Tyler O’Dell
Sr 11/12 Eng & Comp Sci
Dr. Frank J. Hayden Secondary School, HDSB

T20 You 2.0
William Schwartz
Jr 7/8 Eng & Comp Sci
Alexander’s Public School, HDSB

T21 The School Bus Of Infinite Possibilities
Fawz Mehfil, Daniel Zhao
Jr 7/8 Eng & Comp Sci
Escarplant View Public School, HDSB
PROJECT LISTINGS
(CONTINUED)

T22 FeelSafe
Arjun Sarao, Jerron Zhang
Int 9/10 Eng & Comp Sci
Westdale Secondary School, HWDSB

T23 Tardigrade Mech: Using Boron Nitride Nanotubes for Space Radiation Protection
Arielle Ainabe
Sr 11/12 Phys & Math Sci
Garth Webb Secondary School, HDSB

T24 Plastic Bottles or Plastic Water?
Ananya Dhillon
Jr 7/8 Phys & Math Sci
Escarpment View Public School, HDSB

T25 Magnetic Levitation
Hailey Israel
Jr 7/8 Phys & Math Sci
St. Mary Elementary School, HCDSB

U02 Need some TLC? Tigernut Liquid Coagulant: An undiscovered biocoagulant for water turbidity reduction
Sabrina Mogus
Int 9/10 Earth & Env Sci
White Oaks Secondary School, HDSB

U03 Humidity VS Wood
Joanna Wang
Jr 7/8 Earth & Env Sci
Dalewood, HWDSB

U04 Salt Water: The Solution to Pollution
Claire Jung, Sun Min Choi
Jr 7/8 Eng & Comp Sci
Forest Trail Public School, HDSB

U05 The Water Battery
Rohan Naik
Jr 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

U06 Bioplastic
Ryedan Annett, Charles Williams
Jr 7/8 Earth & Env Sci
Emily C. General Elementary School, SNS

U07 Can we combine Flying Wing and Machine Learning Technology for quicker emergencies response?
Gyu Tae Bae
Int 9/10 Eng & Comp Sci
White Oaks Secondary School, HDSB

U08 HealthNet: Revolutionizing Health Care with Data Aggregation and Convolutional Neural Networks
Jacob Meleka
Sr 11/12 Eng & Comp Sci
North Park Collegiate and Vocational School, GEDSB

U09 An app that can help diagnose, monitor, reduce or find help for those dealing with depression.
Alicia Ruetas
Int 9/10 Eng & Comp Sci
Robert Bateman High School, HDSB

U10 Using B.C.I. And A.I. For Emotion Detection For Mental Health Applications
Jeffrey Klinck
Jr 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

U11 What are Proximity Sensors?
Hannah Lee
Jr 7/8 Eng & Comp Sci
Oakville Christian School, IND

U12 Hot is Cool
Stefanie Mahut
Int 9/10 Eng & Comp Sci
M. M. Robinson High School, HDSB

U13 Light Up Silent Lives
Anajanaa Vimalathas, Molly Jin
Jr 7/8 Eng & Comp Sci
Tiger Jeet Singh Public School, HDSB

U14 Episodic Future Thinking (EFT) App
Justin Semelhago, Hassaan Inayatali
Sr 11/12 Eng & Comp Sci
Hillfield Strathallan College, IND

U15 Smart Shower
Shrijah Narendiran
Jr 7/8 Eng & Comp Sci
Alexander’s Public School, HDSB
SPECIAL AWARDS – 2019

Special Awards are given by organizations and groups to recognize deserving projects that deal with topics of interest to the donor.

ArcelorMittal Dofasco Awards

**Central Trades & Services Department Award**
Prize: $100
Criteria: Project that best displays the use of scientific principles in applying technology for the betterment of people or machines.

**Chemical Testing Award**
Prize: $100
Criteria: Use of chemical testing and/or chemical principles to solve a technical problem.

**Commercial Department Award**
Prize: $100
Criteria: Commercial and business planning tools in developing a potentially new or improved commercial product.

**Engineering Award**
Prize: $100
Criteria: Engineering & Maintenance Technology principles and design to solve a technical problem.

**Environment Award**
Prize: $100
Criteria: Physics, chemistry, or engineering to explore or solve a technical problem associated with environmental issues.

**Global R&D Hamilton Award for Outstanding Research**
Prize: $100
Criteria: Project that best displays investigative research & scientific principles to explore or solve a technical problem.

**Global R&D Hamilton Award for Technology Application**
Prize: $100
Criteria: Project that best displays the innovative application of materials, products, processes or design principles.

**Hot Mill Award**
Prize: $100
Criteria: Creative principles and design to solve a manufacturing or process problem.

**Human Resources Training & Development Award**
Prize: $100
Criteria: Teaching and training techniques in explaining or exploring a technical problem.

**Information Systems Award**
Prize: $100
Criteria: Information Systems and design to solve a technical problem.

**Ironmaking Award**
Prize: $100
Criteria: Project that best displays the use of metallurgical or material science principles to solve a technical problem.

**Material Handling & Logistics Department Award**
Prize: $100
Criteria: Project that best displays the use of scientific principles in exploring or solving a problem related to material conveyance, transportation or logistics.

**Medical Department Award**
Prize: $100
Criteria: Scientific principles in exploring or solving a problem related to human health issues.
SPECIAL AWARDS (Continued)

ArcelorMittal Dofasco Awards (continued)

Process Automation Award
Prize: $100
Criteria: Project best displaying the use of process automation principles and design to solve a technical problem.

Product Development Business Process Award
Prize: $100
Criteria: Product Development principles and design in developing a new consumer product with commercial potential.

Quality Systems Award
Prize: $100
Criteria: Quality Systems principles and design to solve a technical problem.

Steelmaking Award
Prize: $100
Criteria: Engineering and Materials Science principles to solve a technical problem.

Transforming Tomorrow Award
Prize: $1,000
Criteria: A project displaying rigorous scientific or engineering methods that investigates steelmaking processes or steel products.

Artistically Inspired Display Awards
Prize: Two awards of $50 each
Criteria: To the most artistically inspired display.

Association for Iron & Steel Technology Northern Chapter Awards
Prize: Two awards of $100 each
Criteria: For outstanding projects related to one of the following fields: metallurgy, materials science, chemical, electrical, mechanical, industrial, environmental, civil and computer engineering.

Canadian Institute of Mining, Metallurgy and Petroleum (Hamilton Branch) Awards
Prize: Two awards of $100 each
Criteria: Outstanding projects relating to mining, metallurgy and petroleum, any level.

Canadian Nuclear Society (Golden Horseshoe Branch) Awards
Prize: Two awards of $125 each for intermediate or senior projects and two awards of $75 each for junior projects.
Criteria: Projects relating to nuclear science and engineering, energy research, or climate sciences.

Chairman's Award
Prize: $100
Criteria: A project that exhibits good scientific, engineering or mathematical thought, but did not receive a merit award or any special awards.

Chemical Institute of Canada - Hamilton Section Awards
Prize: Three awards of $100 each
Criteria: Projects relating to chemistry, chemical engineering, or chemical technology.

Conservation Halton Awards
Prize: Two awards of $100 each
Criteria: Projects that contribute to environmental research, protection, conservation, restoration or awareness by Halton students.
SPECIAL AWARDS (Continued)

Dillon Consulting Awards

Science and Engineering Award
Prize: $250
Criteria: Project showing excellence in science and/or engineering.

Biological Sciences Award
Prize: $250
Criteria: Project showing excellence in biological sciences.

Dr. Colin J.L. Lock Memorial Chemistry Award
Prize: $100
Criteria: A project demonstrating the best application of chemistry.

Dr. Laura Blew Social Sciences Awards
Prize: Two awards of $50 each
Criteria: Best two social science based projects.

Dr. M. Doyle Biology Award
Prize: $250, a plaque, and a trophy for the winner’s school
Criteria: Best biology project.

Dr. Nicola Simmons Award in Cognition Studies
Prize: $100
Criteria: An exemplary project in cognition studies.

Doris Casey and Gwen Nicolls Disability Solutions Awards
Prize: Two awards of $100 each
Criteria: Most innovative and creative technical solutions focused on assisting individuals to overcome or compensate for physical or cognitive disabilities.

Electrical Construction Association of Hamilton Awards
Prize: Two awards of $250 each
Criteria: Projects displaying the best and safest use of electricity in the most creative manner.

Environmental Inspiration Award
Prize: $250
Criteria: The best environmental project that addresses an environmental problem in an inspirational/innovative way.

Farncombe Family Digestive Health Research Awards
Prize: Two awards of $250 each
Criteria: Projects that explore digestive health, related diseases or general family nutrition through experimentation or in depth literature.

Gowling WLG Innovation Awards

Grand Winner
Prize: $300 and a complimentary consultation with a patent or trademark agent at the Gowling WLG Hamilton office.
Criteria: Best project demonstrating potentially patentable subject matter.

Runner Up
Prize: $200
Criteria: An excellent project demonstrating potentially patentable subject matter.

Hamilton Academy of Dentistry Awards
Prize: 1st $250, 2nd $150, 3rd 100
Criteria: Intermediate or senior projects related to dentistry in general; to one specific area of dentistry; or related to oral hard & soft tissues specifically; to some aspect of the delivery of dentistry to the general (or specific) population; or an aspect related to prevention of dental disease.
SPECIAL AWARDS (Continued)

Hamilton Association da Vinci Award
Prize: $250
Criteria: Project that best combines personal initiative and creativity with a sound, demonstrated understanding of the scientific method.

Hamilton Chamber of Commerce Innovation Awards
Prize: 1st $250, 2nd $150, 3rd $100
Criteria: The most deserving projects by students from Hamilton with potential commercial applications focused on improving our local environment, communities or quality of life.

Hamilton Wentworth Occasional Teacher Awards
Environment and Education Award
Prize: $50
Criteria: Junior project that most effectively educates others about an environmental issue.

Healthy Lifestyles Award
Prize: $50
Criteria: Junior project that most effectively educates others regarding the role of nutrition and/or exercise in maintaining a healthy lifestyle.

Presentation and Aesthetics Award
Prize: $50
Criteria: Junior project that demonstrates a high level of visual appeal, creativity, and overall quality of presentation.

Hillfield Strathallan College Awards of Excellence
Life Sciences Award
Prize: $100
Criteria: Junior project that best displays excellence in life sciences.

Physical Sciences Award
Prize: $100
Criteria: Intermediate project that best demonstrates an understanding of the scientific process in the physical sciences.

Innovation Award
Prize: $100
Criteria: Senior project that best displays innovation related to environmental sciences or biotechnology.

Indigenous Peoples of Canada Scientific Study Awards
Prize: 1st $140, 2nd $80, 3rd $80
Criteria: Projects demonstrating the application of established scientific methods to topics relevant to the culture, heritage or issues of the indigenous peoples of Canada.

IEEE (Institute of Electrical and Electronic Engineers) Hamilton Section Awards
Prize: Two awards of $100 each
Criteria: Best use of electronics in a science or engineering project.
SPECIAL AWARDS (Continued)

International Science & Engineering Affiliated Fair Awards

Prize: Certificates
Criteria: Deserving intermediate or senior projects related to topics of interest to the following organizations:

**American Meteorological Society**
2 awards for creative scientific endeavour in the areas of atmospheric and related oceanic and hydrologic sciences.

**American Psychological Association**
Outstanding research in psychological science in the category of behavioural and social sciences or any category related to psychology.

**ASM Materials Education Foundation Award**
The best materials engineering project.

**Association for Women Geoscientists**
A project by female(s) exemplifying a high standard of innovation and scientific excellence in the geosciences.

**Intel Excellence in Computer Science**
Additional Award: US$200
Best project in computer science.

**MU Alpha Theta**
Most challenging, original, thorough and creative investigation of a problem involving mathematics.

**Ricoh USA, Inc.**
Outstanding project that addresses issues of environmental responsibility and sustainable development.

**Society for In Vitro Biology**
Most outstanding Grade 11 project exhibiting in the areas of plant or animal in vitro biology or tissue culture.

**Yale Science & Engineering Association**
Most outstanding Grade 11 project in computer science, engineering, physics or chemistry.

**James A Winger Award, sponsored by the Hamilton Amateur Astronomers**
Prize: $200
Criteria: Best project in demonstrating an understanding of a topic related to astronomy or physics.

**John W. Howard Materials Research Award**
Prize: $100
Criteria: A project demonstrating innovation in engineering materials, especially concrete.

**Laurentian Chapter of SETAC Award**
Prize: Two awards of $100 each
Criteria: Best projects and presentations on a topic related to environmental toxicology, chemistry, pollution, contamination, remediation or environmental protection.

**Mahut-Brent Award for Women in Science and Engineering**
Prize: $100 and a certificate
Criteria: An outstanding project by a female student that demonstrates an excellent application of scientific thought and creativity towards a subject matter that the participant is passionate about.
SPECIAL AWARDS (Continued)

McMaster University Awards
Department of Chemistry and Chemical Biology Award
Prize: $100
Criteria: An outstanding intermediate or senior project connected to chemistry or chemical biology.

Department of Chemical Engineering & Chemical Engineering Club Award
Prize: $250
Criteria: An outstanding intermediate or senior project demonstrating aspects of chemical engineering, particularly in the fields of biomaterials, polymer science, process systems design, or water and energy systems.

Department of Materials Science and Engineering
Prize: $100 and a trophy
Criteria: Three awards, one at each level, to projects displaying the best innovative use, design, or testing of materials.

LEAP Academy Female Award of Innovation
Prize: Free registration to LEAP summer program for one session (July 2-12, 2019) valued at $750.
Criteria: An intermediate project of a female participant that demonstrates creativity and originality. Prize must be claimed by April 15, 2019.

School of Geography and Earth Sciences Awards
Earth and Environmental Sciences Award
Prize: $100
Criteria: Outstanding project in earth science or environmental science.

Geography Award
Prize: $100
Criteria: Outstanding project in geography or social science.

Venture Award of Innovation
Prize: Free registration to Engineering & Science Week 1 (July 2-5, 2019) valued at $270.
Criteria: A project by a female grade 7 participant that demonstrates creativity and originality. Prize must be claimed by April 15, 2019.
SPECIAL AWARDS (Continued)

Mechanical Contractors Association of Hamilton Niagara Award
Prize: $250
Criteria: Best engineering project at the intermediate or senior level.

Mohawk College Awards
Building & Construction Sciences Awards
Building Sciences Award
Prize: $50
Criteria: Project related to building sciences, building materials, or energy conservation in structures.
Civil Engineering Award
Prize: $50
Criteria: Project related to the field of civil engineering.
Transportation Engineering Award
Prize: $50
Criteria: Project related to planning, design, or operation of any transportation mode or facility.

Computer Science & Information Technology Excellence Awards
Prize: Three awards of $50 each
Criteria: Projects that demonstrate a thorough understanding of computer application and design in today's world.

Electrical Engineering Technology Awards
Computer Engineering Technology Award
Prize: $50
Criteria: A deserving project in computer engineering technology.
Electrical Engineering Award
Prize: $50
Criteria: A deserving project in electrical engineering studies.
Energy Systems Award
Prize: $50
Criteria: A deserving project in energy systems.

Mathematics Awards
Prize: Two awards of $50 each, one at the junior level and one at the senior level.
Criteria: Deserving projects in the category of mathematics or statistics.

Nelson Steel Awards
Prize: Two awards of $100 each
Criteria: Outstanding junior projects related to two of the following fields: steel, environmental or chemistry.

New Health Scientist Award
Prize: $50
Criteria: A worthy junior project showing good potential for improving the health of our community.

What kind of dog does a Chemist have?
A Lab!
SPECIAL AWARDS (Continued)

Nikola Tesla Innovation Awards
Prize: Gold $250, Silver $150, Bronze $100
Criteria: Projects that best display the most innovative application of the body of knowledge associated with Nikola Tesla's work, and/or acknowledgement in the display of Nikola Tesla's contribution by way of his work and inventions.

Nikola Tesla Honourable Mention Awards
Prize: Twenty awards of $50 each
Criteria: Projects with electricity as a key element.

Oakvillegreen Conservation Association Award for the Environment
Prize: $100
Criteria: A project that best promotes understanding and stewardship of the environment.

Primary Fluid Systems Awards
Prize: Twenty awards of $100 each
Criteria: Outstanding projects in earth and environmental, engineering or physical sciences.

Procor Engineering Awards
Prize: Junior $50, Intermediate $100, Senior $150
Criteria: Excellent engineering projects.

Professional Engineers of Ontario - Hamilton/Burlington Chapter Awards
Prize: 1st $250, 2nd $150, 3rd $100
Criteria: Deserving, exceptional, outstanding projects in engineering at any level.

Professional Engineers Ontario - Oakville Chapter Awards
Prize: Three awards of $200 each
Criteria: Deserving engineering projects - one at each level.

The Research Institute at St. Joe's Hamilton, Health Research Awards
Prize: Two $100 awards at the intermediate level, and two $50 awards at the junior level
Criteria: Outstanding projects that use strong scientific principles in exploring or solving a problem related to human health issues and communicate the results through an effective visual display.
SPECIAL AWARDS (Continued)

Rotary Club of Hamilton-East Wentworth Awards
Prize: 1st $250, 2nd $150, 3rd $100
Criteria: Best three projects from schools situated in the Hamilton core displaying high academic achievement and striving to excel in science and technology.

Royal Botanical Gardens Award
Prize: $100 gift certificate from the RBG shop plus a 1-year RBG family membership
Criteria: Best project in plant or environmental sciences.

Society of Tribologists & Lubrication Engineers – Hamilton Chapter
Prize: Two awards of $250 each
Criteria: Projects that utilize the principles of tribology, (friction, wear and lubrication), to solve a technical problem.

SPIE - The International Society for Optics & Photonics Awards
Prize: 1st US$250, 2nd: US$150, 3rd US$100; prize to be requested by the winners after the fair
Criteria: Best projects in optics or photonics where students apply optics or photonics technology, techniques or principles to his/her project.

Talkit.ca Computer Engineering Awards
Prize: 1st $100, 2nd $50
Criteria: For outstanding projects using computer electronics or software.

Ted Rogers Innovation Award
Prize: $100, a T-Shirt and a certificate
Criteria: For a project that best demonstrates commercial potential.

Water Environment Association of Ontario Award
Prize: $100
Criteria: For a project focused on innovative ideas for preserving and/or enhancing Ontario’s water environment.

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To all Participants and Award Winners of BASEF

Well done!

What is tribology?
Tribology is the study of science and engineering of interacting surfaces in relative motion. It includes the study and application of the principles of friction, lubrication and wear. Tribology is a branch of mechanical engineering and materials science.
THREE YOUNG WOMEN AND THE SCIENCE FAIR THAT CHANGED THEIR LIVES!

BASEF is pleased to announce the creation of 2 new alumni-sponsored Awards this year! Full bio and stories for these alumni are available on our website at www.basef.ca.

MAHUT-BRENT AWARD FOR WOMEN IN SCIENCE AND ENGINEERING

Awarded for an outstanding project by a female student that demonstrates an excellent application of scientific thought and creativity towards a subject matter that the participant is passionate about. Prize is $100, a giant microbe and a certificate.

These two alumni, who met at BASEF, combined their love of science and engineering into this award to inspire young women to explore science and engineering careers.

I love BASEF because it gave me the opportunity to grow as a person. There is something very special about getting to share the product of your hard work and passion with others who also value the STEM fields. BASEF is the reason that I am the person I am today—a curious, motivated, ambitious and outgoing engineering and bioanthro university student. Even when my time as a BASEF student ended, I knew that my journey with BASEF was not over. I have judged projects and now I am so incredibly happy to be co-sponsoring a new Special Award this year with one of my best friends, Caroline Mahut. I was inspired to give back because I know there are girls out there who are much like I was at the advent of my science fair career, being incredibly passionate about science, and ready to learn new things. If I could encourage even one girl to keep up the great work in STEM and possibly pursue it as a career, it would be a great honour for me.

My time as a BASEF student was the best six years of my life! – Katie Brent

As a 5-time BASEF and Canada-Wide Science Fair participant, I can guarantee you that taking part in a science fair is an opportunity you do not want to miss. The first time you participate in BASEF, you are overwhelmed by the aura of curiosity and discovery about the room. Over the years during which I prepared projects for BASEF, I noticed astronomical improvements in my writing, presenting, research and problem solving skills. However, the most important thing that BASEF gave me was an amazing community of like-minded students, who live and breathe the STEM lifestyle. This taught me that BASEF is a pathway to a new lifestyle in which everything can be challenged or improved, and no question can go unanswered. It was through working on BASEF projects and meeting various professionals at the fair over the years that contributed to where I am today: a second year Mechanical Engineering student at McMaster University. Katie and I are honoured to be sponsoring this new Special Award together to encourage STEM participation at BASEF of female engineering projects.

BASEF is not just a Science Fair; it is a glimpse into the future of our community.
– Caroline Mahut
ENVIRONMENTAL INSPIRATION AWARD

Awarded to the best environmental project that addresses an environmental problem in an inspirational/innovative way. Prize: $250

Isabella O’Brien
This young woman loves the environment and wants everyone to know it!

Since primary school, science fair had always fascinated me. When I made it to BASEF in grade 7, I was so excited. It was incredible to be with hundreds of students and see all the brainpower on display from kids just like me. Winning the opportunity to attend the 2014 Canada Wide Science Fair (CWSF) with Team BASEF was the experience of a lifetime. I had the most amazing mentors, and the team members have become lifelong friends. I was incredibly lucky to win a gold at CWSF and the Environment Challenge Award that year. In high school in 2016, I entered BASEF again and that year, much to my surprise, I won the top prize – ArcelorMittal Dofasco Pinnacle Award for Best-in-Fair! A second trip to CWSF, where I won a gold medal and the Environment Challenge award again.

Now as I finish high school and go to university, I felt it was important for me to give back to those who have supported me and my environmental work, and BASEF is at the top of that list. I am excited to be offering my new BASEF Special Award. My hope is that it will ignite a spark in students to consider doing an environmental science fair project that specifically looks at trying to solve an environmental issue. I look forward to seeing and judging these inspiring environmental projects.

What I hadn’t realized was how being a part of BASEF and experiencing all the fantastic opportunities offered through BASEF would change my life. – Isabella O’Brien

Happy 60th BASEF!
MARK YOUR CALENDARS & SAVE THE DATE
Next year will be BASEF’s 60th anniversary!
Please participate, sponsor and join in the celebrations!
Mohawk College March 25-31, 2020
Science Strong since 1960
BASEF INSPIRATION AWARDS

The “BASEF Inspiration Awards” generate interest and encourage participation in the Fair.

BASEF Inspiration Teacher Awards
Prize: Up to a maximum of 9 awards of $500 each
Criteria: For teachers of schools new* to BASEF. The teacher must have two or more projects displayed and judged at BASEF. The award is to be used in the classroom at the winning teacher’s discretion. The cheque will be sent to the teacher after the BASEF Award ceremony. *Schools that have not had projects in BASEF for at least 5 years.

BASEF Inspiration Student Awards
Prize: A minimum of 10 awards of $500 each
Criteria: Top projects based on merit judging marks that win $250 or less in other prizes and have not previously won a BASEF 500 award.

We’re working hard to be your energy ally

At Alectra Utilities, we’re continuously investing in electrical infrastructure improvements that support growth and provide safe, reliable and sustainable power for homes and businesses in the communities we serve.

We’re committed to delivering value, service and reliability to you. Discover the possibilities at alectrautilities.com
SCHOLARSHIPS & INTERNSHIP

SCHOLARSHIPS

McMaster University Faculty of Engineering Entrance Awards
Prize: Five $1,000 tuition awards, to be redeemed upon acceptance of admission to the Faculty of Engineering. (Pair projects will split the award).
Criteria: Projects demonstrating excellence in Science, Technology, Engineering or Math.

McMaster University Women in Engineering Entrance Awards
Prize: Two $1,000 tuition awards, to be redeemed upon acceptance of admission to the Faculty of Engineering. (Pair projects will split the award).
Criteria: Projects led by female students that demonstrate excellence in Science, Technology, Engineering or Math.

University of Ottawa Entrance Scholarship
Prize: One $1,000 entrance scholarship applied to tuition fees upon being accepted into and registered in an undergraduate program in the Faculties of Engineering or Science at the University of Ottawa. (Pair projects will split the award).
Criteria: The most deserving senior project.

Hillfield Strathallan College Entrance Scholarship Award
Prize: One $5,000 entrance scholarship toward tuition fees, to be redeemed upon acceptance as a full-time senior school student entering Hillfield Strathallan College in any of grades 9 to 11 for the 2019-20 academic year. (Will be awarded to both students in a pair project – maximum $10,000 value).
Criteria: The best project demonstrating excellence in scientific learning with joy and purpose.

Mohawk College and Sheridan College – Award of Excellence Tuition Scholarships
Prize: Mohawk College and Sheridan College will provide a $1,000 entrance award. The scholarship may be used toward first year tuition upon the recipients’ acceptance and registration in any full-time program at either Mohawk College or Sheridan College. If multiple scholarships are accumulated over more than one year, only one of these scholarships may be used.
Criteria: All students earning BASEF2019 Merit Award Medals (Gold, Silver, Bronze) will win this scholarship.

INTERNSHIP

Michael G. DeGroote Institute for Infectious Disease Research Internship Award
Prize: A 6-week paid summer internship as a research assistant in a laboratory at the Michael G. DeGroote IIDR at McMaster University, valued at $3,000. Two runner-ups will be identified and given a certificate.
Criteria: Best senior student project in infectious disease, drug discovery or human health.
Discover McMaster

Founded in 1887, McMaster University is one of only four Canadian universities consistently ranked in the Top 100 in the world.

A medical-doctoral, research-intensive university, McMaster is dedicated to teaching, learning and service. In the 1960s, we pioneered the problem-based approach to learning that came to be known around the world as "the McMaster model".

Home to more than 70 research centres and institutes, McMaster is comprised of six faculties: The DeGroote School of Business, and the Faculties of Engineering, Health Sciences, Humanities, Science, and Social Sciences.

With a total full-time student population of close to 28,000, McMaster welcomes students from 98 countries as well as Canada.

Come.. Discover us at
www.mcmaster.ca
“Somewhere, something incredible is waiting to be known”

Carl Sagan

Primary Fluid Systems Inc.
www.primaryfluid.com

Proud sponsor of BASEF’s Merit Awards since 2004.
MERIT AWARDS

Sponsored by Primary Fluid Systems Inc.

Merit Awards recognize the tremendous amount of thought and effort that has gone into the projects entered in the Bay Area Science and Engineering Fair. They are the result of an extensive judging process undertaken by over 175 independent judging volunteers who have come forward from educational institutions, local government organizations, business and industry in our regions. All participants in the Bay Area Science and Engineering Fair are eligible to win Merit Awards.

The Awards are issued to projects that meet the following criteria:

For Junior, Intermediate and Senior levels in:

- Health Sciences (Human)
- Life Sciences (Non-Human)
- Physical and Mathematical Sciences
- Biotechnology
- Engineering and Computing Sciences
- Earth & Environmental Sciences

Scoring:

- over 90% earns Gold medal & cash award
- over 80% earns Silver medal & cash award
- over 75% earns Bronze medal & cash award
Thanks to our sponsors we’re going places!

2018 National & International Science Fair Competitors

The BASEF Students and Volunteers gratefully acknowledge the support of all of our sponsors

Images courtesy of Lifetouch Canada

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Best Wishes to all BASEF 2019 Participants

Proudly outfitting TEAM BASEF at the
Canada Wide Science Fair and the Intel International Science & Engineering Fair
GRAND PRIZE AWARDS

Winners of Grand Awards have designed, researched and presented excellent projects.

ARCELORMITTAL DOFASCO PINNACLE AWARDS

BASEF’s Pinnacle Awards are presented to each of the top three projects in the fair. These awards are based on the project’s Merit Award score. Each winner receives an engraved plaque; trophies are awarded to the winner’s schools.

Best-in-Fair $1,000  
2nd Best-in-Fair $800  
3rd Best-in-Fair $500

DRS. RANJAN SUR AND MONALISA SUR AWARD

Best Intermediate or Senior project at the fair, a plaque to the winner’s school.

ROY MIDDLETON MEMORIAL AWARD

Best Junior project at the fair, a plaque to the winner’s school.

HERB GILDEA MEMORIAL TROPHY

Trophy is awarded to the secondary school accumulating the most points. Points are earned from the number of projects entered from the Intermediate and Senior levels of each school and those projects earning Gold, Silver, Bronze and Honourable Mention Merit Awards.

BASEF COMMITTEE TROPHY

Trophy is awarded to the elementary school accumulating the most points. Points are earned from the number projects entered from the Junior level of each school and those projects earning Gold, Silver, Bronze and Honourable Mention Merit Awards.
GRAND PRIZE TRIP AWARDS

INTEL INTERNATIONAL SCIENCE & ENGINEERING FAIR TRIP AWARDS

Advancement to the 2019 Intel International Science & Engineering Fair, to be held in Phoenix, Arizona from May 12 to 17, 2019. All trip expenses paid.

Up to 4 projects (depending on funding level) will be chosen from excellent exhibits at the secondary school (Int & Sr) level.

Winners will be chosen from those high school entrants that declared they were able to travel into the USA (Canadian citizenship or landed immigrant status, with valid passport in-hand) as part of the BASEF registration process.

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CANADA WIDE SCIENCE FAIR TRIP AWARDS

Advancement to the 2019 Canada Wide Science Fair (all trip expenses paid), to be held in Fredericton, New Brunswick from May 11 to 17, 2019.

Up to 17 students who have presented excellent projects will be chosen (dependent on funding level).

All projects entered in BASEF2019 are eligible.

Sponsors are
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Kathy
Mechanical Engineering Technology student

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