

BASEF 2016

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ArcelorMittal
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56th Annual Bay Area
Science & Engineering Fair
@Mohawk College
March 30 – April 5, 2016

Diamond Sponsors
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BASEF

**Big ideas.
Infinite possibilities.**

Mohawk College Proud Host of the 56th Annual BASEF



Welcome to the
2016 Bay Area
Science and
Engineering Fair at
Mohawk College.

As a college with a reputation for academic excellence in health and technology, we are proud to once again host one of Canada's largest and longest-running science and engineering fairs.

Congratulations to all the students who have logged many hours on your research projects. Judging by the calibre of the projects submitted every year, our future is in very capable hands. Many students who've competed in BASEF have gone on to win national and international competitions and have gone on to make their mark at colleges and universities.

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.

Congratulations again to all of the students participating in this year's BASEF. 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

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Cover Image: Deconvolution image of U2OS cells stained with fluorescent phalloidin taken on a confocal microscope. By: Howard Vindin, 17 July 2013, CC license: attribution, https://commons.wikimedia.org/wiki/File:Phalloidin_staining_of_actin_filaments.tif

BASEF 2016 Official Program printed courtesy of ArcelorMittal Dofasco G.P.

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A MESSAGE FROM THE 2016 BASEF CO-CHAIRS

Congratulations to all the participants competing at the 2016 Bay Area Science and Engineering Fair, BASEF's 56th 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 1960s, the scientific community has witnessed the moon landing and discovery of water on Mars; the cloning of Dolly the sheep and the first face transplant; the inception of telesurgery and discovery of a vaccine for ebola; the discovery of the first pulsar and high temperature superconductivity; and the first experimental evidence of the Big Bang theory ... just to name a few. What discoveries will be made in the next 56 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 designed to promote additional interest and participation in the Fair.

ArcelorMittal Dofasco has returned as BASEF's title sponsor for the tenth year, with more generous funding than ever. We are thankful for their ongoing commitment to science, engineering, technology and mathematics through BASEF. BASEF 2016 would not be possible without this support.

Our three Diamond Level sponsors are also key to the success of this year's Fair:

- Primary Fluid Systems Inc. have sponsored BASEF at the Diamond level for several years. Merit Awards winners will recognize the Primary Fluid Systems Inc. name on their Gold, Silver and Bronze award certificates for years to come.
- 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.
- The Leggat Auto Group is a new BASEF sponsor this year, joining us at the Diamond level. In addition to generous monetary support, this sponsorship provides BASEF with media expertise and support to help promote science, technology and engineering in youth.

Together with over 50 other sponsors and benefactors, as well as over 50 Special Awards donors, our premier sponsors make it possible for BASEF's students to excel in science and engineering and 'to encourage young people in science and engineering', as is our mission statement.

The BASEF 500 Awards stand out as unique among the Special Awards. Funded by a generous donor who wants to generate interest and encourage participation in the Fair, eighteen \$500 awards will be awarded to projects this year, in addition to \$250 awards to the best two new schools.

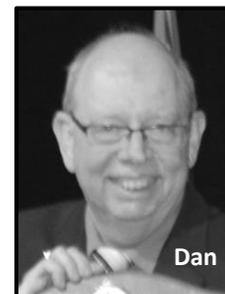
This year the total value of merit awards, special awards, scholarships and trip awards is expected to top \$200,000.

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 BASEF 2016 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 5th at 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.

Helen Barton, Dan Bowman and Ingrid Munson
Co- Chairs, BASEF 2016.



BASEF 2016 ORGANIZING COMMITTEE

MOHAWK COLLEGE, BASEF 2016 HOST

President, Ron McKerlie
V.P. Academic, Christine Bradaric-Baus

CO-CHAIRS

Helen Barton, Dan Bowman and Ingrid Munson

PAST CHAIR

Ray Kranyak

TREASURER

Eleanor O'Flynn, C.P.A., C.A.

REGISTRAR

George Geczy; Assistant: Rob Lenjosek

JUDGE IN CHIEF

Neil Manmohan; Assistant: George Geczy

SCIENTIFIC REVIEW

Ming Chong (Co-Chair), Dan Bowman (Co-Chair),
George Geczy (Co-Chair), Neil Manmohan (Judge in Chief),
Allison Boyd, Dr. Robert Brown, Cathy Hayman,
Dr. Mark Inman, Rob Lenjosek, Donna Stack-Durward

SPECIAL AWARDS COORDINATION

Helen Barton, Jim Casey, Eleanor O'Flynn,
Cathy Hayman, David Reed

SAFETY

Neil Manmohan; Assistant: Linda Millar

FUNDRAISING

Sue Olynyk (Chair), Mike McNally, George Geczy,
Jack Mogus, Cathy Hayman, Helen Martin

STUDENT ACTIVITIES

Kevin Hunt

CANADA-WIDE & INTERNATIONAL CHAPERONES

CWSF: Dan Bowman (Lead), Dana Bee,
George Geczy, Ingrid Munson
IISF: Ming Chong (Fair Director), Cathy Hayman

INFORMATION SYSTEMS

George Geczy, Gerard Chiasson

PHOTOGRAPHY & GRAPHICS

Wayne Bowdish

MARKETING AND PUBLICITY

Helen Barton (Chair), Wayne Bowdish, Gerard Chiasson,
George Geczy, Adree Khondker, Glen Whitwell

MOHAWK COLLEGE REPRESENTATIVES

Dana Jacobs, Dusty Noble

MOHAWK STUDENT ASSOCIATION

Jessica Hummel, Melissa Denomme

SPONSOR REPRESENTATIVE

Sandy Walker

FACILITIES

David Reed; Assisting: Dan Bowman, Dana Bee

"CHAMPIONS OF BASEF"

Ola Lunyk Child (Chair), Linda Hazelden, Ruth Mullin

OUTREACH

Allison Boyd, Ming Chong, George Geczy, Jack Mogus,
Linda Hazelden, Linda Millar, Glen Whitwell

SPECIAL PROJECTS & YES INITIATIVE

Vanessa Scanga, Ryan Buist

VOLUNTEER RECRUITMENT AND COORDINATION

Dana Bee, Glen Whitwell

OFFICIAL FAIR PROGRAM

Lisa Camara

FOOD PLANNING

Dan Prowse

DISTRICT SCHOOL BOARD ADVISORS

HCDSB: Shari Typer, Lorraine Boulos
HDSB: Ingrid Munson, Tanya Williamson
HWCDDB: Morris Hucal, Greg Tabone
HWDSB: Sandra Chow
Six Nations (INAC): Alex Randall

COMMITTEE MEMBERS AT LARGE

Antonella Giancarlo, Julianna Giancarlo

STUDENT ADVISORS

Catharine Bowman, Jack Mogus

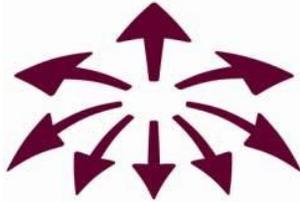
BASEF BURSARY-BACKBOARD PILOT PROGRAM

Linda Hazelden (Chair), Beth McNally, Helen Barton,
Gerard Chiasson, George Geczy, Eleanor O'Flynn,
Ingrid Munson, Shari Typer, Sue Olynyk

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

e-mail: basef@basef.ca
web site: www.basef.ca





M C M A S T E R INNOVATION PARK

175 Longwood Road South, Suite 105
Hamilton, ON, L8P 0A1
905-667-5500 | www.mcmasterinnovationpark.ca

A MESSAGE FROM HONOURARY CHAIR, ZACH DOUGLAS



It is my pleasure as Honourary Chairperson to once again welcome you to the annual Bay Area Science and Engineering Fair (BASEF).

I know from my own experience how important events like this can be in awakening a love of science and engineering in young people. Through participation in BASEF students are exposed to science, engineering and technology in a very important manner. The hands-on, project-based approach to the practice of these disciplines leads directly to thinking innovatively. Ultimately, innovation leads to new solutions to the challenges we face and to new opportunities for growth, both personally and as a society. Quality science, critical thinking and rational approaches to problem solving are perhaps more important today than ever. Events such as BASEF play a very important role in fostering these approaches.

The success of an event like this depends on the hard work of teachers, parents, and event organizers. I would like to acknowledge this and thank them for their commitment and efforts.

Finally, to all the students who are participating in the fair, I want to recognize your hard work and dedication. Congratulations and all the best in the future.

Zach Douglas,
President & CEO
McMaster Innovation Park

Mr. Douglas is the President of McMaster Innovation Park (MIP), an entity affiliated with McMaster University, which has a mandate to redevelop a 50 acre brown field industrial site and transform it into an internationally recognized, world class research and development park.

Since its inception, MIP has completed three buildings and has another under construction. As of the end of 2015 there are more than forty tenants employing approximately 700 people on-site with the expectation that the numbers will grow to more than 800 once the Fraunhofer BEAM Centre is completed. Details of MIP's development are available at www.mcmasterinnovationpark.ca.

Mr. Douglas has held leadership positions with Crown Investment Corporation of Saskatchewan and Saskatchewan Opportunities Corporation. Over the past 30 years, he has established relationships with the business, financial and economic development communities across Canada, and has worked closely with stakeholder groups to encourage collaborative approaches to economic development financing and business development.

Mr. Douglas holds a Bachelor of Law degree from the University of Saskatchewan.

GENERAL FUNDING SPONSORS – 2016



TITLE \$15,000 +

ArcelorMittal Dofasco

DIAMOND \$10,000

Leggat Auto Group
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
McMaster University
Professional Engineers of Ontario
- Hamilton & Burlington Chapter
Q&B Rentals

GOLD \$2,500 +

Lifetouch
Masters Insurance
McMaster Innovation Park
Taylor Leibow Accountants & Advisors
The Hamilton Spectator
Union Gas Ltd.

SILVER \$1,000+

Canadian Linen & Uniform Service
Halton Catholic District School Board
Hamilton Chamber of Commerce
Hamilton-Wentworth District School Board
John Deere Canada ULC
Ontario Power Generation- Nanticoke Station

City of Hamilton Economic Development Department
Halton District School Board
Hamilton-Wentworth Catholic District School Board
Hillfield Strathallan College
LiUNA Local 837
TD Friends of the Environment Foundation

BRONZE \$500 +

BattleGoat Studios
Dufferin Construction
GM Blueplan Engineering
Hamilton Community Awareness
& Emergency Response
International Union of Operating Engineers
-Local 793
Omicron Machining

D.E.N.M. Engineering Ltd
Etratech Inc.
Hamilton Amateur Astronomers
Judy Marsales Real Estate
Nikola Tesla Education Corporation
RV Anderson Associates
MMM Group
TACC Construction

FRIENDS \$100+

AT McLaren Ltd
Electrical Construction Association of Hamilton
Institute of Electrical & Electronic Engineers
-Hamilton
New AE Technologies

Conservation Halton
Hamilton Wentworth Occasional Teachers
Liburdi Engineering
National Steel Car
Optimist Club of Stoney Creek

BENEFACTORS – 2016



Through personal donations, individuals can support BASEF.

BASEF Benefactor Levels celebrate famous Canadian scientists and engineers.

Banting and Best Benefactors (\$1000+)

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

Mr. Mike & Mrs. Sue McNally

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.

Mr. George Geczy
Mr. Steve & Mrs. Cathy Hayman
Mr. Peter & Mrs. Susan 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

Mr. Dan & Mrs. Debbie Bowman
Mr. John & Mrs. Eleanor O'Flynn

Mr. Grant Buchan-Terrell
Dr. Danny Soares

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.

Dr. Baker Akad
Mrs. Jo-Anne Connery
Dr. Nicola Simmons
Dr. Christine Yeung

Mr. Jim Casey
Mr. Wayne Schaefer
Dr. Odette Tunks
Ms. Jodi Younger

Smith Benefactors (<\$50)

Dr. Michael Smith won the 1993 Nobel Prize in Chemistry for discovering site-directed mutagenesis: how to make a genetic mutation precisely at a spot in a DNA molecule

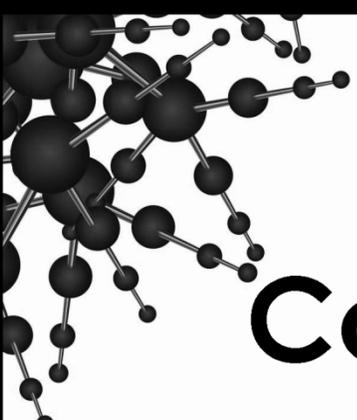
BASEF'S ENDOWMENT FUND:

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, will be made available for BASEF to support BASEF's mission and goals. The endowment fund has grown to just over \$29,000, and has become operational, as the total capital in the fund exceeds \$25,000. In 2016, BASEF will be eligible to make a distribution from the endowment fund.

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.



Congratulations to all of the BASEF Participants!



www.mcmasterinnovationpark.ca

BASEF 2016 SCHEDULE OF EVENTS

All at Mohawk College Fennell Campus

Gymnasium - David Braley Athletic Centre (DBARC)

Theatre - McIntyre Performing Arts Centre



Wednesday, March 30 – On-Site Project Setup/Safety Check

4:00 – 8:00 pm	Registration, set-up and safety checks	Gym
----------------	----------------------------------------	-----

Thursday, March 31 - Student Activity Morning & Judging of Projects

8:00 – 9:00 am	BASEF students arrive for Morning Activity (Theatre Doors Open at 8:30 am)	Theatre
9:00 – 9:05 am	Introduction – Sponsor Comments	Theatre
9:05 – 9:40 am	New Horizons – A New Look at Pluto Rob Cockcroft, McMaster University	Theatre
9:40 – 9:45 am	How to set up a telescope (in a hurry) Matthew Mannering, Hamilton Amateur Astronomers	Theatre
9:45 – 10:20 am	Astronomical Science from Your Backyard Phil Mozel, Ontario Science Centre (retired)	Theatre
10:20 – 10:25 am	How to observe with a telescope (quickly) Matthew Mannering, Hamilton Amateur Astronomers	Theatre
10:25 – 11:10 am	A Tour of the Universe John Gauvreau, Hamilton Amateur Astronomers	Theatre
11:10 am – noon	McMaster University Chemistry Presentation Professors Randy Dumont and Paul Harrison	Theatre
12:00 – 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.	Gym
1:00 – 4:00 pm	Judging interviews for BASEF students (BASEF participants must remain at their projects during judging)	Gym

Friday, April 1 – *Fair not open to the public or students*

Saturday, April 2 - Public Viewing

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 12:15 pm	Gym

Tuesday, April 5 - Awards Ceremony

5:15 – 6:30 pm	Champions of BASEF Dinner	By Invitation Mohawk
6:30 pm	Awards Ceremony seating opens	Theatre
7:00 - 9:30 pm	Awards Ceremony	Theatre
9:30 - 10:00 pm	Meeting with chaperones for trip winners and their parents	Theatre

EMERGENCY PROCEDURES WHILE AT MOHAWK COLLEGE

The following emergency procedures apply to Mohawk College's Fennell Campus. Please review and familiarize yourself with them so you know how to respond quickly and appropriately in the event of an emergency.



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, IAHS at 88, MLC at 5888 or call 911

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

For more detailed information, please visit:
<http://www.mohawkcollege.ca/campus-safety-security/emergency-procedures.html>

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.

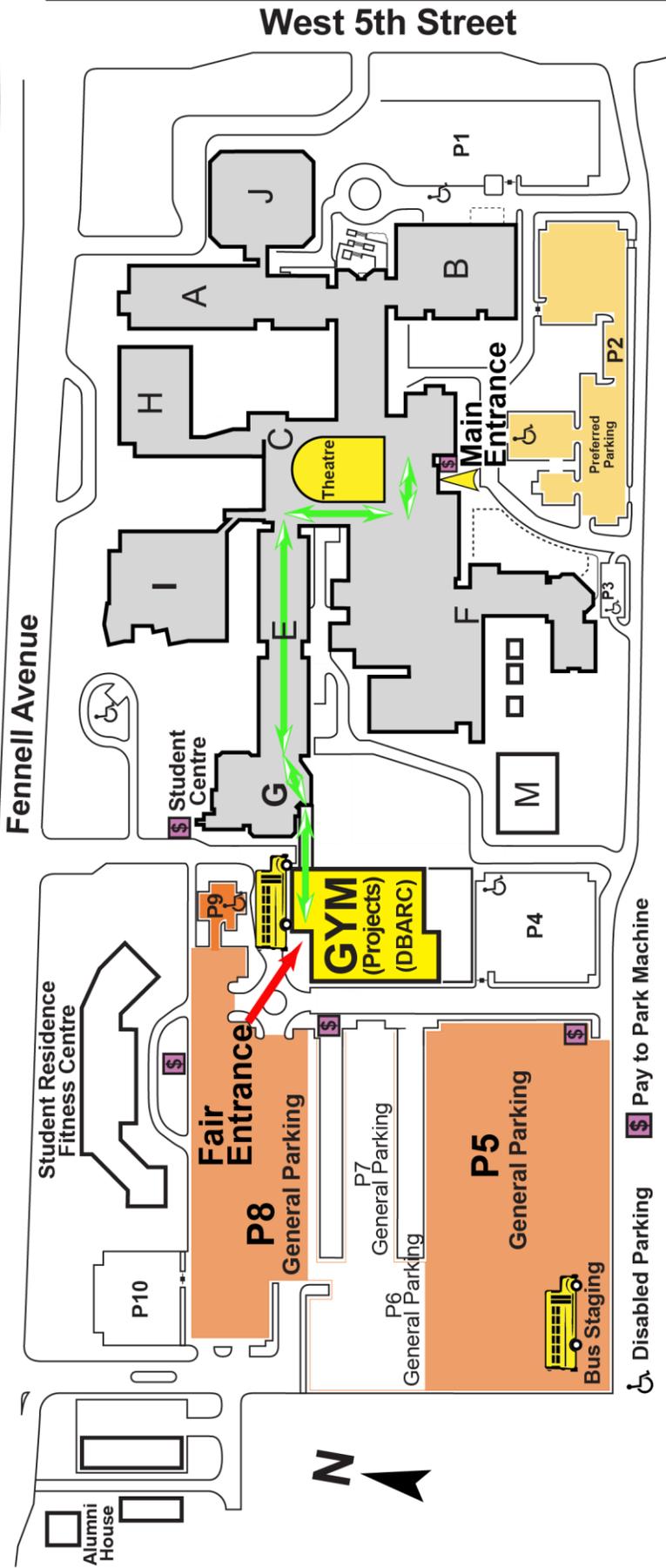
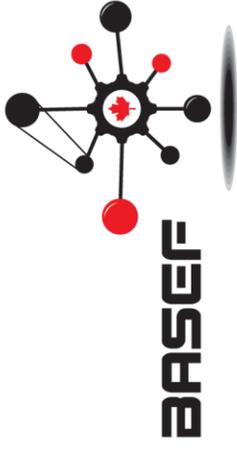
Threat Outside the Building:

Hold and Secure:

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

BASEF 2016

March 30 - April 5, 2016
Mohawk Fennell Campus



Wednesday March 30

Project setup in the Gym

4:00 pm to 8:00 pm

Student drop off at lot **(P8)**
(1 hour complimentary parking between 4:00PM and 9:00PM in lot P8 only)

Thursday March 31

Activity morning in the Theatre

Students arrive 8:30 am to 9:00 am
Bus dropoff/pickup at North end of DBARC, staging in **(P5)**

Student car drop off at Main Entrance
Project judging 1:00 pm - 4:00 pm in Gym.
Parking in lot **(P8)** (complimentary parking 4:00PM to 5:00PM in lot P8 only)

Saturday April 2

Public viewing in the Gym

9:00 am to 12:00 pm
Project takedown 12:00 noon

Complimentary parking in **(P5)**

Tuesday April 5

Awards Ceremony in the Theatre

7:00 pm to 9:30 pm
Doors open at 6:30 pm

Parking in lot **(P5)** Regular rate \$6.00

Friday April 1 - No BASEF students on site, Committee Members only

The Parent Pages (or how to survive Science Fair!)

Congratulations on your decision to support your child's participation in BASEF 2016!

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 - and with the official BASEF "goody" bag.

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

Location of Events: Mohawk College

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

Parking:

There is a campus map included on the previous page of this program

Parking for Registration and Project Setup: There will be signs directing you to the Science Fair as you enter the College from the Fennell Avenue or West 5th Street entrance. Parents are instructed to please **park in Lot P8** and walk to the DBARC gymnasium with your projects. Parking is free during project setup – but remember, only Lot **P8** will be free. The traffic circle at the entrance to DBARC is a main thoroughfare and a fire route, so project drop-offs will not be allowed at the DBARC entrance.

Parking for Activity Day, Public Viewing and the Awards Ceremony: There will be signs directing you to the event locations as you enter the College from the Fennell Avenue or West 5th Street entrance. Parents are instructed to please **park in Lot P5 – P8**. Volunteers, parking attendants and Security staff will be able to guide you to the events.

Parking Fees: Complimentary parking is provided for Saturday's Public Viewing
Regular parking fees apply during Activity Day and the Awards Ceremony

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!)

Day by Day - Parent Responsibilities

Day 1 – Registration and Set-up

Project set up for the fair occurs **ONLY** on **Wednesday, March 30, 2016 from 4:00 – 8:00 pm** at **Mohawk College DBARC Athletic Centre**. **Parking in Lot P8 is free. Park, then carry your 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 been safety checked and passed.** The registration process and project set-up usually take less than an hour. **Be sure all of the safety rules and regulations regarding project size, display materials and ethical guidelines with respect to human and animal testing have been followed.** Complete details are available on the official website: basef.ca/

Day 2 - Student Activity Morning, Thursday, March 31, 2016 @ 8:30 am – 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. Program details can be found on the BASEF website at: basef.ca/activities

Day 2 - Lunch - Thursday, March 31, 2016 @ 12:00 noon - 12:45 pm

BASEF student exhibitors will be escorted from the McIntyre Theatre to the DBARC Athletic Centre. **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, Thursday, March 31, 2016 @ 12:45 – 4:00 pm

Students are required to be at their projects for judging between 1:00 – 4:00 pm. **Teachers and parents are not permitted on the gym floor after 12:45 pm** 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.

When picking students up after Judging at 4 pm, parents may **park free in lot P8 for 1 hour**. Other parking lots will have parking enforcement present. Do not wait along the roadway at the DBARC Athletic Centre entrance; this is a fire route.

Day 3 - Friday, April 1, 2016

The Fair is NOT open to students or the public on this day. The Fair Committee will be busy compiling results, writing cheques, engraving trophies and preparing for the awards ceremony.

The Parent Pages (or how to survive Science Fair!)

Day 4 - Public Viewing, Saturday, April 2, 2016 9:00 am – Noon

Park in Lots P5 to P8. Complimentary parking is provided.

We ask that your children be at their projects in the gymnasium for Public Viewing from 9:00 am - 12:00 noon. At noon the students will be asked 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.

The Awards Ceremony – Tuesday, April 5, 2016 7:00 – 9:30 pm

Park in Lots 5 to 8. The regular \$6 parking fee applies. Pay-to-Park machines accept credit cards and exact coin payment only. We advise parents to plan plenty of time for parking as there are a limited number of pay-to-park machines available.

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 pm sharp but it is recommended to come early, as seating is limited. Doors will open to the theatre at 6:30 pm. If the theater reaches capacity, alternate seating or viewing opportunities will be provided. Details will be announced in the lobby if necessary.

Note: Our trip award winners and a parent are required to attend an information meeting immediately after the Awards Ceremony (approx. 1 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.

JUDY MARSALES REAL ESTATE LTD. Brokerage

*Proud to support
outstanding students,
teachers and volunteers*

2016

Bay Area

Science & Engineering

Fair



BASEF thanks its 2016 sponsors



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Bronze

Title
Diamond
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"You can always count on us."
LEGGAT
AUTO GROUP | LAG.CA

MOHAWK
COLLEGE

Primary Fluid Systems Inc.

\$10,000

HAMILTON THE SPECTATOR
Professional Engineers Ontario
Hamilton-Burlington Chapter



McMaster University

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Q & B Rentals

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The BASEF Bursary Program

BASEF initiated a pilot Bursary Program this year to help grade 7 to 12 students in need of financial assistance complete a science fair project. Based on teacher recommendations, 42 student projects in BASEF's catchment area were given \$25.00 and a project backboard. The projects could be a classroom activity or be entered into BASEF 2016; 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 at-risk students to participate in project-based science.

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

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's 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.

BASEF bursaries offer at-risk students financial assistance to complete a science fair project, one of the best platforms for discover-based learning. (see the BASEF Bursary Program box above).

Project-based science, as promoted by science fairs, is one of the best ways to engage young people in a longer term, 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.



2016 BASEF Champion Teacher

The Organizing Committee
of the Bay Area Science and Engineering Fair congratulates:

Frank Macchiusi



“...has a very positive impact on students participating in science fairs. He encourages students to attend BASEF so that we [can] expand our knowledge and find out new and interesting things”

“He’s a great science teacher and encourages us to do the best we can.”

“...he has taught me a whole new world of math and science in a way I can understand”

“... is not afraid to explain things with the utmost amount of detail”

CONGRATULATIONS TO THE 2016 BASEF CHAMPION TEACHER!

The Champion Teacher Recognition Award for 2016 includes induction into the BASEF Champion Teacher Hall of Fame, a plaque and \$250 for use in the classroom of each winning teacher. The cash awards are funded by the BASEF 500 Awards Program. 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 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 BASEF 2016 VOLUNTEERS!

Volunteers

Harsh Bhavsar
Ahmed Binsaud
Gail Britton
Moyosore Browne
Jessica Dekker
Lyndsey Dunn
Trixie Ellithorn
Scott Flaxman
Thomas Flaxman
Ed Gills
Mary Helen Gills
Rajdeep Grewal
Trevor Hayhurst
Nandini Jhanju
Michele Joch
Tyler Kemphuis
Haider Khan Lodhi

Volunteers

Michelle Lafontaine
Jagpreet Padda
Hardik Patel
Krunal Patel
Krushil Patel
Patheshkumar Patel
Viren Patel
Punjesh Rajpurohit
Shukla Vishwa Rakesh
Lovejeet Saini
Opeyemi Sangoyale
Doug Scott
Jayda Seward
Brenda Sloane
Muhammad Soomro
Gail Trevisani
Maria VanAken

Photo Team

Alan Bates
Glen Lawson
Jane Ann Smith
John Novak
Ryan Bowdish

Registration Team

Jordan Lenjosek
Kevin MacIsaac
Nancy Carter
Rob Lenjosek

Safety Inspectors

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David Fisher
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Alta Technology

Nigel Birch

ArcelorMittal Dofasco

Erika Bellhouse
Stephanie Drywood
Daniel Hoeksema
Joydeep Sengupta
Garly Sett
David Starr
Mansoor Tavassoly

AVAR Environmental Inc.

Justin Lewis

Ballagh & Edward LLP

Valerie Edward

Biotechnology

Tom Themeles

Brock University

Christina Romano
Jessica Scozzari

C&M McNally Engineering Corp.

Mike McNally

Calder Engineering

Brett Perchaluk

Canadian Red Cross

Nelson Ruiz Blanco

Canmet MATERIALS

Kumar Sadayappan

City of Hamilton

Daniel Lawlor
Erick Merlos

Congregation of the Sisters of St Joseph

Amy Sloan

Coordinate Control Inc.

Gerry Clarke

Darts Transit

Mark Mindorff

Doctor's Office

Jo-Anne Teoh

Environment Canada

Patty Gillis

Every1Games Professional Services Inc.

Sarah Drew

FARO Technologies

Tarjit Bassi

G.S. Wark Limited

Chris Hopkins

General Motors of Canada

Wayne Schaefer

Halton District School Board

Shawn Clement

Hamilton Health Sciences

Bev Barbato
Billie Genier
Linda Millar
Tara Packham

Hamilton Paramedic Service

Kevin Morgan

Hamilton Public Health Services

Steven Walsh

HDTs Chemicals

Monika Malig

HMCS Star - Royal Canadian Navy

Brian Hall

HWCDsB

Donna Stack-Durward

HWDSB

Ramani Leavage

IBI Group

Brian Enter
Scott McLaren

Ivaco Rolling Mills

Craig Hagopian

KEEPRITE REFRIGERATION

Peter Frame

L-3 Wescam

Adam Buggeln
Andrea Johnson
Nabeela Merchant
Karl Sciberras
Greg Voorberg

LHS Engineering

Dave Howard

M.R.Byrne & Associates

Ben Van Berkel

McMaster University

Amjad Arrabi
Rachelle Atrache
Jason Au
Folacin Babatunde
Puja Bagri
Cathy Cao
Nancy Carter
Douglas Chung
Erin Cole
Sahar Darvish Molla
John DeBackere
Sara Dizzell
Rebecca Eisen
Yorel Emun
Gillian England-Mason
Jason Fan
Victoria Flaxman
Jane Foster
Victoria Galea
Jim Garrett
Sophie Geffros
Sara Halawa
Ryan Halfyard

McMaster University (continued)

Susan He
Jaclyn Hurley
Bushra Ilyas
Mark Inman
Niloufar Javid Khalili
Varsha Jayasankar
Peter Jonasson
Portia Kalun
Michelle Kang
Mohammed Karodia
Rachel Kelly
Kate Kennedy
Ryan Lamers
Yung Lee
Doris Li
Emily (Yujin) Li
Ola Lunyk Child
Chantel Markle
Gabiella Mattina
Alison McDonald
Joshua McGrath
Xavier Michaud
Daniel Miltenburg
Mohammad Mohiuddin
Joshua Nederveen
Philip Nguyen
Nijiati Nia
John-Paul Oliveria
Ramandeep Pabla
Giusepina Pacher
Sanya Palli
Andrew Parashis
Sagarika Paul
Vinod Prabu
Christian Pretto
Sean Rasmussen
Cory Richman
Mitchell Robson
Yasser Salama
Ian Sinke
Margot Smith
Susie Son
Raksha Sule
Peter Summers
Jaames Tedesco
Danya Thayaparan
Shawna Thompson
Chris Thomsen
Brian Tuinema
Danielle Virali
Natalie Wagner

MERIT AWARD JUDGES (Continued)

McMaster University (continued)

Ningyuan Wang
Jocelyn Wessels
Dan Wilson
Michael Xu
Karl Zimmermann

Mohawk College

Stephen Adams
Gabriela Covaci
Antonia DiMatteo
Bill Docherty
John Holloway
Nicole Howe
Jennifer Jahnke
Andjela Janosevic
Ian MacMillan
John Patrick Millar
Brian Minaji
Cheryl Morrow
Lisa Safian
Glenn Sheils
Brian Stefanchuk
Jim Vanderveken
Valerie Webber
Shantal Woolsey
Shayne Yeaman

Mount Sinai Hospital (Toronto)

Binthu Puvan

Newbury Tech Consulting

Dr. Jila Mahalec

Town of Oakville

David Fisher

Ontario Environmental

James Kasperetz

Peto MacCallum Ltd. Consulting Engineers

Sean Denham

Princess Margaret Cancer Centre

James Han

Real Programming 4 Kids

Yile Zhang

Refah K. Bank

Fariborz Nowrouzi

Region of Peel

Steve Lonz

ReproLabels

Rebecca Smith

Retired

David Brown
Robert de Haan
Helen Graham
Warren Johnson
Paul-Benoit Latour
Paul Martin

Retired continued

Paul Muser
Hansa Patel
Jacqueline Roberts
Graham Stratford
George Sweeney
Paul Wehrle
Michael Tarjan
Ian Rowe
Alan Rutherford
Tony Wallace
Eric McNair
Beverly Shepard
Jana Jilek
Ross Johnson
Otto Zander
Donald Stevens

Rockwell Automation

Jeff Tod

Ryerson University

Tarek Sadek

Securitas Canada

Susan Hearst

Self-employed

Eric Harrison
Sarah Lantz
Christopher Miese

Softchoice

Megan Shuker

St. Joseph's Healthcare

Adam Prieur
Bruce Young

Student

Miranda Macaulay
Darcy Smith
Matthew Yau

Suncor Energy

Nikola Lukenda

Sylvan Learning Centre

Julia Spilotro

Synopsys

Phil Chopp

University Health Network

Nikolina Radulovich

University of Toronto

Justin Burgener
Greg Chen
Justin Hahn
Frank Stechey

William Osler Health Systems

Ferid Rashid

Xerox

Shane Morin

York University

Luana Sciallo

Zinje Computing

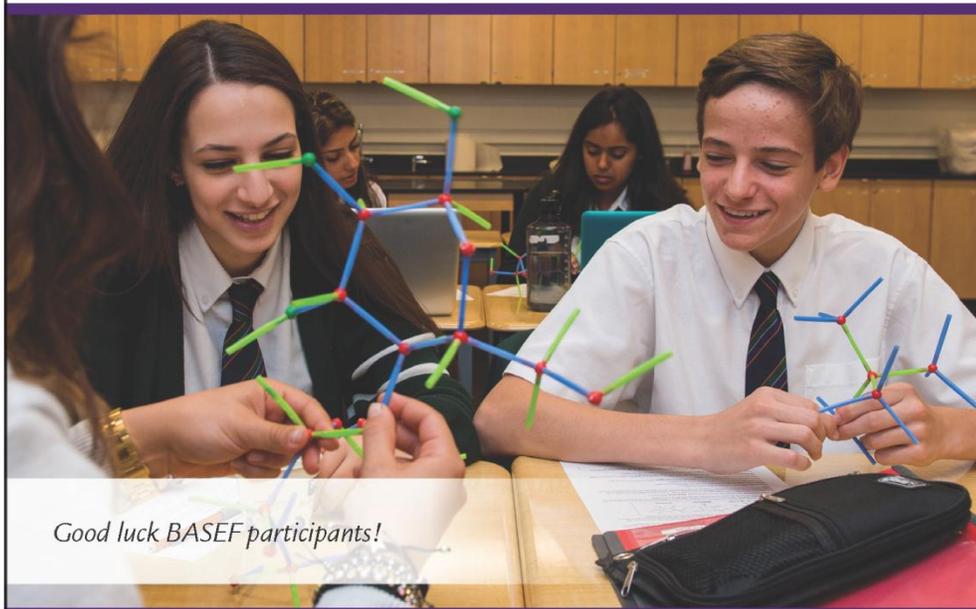
Jerome Miecznikowski

Unaffiliated

Dr. Shushmita Gupta
Linda Hazelden
Erik Kubar
Kimberley Preston
Janet Scafefer
Aamir Shaikh



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Good luck BASEF participants!

Hillfield Strathallan College is an independent day school for Montessori Toddler and Pre-Kindergarten to Grade 12.

**Join us for our Open House on Wednesday, April 6.
Call 905-389-1367, or visit www.hsc.on.ca, for details.**

ArcelorMittal Dofasco Awards

Adam Aglipay, Roger Bloesz, Matthew Boodoo,
Leanne Buss, Scott Chen, Shannon Clark,
Rob Connor, Monica Dias, Andrew Dziuba,
Mohamad Elsohemy, Allison Haluik,
Stephanie Holko, Dan Kolman, Josh Korol,
Andrea Kuciak, Craig McGinlay, Christopher McNeish
Mark Tizzard, Pedro Tondo, Tianfu Wang

Artistically Inspired Display Awards

Cathy Hamilton, Cathy Hayman

**Association for Iron & Steel Technology Northern
Chapter Award**

Shannon Clark

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

Shannon Clark

**Canadian Nuclear Society (Golden Horseshoe Branch)
Awards**

Dave Joyal, Fred Salaun

Chemical Institute of Canada - Hamilton Section Awards

Don Barclay, Bert Halliday, Barry Smallbone,
Tom Sutton

Doris Casey Disability Solutions Award

Al Nicolls

Conservation Halton Awards

Sasha Benevides

**Michael G. DeGroot Institute for Infectious Disease
Research Internship Award**

Dawn Bowdish

Dillon Consulting Limited

Don Bourassa, Trevor Goulet

Electrical Construction Association of Hamilton Award

Joe Kurpe

Farncombe Family Digestive Health Research Awards

Jan D. Huizinga, Jose Libertucci, Alex Vincent

Gowling WLG Innovation Awards

Jennifer Sander

Hamilton Academy of Dentistry Awards

Frank Stechey

Hamilton Amateur Astronomers Awards

Bill Tekatch, Ann Tekatch, Bernie Venasse

**Hamilton Association for the Advancement of Literature,
Science & the Art**

Michael Jefferson, Richard Morton, Tony Petric,
Ludvik Prevec

Hamilton Chamber of Commerce Awards

Patti Hall, Paul Lakin, Brad Maude

Hamilton Wentworth Occasional Teacher Awards

Barry Naidoo, Nguyen Trang

Hillfield Strathallan College Awards of Excellence

Lara De Lazzari, Marc Edgar

Hillfield Strathallan College Entrance Scholarship Award

Lara De Lazzari, Marc Edgar

Horizon Utilities Corporation Awards

Will Johnson, Paige Webb-Murre

John W. Howard Materials Research Award

Nicola Simmons

Indigenous Peoples of Canada Scientific Study Awards

David Reed

**Institute of Electrical and Electronic Engineers Hamilton
Section Award**

Blair MacCuish

International Science & Engineering Affiliated Fair Awards

Catharine Bowman, Ming Chong, Tyler Collins,
Cathy Hayman, Megan Schlorff, Roopa Suppiah

Laurentian Chapter of SETAC Award

Oana Birceanu, Yamini Gopalapillai, Scott Hepditch,
Jennifer Ings, Ryan Prosser

Dr. Colin J.L. Lock Memorial Chemistry Award

Nicola Simmons

**McMaster University Department of Chemistry and
Chemical Biology Award**

Ryan Wylie

**McMaster Department of Chemical Engineering & Chemical
Engineering Club Award**

Jesse King, Ryan LaRue

McMaster University Engineering Society Entrance Award

Taya Burzynski, Michael Meier

**McMaster University Faculties of Science and Engineering
Entrance Awards**

Arlene Fajutrao Dosen, Daniel Picone

McMaster - LEAP Award of Innovation

Alex Porco, Owen Sheppard, Rebecca Weatherall

McMaster - Venture Award of Innovation

Alex Porco, Owen Sheppard,
Rebecca Weatherall

SPECIAL AWARD JUDGES (Continued)

McMaster University Women in Engineering Entrance Awards

Arlene Fajutrao Dosen, Daniel Picone

Mohawk College Building & Construction Sciences Awards

Dan Havercroft, Sean Nix

Mohawk College Electrotechnology Department Engineering Technology Awards

Richard Ma, Brian Stefanchuk

Mohawk College Mathematics Awards

Elizabeth Martin

Mohawk College Computer Science & Information Technology Computer Excellence Award

Stephen Adams, Brian Minaji

Nelson Steel Awards

Shannon Clark

Nikola Tesla Innovation Awards

Vic Djurdjevic

Primary Fluid Systems Awards

Sandy Walker

Procor Engineering Awards

David Thorpe

Professional Engineers of Ontario-Hamilton/Burlington Chapter Awards

Michelle Chin, Gary Closson, David Dean, Erika Kadar, Jim Sweetman

Professional Engineers Ontario - Oakville Chapter Awards

Susan Reimar

The Research Institute at St. Joes Hamilton, Health Research Award

Olivia Allegra, Iris Balodis, Duncan Henderson

Rotary Club of Hamilton-East Wentworth Awards

Paul Crossman

Royal Botanical Gardens Award

Karin Davidson-Taylor

Dr. Nicola Simmons Award in Cognition Studies

Nicola Simmons

SPIE - The International Society for Optics & Photonics Awards

Garry Brown

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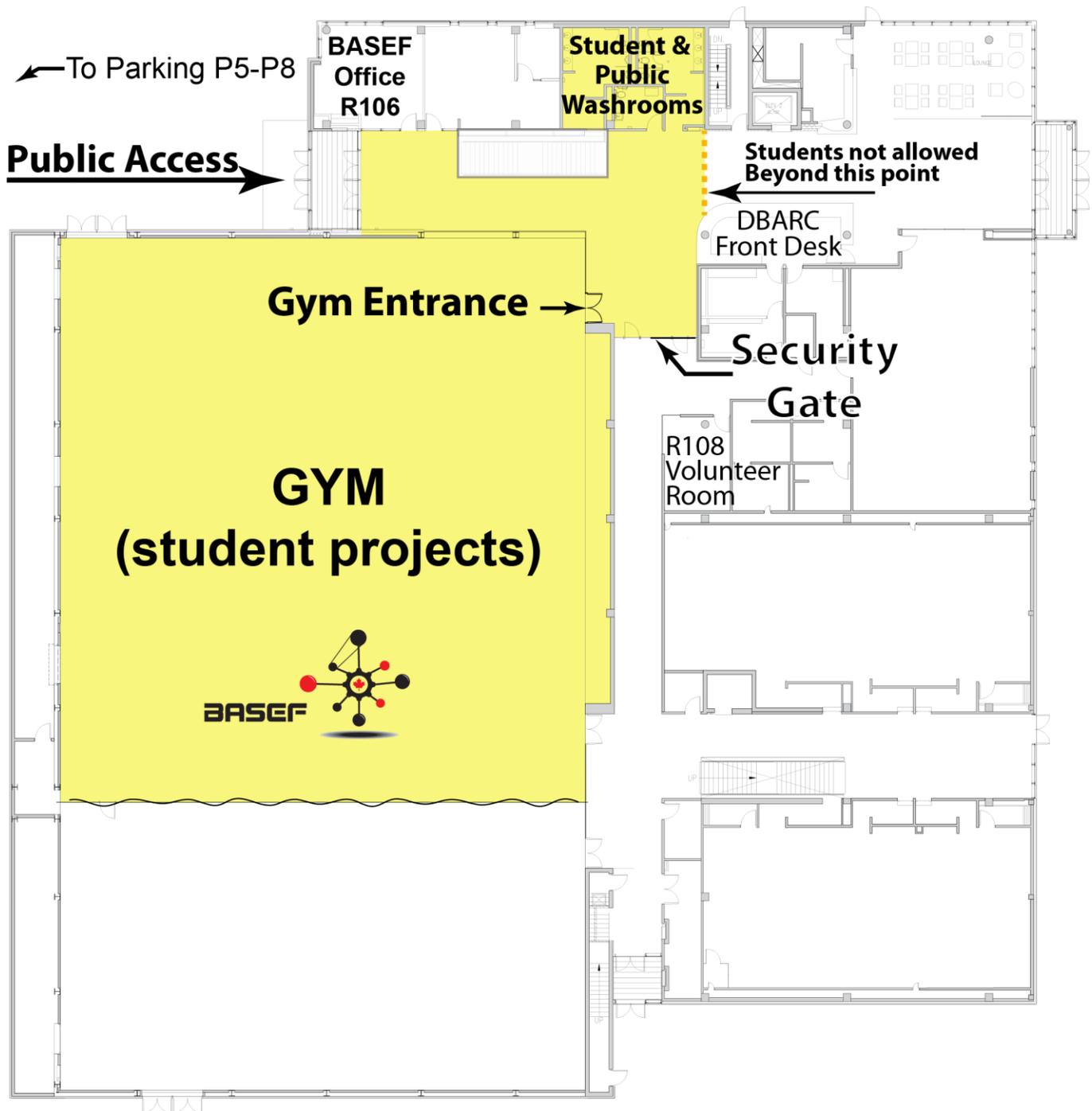


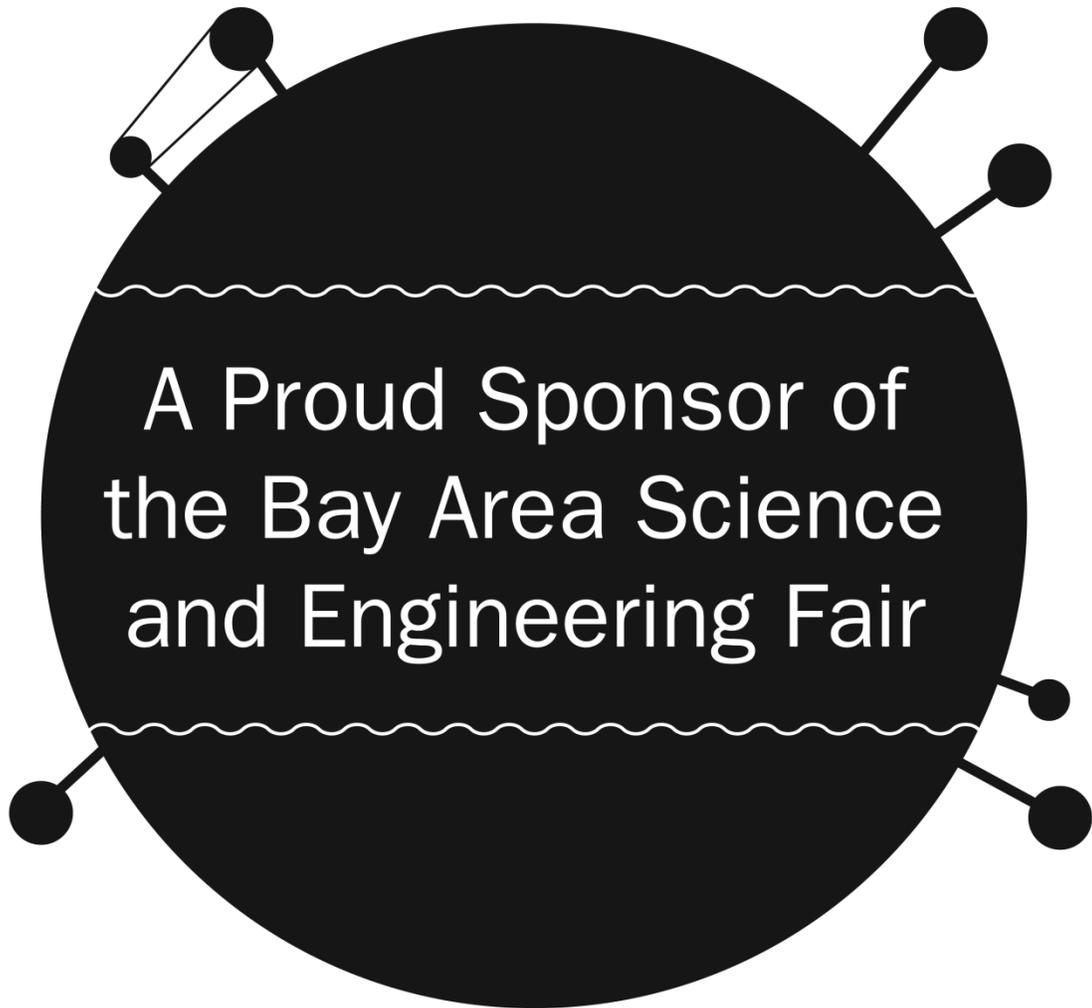
**The David Braley Athletic and Recreation Centre
(DBARC)**

BASEF Student Boundaries

Thursday, March 31 - 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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BAY AREA SCIENCE & ENGINEERING FAIR

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David Braley Athletic Centre
 Mohawk College, Hamilton, ON
 March 30 to April 5, 2016



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Trophies

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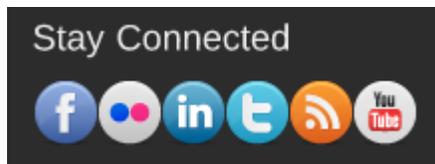
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A01 Comparison for incubation times of different bird species

Molly O'Sullivan, Jade Wicklund
Junior 7/8 Life Sciences Non-Human
Guy B. Brown, HWDSB

A02 Can plants grow with liquids other than water

Trinidad Baigorria, kendra meikle
Junior 7/8 Life Sciences Non-Human
St. Bernadette, HCDSB

A03 Rainbow Plants

Annol Mangat, Kanzah Jabeen
Junior 7/8 Life Sciences Non-Human
Tiger Jeet Singh, HDSB

A04 Analyzing microcrystalline cellulose fat adsorptions to yield a potential fat absorption inhibitor

Taehyoan (David) Won
Senior 11/12 Life Sciences Non-Human
Westdale, HWDSB

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Joshua Zegarac, Liam Bennett
Junior 7/8 Health Sciences Human
Sir William Osler, HWDSB

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Ruihan Wei
Senior 11/12 Health Sciences Human
Hillfield Strathallan College, IND

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Maeve Hay Cooper
Senior 11/12 Health Sciences Human
Westmount, HWDSB

A08 A Novel Approach to Delivering Ascorbic Acid into the Bloodstream to Treat Cancer

Tomas Stojanovic
Intermediate 9/10 Health Sciences Human
Orchard Park, HWDSB

A09 How does music affect mood?

Araav Sehgal, Shubhendu Dutta
Junior 7/8 Health Sciences Human
Escarpment View Public School, HDSB

A10 Measuring the Effects of Physiotherapy on Range of Motion

Marshall Stefanchuk, Todd Boyer
Junior 7/8 Health Sciences Human
St. Bernadette, HWCD

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Natalie Duarte, Dominique Pawlak
Junior 7/8 Health Sciences Human
Our Lady of Fatima, HCDSB

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Angelina Rotella
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St. Agnes, HWCD

A13 Where does the Head Rest Best?

Kalynna Hucal
Junior 7/8 Health Sciences Human
Our Lady of Peace, HWCD

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Allie Cheverie
Junior 7/8 Health Sciences Human
Immaculate Heart of Mary, HWCD

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Samuel Han
Senior 11/12 Health Sciences Human
Abbey Park High School, HDSB

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Emily DiDanieli
Junior 7/8 Health Sciences Human
St. Bernadette, HCDSB

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Delia Jansen
Junior 7/8 Life Sciences Non-Human
Home Schooling, IND

B02 Disinfectants: Harmful or Helpful

Jessica Lim
Junior 7/8 Life Sciences Non-Human
Hillfield Strathallan College, IND

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Lucas Brenninkmeijer
Junior 7/8 Life Sciences Non-Human
Oakville Christian School, IND

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Ainslie Law
Junior 7/8 Life Sciences Non-Human
John William Boich, HDSB

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Dylan Ngo, Jasraj Minhas
Junior 7/8 Life Sciences Non-Human
John William Boich, HDSB

B06 Mechanically Enhanced Growth Optimizer

Larissa Azzopardi
Junior 7/8 Life Sciences Non-Human
St. Joseph, HWCD

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Margaret Williams
Senior 11/12 Life Sciences Non-Human
Ancaster High, HWDSB

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David Arce, Ethan Wang
Junior 7/8 Life Sciences Non-Human
Our Lady of Fatima, HCDSB

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Ariel Fournier
Junior 7/8 Life Sciences Non-Human
Escarpment View Public School,
HDSB

B10 More Bang For Your Buck

Reese Clements, Gwen Roch
Junior 7/8 Life Sciences Non-Human
St. Augustine, HWCD

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Ellie Xu
Intermediate 9/10 Life Sciences
Non-Human
Garth Webb Secondary School, HDSB

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Jack Ceroni
Junior 7/8 Life Sciences Non-Human
Hillfield Strathallan College, IND

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Siyu Liu
Junior 7/8 Life Sciences Non-Human
Appleby College, IND

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Eugenia Maximova
Junior 7/8 Life Sciences Non-Human
Hamilton Academy of Performing
Arts, IND

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Ingrid Christoffersen
Junior 7/8 Life Sciences Non-Human
Queensdale, HWDSB

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Hannah Maione
Junior 7/8 Life Sciences Non-Human
St. Augustine, HWCD

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Emma Temple, Susi Garcia
Junior 7/8 Life Sciences Non-
Human
St. Bernadette, HCDSB

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Jenna James, Julie Fitzpatrick
Junior 7/8 Life Sciences Non-
Human
Tiger Jeet Singh, HDSB

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Grace Matti, Gabriela Dzoja
Junior 7/8 Life Sciences Non-
Human
Our Lady of Fatima, HCDSB

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Shelby Hill, Keelyn Martin
Junior 7/8 Life Sciences Non-Human
J. C. Hill Elementary, SNS

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Kaylee Allan, Ilse Kloosterman
Junior 7/8 Life Sciences Non-Human
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Juliana Caruso, Riley Borger
Junior 7/8 Life Sciences Non-Human
St. Therese of Lisieux, HWCD

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Noah Muntwyler
Senior 11/12 Life Sciences Non-Human
King's Christian Collegiate, IND

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Alyssa Spaan
Intermediate 9/10 Life Sciences
Non-Human
Hillfield Strathallan College, IND

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Erica De Fazio, Vanessa Greco
Junior 7/8 Life Sciences Non-Human
Immaculate Heart of Mary, HWCD

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Mowa Ayibiowu
Junior 7/8 Life Sciences Non-Human
Oakville Christian School, IND

C08 Convergent Evolution in prehistoric animals and modern animals

Oakley Kim
Intermediate 9/10 Life Sciences
Non-Human
Abbey Park High School, HDSB

C09 Denaturing different Proteins through Temperature Change

Rizvan Ahmed
Junior 7/8 Life Sciences Non-Human
Al-Falah Islamic School, IND

C10 Tachycardia, Bradycardia, or Death

Dominique Greyvenstein
Junior 7/8 Life Sciences Non-Human
Oakville Christian School, IND

C11 Sweet as Honey

Chloe Weiler, Nikola Lukezic
Junior 7/8 Life Sciences Non-Human
Our Lady of Peace, HWCD

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Nicole Turner
Junior 7/8 Life Sciences Non-Human
St. Mary, HCDSB

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Lexy Reinhardt
Intermediate 9/10 Life Sciences
Non-Human
Hillfield Strathallan College, IND

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Timothy Manuel, Christian Rudziak
Junior 7/8 Life Sciences Non-Human
St. Joachim, HWCD

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Anastasia Chuprakova
Junior 7/8 Life Sciences Non-Human
Hamilton Academy of Performing
Arts, IND

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Viviana Anacleto, Jessica Grigg
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St. Paul, HWCD

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Rachael Sommerville, Kyla McNally
Junior 7/8 Life Sciences Non-Human
John William Boich, HDSB

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Reese Cerkownyk
Junior 7/8 Life Sciences Non-Human
Our Lady of Fatima, HCDSB

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Betty Er, Rutasha Patel
Junior 7/8 Life Sciences Non-Human
Dalewood, HWDSB

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Chris Ji, Maxwell Gyimah
Senior 11/12 Health Sciences Human
Westmount, HWDSB

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Lulu Xi
Intermediate 9/10 Health Sciences
Human
Westmount, HWDSB

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Stefan Arroyo-Cottier, Andre
Arroyo-Cottier
Junior 7/8 Health Sciences Human
Our Lady of Fatima, HCDSB

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Valerie Trujillo-Houghton,
Stephany Lopez
Junior 7/8 Health Sciences Human
St. Augustine, HWCD

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Marcus Rilling
Junior 7/8 Health Sciences Human
St. Augustine, HWCD

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Arianna Lupo, Maddie Welch
Junior 7/8 Health Sciences Human
Hillfield Strathallan College, IND

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griffin elsley
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

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Krish Joshi
Junior 7/8 Health Sciences Human
St. Thomas the Apostle
(Waterdown), HWCD

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Bridget Le Donne
Junior 7/8 Health Sciences Human
Corpus Christi, HWCD

D10 Facebook Detox

Ben Boudreau
Junior 7/8 Health Sciences Human
Hillfield Strathallan College, IND

D11 Cholera Curing Kit

Aliyah Campuzano, Hannah
Junior 7/8 Health Sciences Human
St. Joseph, HWCD

D12 Does Playing Basketball Mike You Taller?

Hunter Culhane, Awais Irshad
Junior 7/8 Health Sciences Human
Escarpment View Public School,
HDSB

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D13 Grand-Paws

Erin McOstrich
Junior 7/8 Life Sciences Non-Human
Oakville Christian School, IND

D14 Is it possible to increase the growth rate and lifespan of a C3 plant in drought conditions?

Jace Ellis
Intermediate 9/10 Life Sciences Non-Human
Hillfield Strathallan College, IND

D15 Synthesizing silver nanoparticles onto cellulose to create an antimicrobial wound dressing.

Camila Moran-Hidalgo, Zoe Chisholm
Junior 7/8 Life Sciences Non-Human
Sir William Osler, HWDSB

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Gracie McGeachy, Ally Dundass
Junior 7/8 Life Sciences Non-Human
Dr. John Seaton, HWDSB

D17 The Effect of Aspirin Water on Plant Growth and Seed Germination

Omar Dabash, Michael Timmer
Intermediate 9/10 Life Sciences
Non-Human
Hillfield Strathallan College, IND

D18 How does drought, water, And water based solutions affect germination and growth rate

Liam Sammut
Intermediate 9/10 Life Sciences
Non-Human
Hillfield Strathallan College, IND

D19 Is Your Plant Sick?

Aiza Ahmad, Saniyah Shaikh
Junior 7/8 Life Sciences Non-Human
Tiger Jeet Singh, HDSB

D20 Spinning clean

Nikki Morin,
Shea St-Amand
Junior 7/8 Life Sciences Non-Human
John William Boich, HDSB

D21 5 second rule

Jassleen Gill, Ella Restauri
Junior 7/8 Life Sciences Non-Human
St. Paul, HWCD

E01 Close Your Laptop Pick Up Your Pencil

Immy Govan
Junior 7/8 Health Sciences
Human
Appleby College, IND

E02 Size Matters with Telomeres

Jazm Labarentos
Junior 7/8 Health Sciences
Human
St. Agnes, HWCD

E03 Fear Factor

Ethan Stoltz
Junior 7/8 Health Sciences
Human
St. Joachim, HWCD

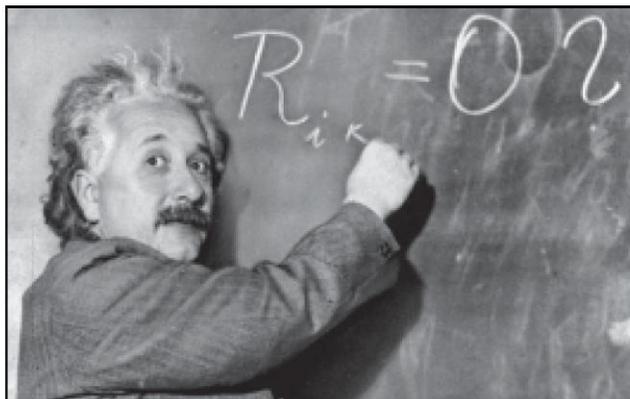
E04 Banish Bad Breath

Urmi Sheth
Junior 7/8 Health Sciences
Human
W. H. Morden Public School,
HDSB



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~ Albert Einstein

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David Hansen, Director of Education**

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PROJECT LISTING (Continued)

E05 The Halo Effect

Amy Goodes, Madeline Loewith
Junior 7/8 Health Sciences Human
Sir William Osler, HWDSB

E06 Acid Attack

Lauryn Winters, Hessa Asmani
Junior 7/8 Health Sciences Human
Escarpment View Public School,
HDSB

E07 ADD and ADHD, is There a Difference?

Olivia Biancucci
Junior 7/8 Health Sciences Human
St. David, HWCD

E08 Microwave Assisted Extraction of Natural Heartburn Remedy

Nathalia Casadei
Senior 11/12 Health Sciences
Human
King's Christian Collegiate, IND

E09 Now You See Me, Now You Don't

Morgan Kennedy, Lauren Dennie
Junior 7/8 Health Sciences Human
St. Joachim, HWCD

E10 Arthritis and First Nations People: Managing Chronic Pain

Angelina Bomberry
Intermediate 9/10 Health
Sciences
Human
Assumption College School,
BHNCD

E11 How Long Did That Take?

Akanksha Pahargarh, Katherine Li
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

E12 Fingerprint Personalities

Alyssa Dunn, Ayra Siddiqui
Junior 7/8 Health Sciences Human
Tiger Jeet Singh, HDSB

E13 Absence Effects

Jersey Hill, Jaden Squire
Junior 7/8 Health Sciences Human
Oliver M. Smith Kawennio:io, SNS

E14 Baking Substitutions and how They Affect the Final Product

Zac Correia, Tyler Kiernan
Junior 7/8 Health Sciences Human
John William Boich, HDSB

E15 Antiseptic properties of solutions

Olivia Wai, Jinny Kim
Senior 11/12 Health Sciences Human
Robert Bateman High School, HDSB

E16 Driven to Distraction

Navya Sheth
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB

E17 Memory Mnemonics

Isabella Schneider, Natalia Giannini
Junior 7/8 Health Sciences Human
Immaculate Heart of Mary, HWCD

E18 Music To My Brain?

Natalie Wilkinson
Junior 7/8 Health Sciences Human
St. David, HWCD

E19 The Effect of Caffeine on Intelligence

Layma Rashid
Junior 7/8 Health Sciences Human
Al-Falah Islamic School, IND

E20 The Growing Mind of An Athlete

McKayla Jarvie, Rachael Irvine
Senior 11/12 Health Sciences Human
Paris District High School, GEDSB

E21 The Effects of Alkalinity and Acidity on the Health of Human Epithelial Cells and the Prevention and Alteration of Cancer

Taiya Lakhnopal
Junior 7/8 Health Sciences Human
Sir William Osler, HWDSB

F01 Now You See It - Now You Don't

Max Guorgui, Mason Rivera
Junior 7/8 Health Sciences Human
Oakville Christian School, IND

F02 The Fatigue Factor

Nicolas Santini
Junior 7/8 Health Sciences Human
Regina Mundi, HWCD

F03 To Eat or Not to Eat

Shiyan Liu, Kyle Sue-A-Quan
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB

F04 Feelin' Blue?

Ali Nelson, Heeya Song
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB

F05 Stress

Lauren Chan, Lauren Sparling
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

F06 Boggle Your Brain

Sierra Barnes, Maahum Ali
Junior 7/8 Health Sciences Human
Tiger Jeet Singh, HDSB

F07 The Magnetic Hairbrush

Olivia DiPaolo, Jenna Kincaid
Junior 7/8 Health Sciences Human
John William Boich, HDSB

F08 Colour Your Words

Laura Persichini, Lidia Barbera
Junior 7/8 Health Sciences Human
Sts. Peter & Paul, HWCD

F09 How Nighttime Activity Effects Your Sleep?

Maxx Diniz, Lucas Haydock
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

F10 How chemicals in food effect the minds of humans

Kyrensa Melo
Junior 7/8 Health Sciences Human
Our Lady of Fatima, HCDSB

F11 Memory: TV vs Reading

Natalie Murphy, Kalya Gannage
Junior 7/8 Health Sciences Human
St. Augustine, HWCD

PROJECT LISTING (Continued)

F12 Do You Really Need That Pick Me Up

Angelica DiGiacinto
Junior 7/8 Health Sciences Human
Immaculate Heart of Mary, HWCD

F13 The Milky Way

Gaia Carboni, Tehya Alexander
Junior 7/8 Health Sciences Human
Hillfield Strathallan College, IND

F14 Is Playing Video Games Bad For Your Heart

Charlie Kompare
Junior 7/8 Health Sciences Human
St. Paul, HWCD

F15 Diet Against Cancer

Alexandra Rudic, Mia Eisenkoelbl
Junior 7/8 Health Sciences Human
St. Bernadette, HCDSB

F16 Does Peripheral Vision Decrease Over Time?

Fizza Usman
Junior 7/8 Health Sciences Human
Dalewood, HWDSB

F17 Ice Ice Baby

Billy Piliouras, Nabil Haider
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB

F18 Listening my way to a Gold Medal: The Impact of Music on Athletes' Performance

Emily Peetsma, Milena Dubajic
Junior 7/8 Health Sciences Human
John William Boich, HDSB

F19 Liquids: The Game Changer

Myles Mackesy, Leila Casasanta
Junior 7/8 Health Sciences Human
Hamilton Academy of Performing
Arts, IND

F20 Scents and Memory

Lucy Edgar, Paige Murray
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

F21 Effects of Eye colours on Different Eye Colours

Arsh Deep Bhamral
Junior 7/8 Health Sciences Human
Dalewood, HWDSB

G01 Mind Full or Mindful?

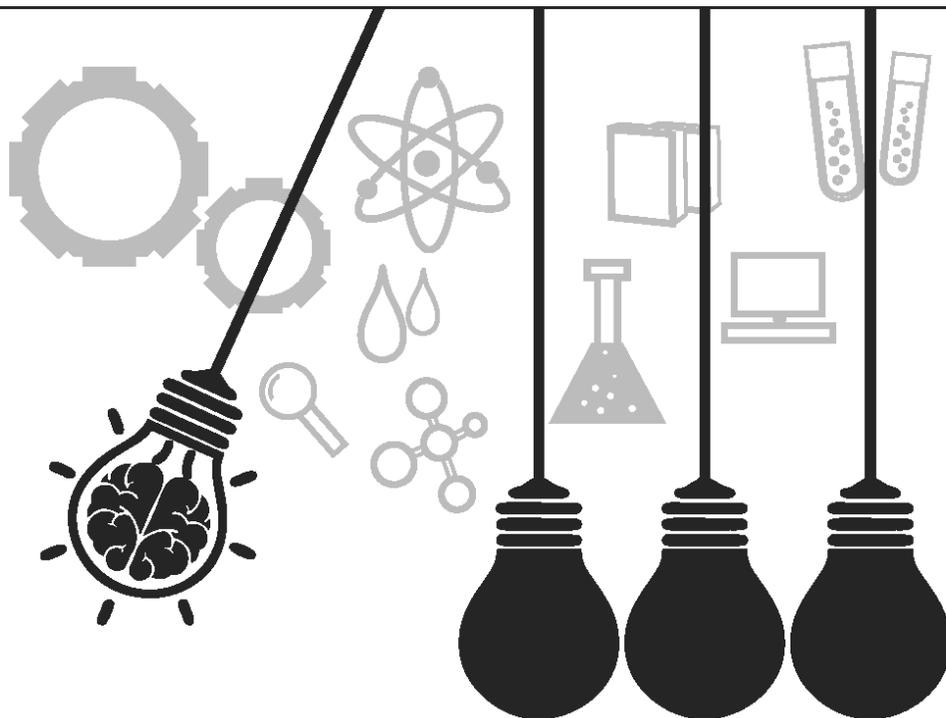
Ashvin Moro
Intermediate 9/10 Health Sciences
Human
Hillfield Strathallan College, IND

G02 Font Mnemonics

Thisari Premawardena
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB



Good luck
to all the
2016 BASEF
participants!



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PROJECT LISTING (Continued)

G03 The Stroop Effect

Caroline Taylhardat
Junior 7/8 Health Sciences Human
St. Bernadette, HCDSB

G04 Stressed Out

Kayla Sapir, Jessica Ge
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

G05 Re-Creating Organs 101: Research On The Transformation of Cells To Create Organs

Raiyan Sayeed
Junior 7/8 Health Sciences Human
Dalewood, HWDSB

G06 Quickest Way To Stain Your Teeth

Zoya Hasan
Junior 7/8 Health Sciences Human
Tiger Jeet Singh, HDSB

G07 Study by Memory

Olivia Farrell, Grace Cameron
Junior 7/8 Health Sciences Human
St. Augustine, HWCD

G08 What is it Like to Experience Schizophrenia?

Carolina Martinez
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

G09 The Battle Of Coagulation

Giuliano Serafino
Junior 7/8 Health Sciences Human
Immaculate Heart of Mary, HWCD

G10 Does chewing gum improve memorization?

Alicia Lezon, Meghan Loten
Junior 7/8 Health Sciences Human
Ancaster Senior, HWDSB

G11 Rock Paper scissors

Nolan Clark, Ryan Rothwell
Junior 7/8 Health Sciences Human
Sir William Osler, HWDSB

G12 Videogames Are Always Half Real

Brenon Lickers, Savannah Montour
Junior 7/8 Health Sciences Human
J. C. Hill Elementary, SNS

G13 Is the dominant hand better able to endure cold?

Humna Khan, Myra Tabassum
Junior 7/8 Health Sciences Human
Escarpment View Public School,
HDSB

G14 A Gut Feeling

Ali Miller-Boothe, Parinita Arora
Intermediate 9/10 Health Sciences
Human
Hillfield Strathallan College, IND

G15 Smart Gum ?

Ali Tahboub
Junior 7/8 Health Sciences Human
Appley College, IND

G16 Extraction of Polyphenols and Iodometric Back Titration of Caffeine in Matcha Green Tea

Alexander Mastrodonardo
Senior 11/12 Health Sciences Human
King's Christian Collegiate, IND

G17 What's in your make up bag: harmful products

Jocelyn Crossman
Junior 7/8 Health Sciences Human
Hamilton Academy of Performing
Arts, IND

G18 Talk To Me

Amelia Smith
Junior 7/8 Health Sciences Human
Oakville Christian School, IND

G19 # ADDICT

Gabriella Moraes Rae
Junior 7/8 Health Sciences Human
Oakville Christian School, IND

G20 The Relief Race

Maya Grguric
Junior 7/8 Health Sciences Human
Immaculate Heart of Mary, HWCD

G21 Colour psychology

Ethan Ramacieri, Wally Rokoss
Junior 7/8 Health Sciences Human
St. Joseph, HWCD

H01 IQ: Is It A Personality Trait?

Mehar Soni
Intermediate 9/10 Health Sciences
Human
Hillfield Strathallan College, IND

H02 Characteristics of Music in Correspondence to Listener Preference

Carolyn Moeller
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB

H03 The Adrenaline Response

Jordan Anderson, Erika Green
Junior 7/8 Health Sciences Human
Hamilton Academy of Performing
Arts, IND

H04 The Effect of Electric Currents on Bacterial Growth

Madeline Wighardt, Bianca Simone
Intermediate 9/10 Health Sciences
Human
Hillfield Strathallan College, IND

H05 Effect of Macelignan Containing Mace on Cavity Initiating Bacteria Streptococcus mutans

Vian Raphael
Senior 11/12 Health Sciences
Human
King's Christian Collegiate, IND

H06 Testing Temptation

Maeve Roche, Marilia Fonseca
Junior 7/8 Health Sciences Human
St. Joseph, HWCD

H07 Polyphenols in Moringa

Hyunyoung Oh
Senior 11/12 Health Sciences
Human
King's Christian Collegiate, IND

H08 Why City of Hamilton is collecting Tick?

Areeba Qureshi
Junior 7/8 Health Sciences Human
W. H. Ballard, HWDSB

PROJECT LISTING (Continued)

H09 Is Your Memory Running Away From You?

Madison Cote
Junior 7/8 Health Sciences Human
Appleby College, IND

H10 The Handy Effect of Video Games

Alexandra Kolios
Intermediate 9/10 Health Sciences Human
Hillfield Strathallan College, IND

H11 The Biggest Influence: A teacher or you?

Vaishala Thirugnanasampanthar,
Elizabeth Li
Intermediate 9/10 Health Sciences Human
Westdale, HWDSB

H12 Investigating the Effects of Flavonoids on Memory Function

Ainsley Morrison
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

H13 How does being colour blind and having glasses affect the way people see illusions?

arza aslam, Nabiha Ashraf
Junior 7/8 Health Sciences Human
Tiger Jeet Singh, HDSB

H14 Dealing With Diabetes

Sarah Campbell, Lexus Lucier
Junior 7/8 Health Sciences Human
Hillfield Strathallan College, IND

H15 Adaptation: How Do We Respond

Brendan Reynolds
Junior 7/8 Health Sciences Human
St. Joachim, HWCD

H16 Improving Your Memory; it's as Easy as a Walk in the Park!

Reagan Lindsay
Junior 7/8 Health Sciences Human
Oakville Christian School, IND

H17 Why aren't all medicines pills?

Emily Wadham
Junior 7/8 Health Sciences Human
Our Lady of Fatima, HCDSB

H18 WI-FI Does What?

Dominic Mothe
Junior 7/8 Health Sciences Human
Immaculate Conception, HWCD

H19 What makes a fingerprint unique?

Jaden Mendoza
Junior 7/8 Health Sciences Human
Our Lady of Fatima, HCDSB

H20 Double Tongued: Bilingualism's Effect of Brain Development in Children.

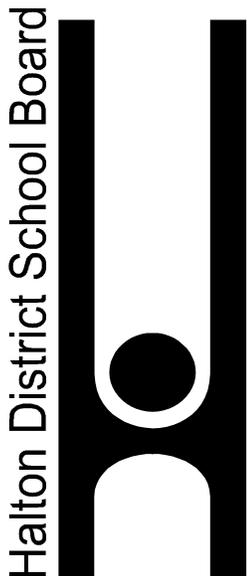
Henry Greenberg
Junior 7/8 Health Sciences Human
Forest Trail Public School, HDSB

H21 Work Smarter, Not

Tasnia Noshin
Junior 7/8 Health Sciences Human
Dalewood, HWDSB

J01 Train Your Brain

Alexander Tran, Adrian quintanilla
Junior 7/8 Health Sciences Human
St. Joseph, HWCD



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PROJECT LISTING (Continued)

J02 Microwave Assisted Extraction of Natural Heartburn Remedies

Nathalia Casadei
Senior 11/12 Health Sciences Human
King's Christian Collegiate, IND

J03 The Effect of Mouthwash on Bacteria

Aribah Rauf
Junior 7/8 Health Sciences Human
Al-Falah Islamic School, IND

J04 Chide the Prejudice

Janice Qiu, Ria Gambhir
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB

J05 Extraction Action - How to Extract DNA at Home

Shantel Berrio
Junior 7/8 Health Sciences Human
Immaculate Conception, HWCD

J06 Malnutrition: The Unexpected Killer

Joey Bruccoleri
Junior 7/8 Health Sciences Human
St. Agnes, HWCD

J07 Identifying Ideal Typography/Font for Individuals with ADHD

Sydney Kim, Chelsea Tanchip
Senior 11/12 Health Sciences Human
Abbey Park High School, HDSB

J08 Video Games - Why Can't I Stop Playing

Lucas Poirier
Junior 7/8 Health Sciences Human
Appleby College, IND

J09 Should You Do It? Should You Not?

Rand Amer, Tasnim Alam
Junior 7/8 Health Sciences Human
Dalewood, HWDSB

J10 Does smell affect taste?

Tia Luxon, Cassandra Marciano-Connolly
Junior 7/8 Health Sciences Human
St. Mary, HCDSB

J11 Teeth, Braces, and Coffee

Yifan Wang, Hiva Askari
Junior 7/8 Health Sciences Human
Maple Grove Public School, HDSB

J12 Effects of Alcohol on Brain Cells: are we paying "egg-stra" attention?

Olivia Pace, Maddison Posteraro
Junior 7/8 Health Sciences Human
Immaculate Conception, HWCD

J13 The Secret Behind the Swish

Sophia Herrington
Junior 7/8 Health Sciences Human
Dalewood, HWDSB

J14 TETRALOGY OF FALLOT

An'NIRAH Thomas
Junior 7/8 Health Sciences Human
St. Bernadette, HCDSB

J15 Fontastic!

Muhadisa Ali
Junior 7/8 Health Sciences Human
W. H. Morden Public School, HDSB

J16 DNA vs Drugs

Grace Lemmen
Junior 7/8 Health Sciences Human
Immaculate Heart of Mary, HWCD

J17 Pain or gain, what's the greater motivator?

Rania Mujib, Safia Damji
Junior 7/8 Health Sciences Human
Escarpment View Public School,
HDSB

J18 Can You Read?

Madi Penny
Junior 7/8 Health Sciences Human
John William Boich, HDSB

J19 Classical Concentration

Abeer Muhammad, Iman Bhutto
Junior 7/8 Health Sciences Human
Tiger Jeet Singh, HDSB

J20 Fact Or Fiction?

Julia Seymour, Jessica Hales
Junior 7/8 Health Sciences Human
St. Bernadette, HCDSB

J21 Genetics, Diseases, And Brain Development

Talla Enaya, Emily Wright
Junior 7/8 Health Sciences Human
Irma Coulson Public School, HDSB

K01 Fruit and vegetable power

Anas Ali
Junior 7/8 Phys & Math Sci
Tiger Jeet Singh, HDSB

K02 The Effect of Pressure on Chemical Reactions

Aeena Asif
Junior 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

K03 Does The Distance Between Dominoes Effect The Speed That They Fall?

Mark Mccready, Fadi Graise
Junior 7/8 Phys & Math Sci
St. Bernadette, HCDSB

K04 The Nut Bomb

Michael Ballantyne
Junior 7/8 Phys & Math Sci
Regina Mundi, HWCD

K05 How Much Gluten is in Flour?

Vincenza Cino, Isabella Chiarini
Junior 7/8 Biotechnology
St. Eugene, HWCD

K06 Does the pH of your diet matter

Alexandra Fram
Junior 7/8 Biotechnology
Regina Mundi, HWCD

K07 Pump 'n' Preserve

Rishi Popuri
Junior 7/8 Biotechnology
Hillfield Strathallan College, IND

K08 Mr. Icky Sticky

Keelan McVay, Leighanne McKeage
Junior 7/8 Biotechnology
St. Mary, HCDSB

PROJECT LISTING (Continued)

K09 Synthesis of Ethanol from Seaweed

Adrianna Wimmers, Mycah DeJong
Senior 11/12 Biotechnology
King's Christian Collegiate, IND

K10 Researching Different Types of Amino Acid and bNab Properties to Target HIV Glycoprotein GP120 and Accessory Proteins

Andy Xie, Aman Adhav
Senior 11/12 Biotechnology
White Oaks School, HDSB

K11 Air Patrol

Cassidy Lawson
Junior 7/8 Biotechnology
St. Augustine, HWCD

K12 Is there a correlation between genetically engineered peanuts, and increased peanut allergies ?

Shiza Hassan
Intermediate 9/10 Biotechnology
White Oaks School, HDSB

K13 Manipulating Liquid-Suspended Strings with Audio

William MacLeod, Mikayil Malikov
Senior 11/12 Biotechnology
Westmount, HWDSB

K14 Receptor-Mediated Therapeutic Delivery across the Blood-Brain Barrier

Hao Yuan (Mark) Bai
Senior 11/12 Biotechnology
Abbey Park High School, HDSB

K15 Rising High

Kiana Carpino, Martina Sarabura
Junior 7/8 Biotechnology
St. Joachim, HWCD

K16 Batteries That Grow On Trees

William Oliver
Junior 7/8 Biotechnology
St. Augustine, HWCD

K17 Bay Area Water Quality Improvement Pilot Project

TAHSIN KARIM
Intermediate 9/10 Biotechnology
Westmount, HWDSB

K18 Antacid Potency

Safiyah Atcha
Junior 7/8 Health Sciences Human
Al-Falah Islamic School, IND

K19 Does BMI accurately represent one's fitness?

Theresa George,
Shengqi (Chelsey) Zhao
Intermediate 9/10 Health Sciences
Human
Robert Bateman High School, HDSB

K20 Curcumin: From Kitchen to Clinic: A Study of the Benefits of Curcumin against Neurodegenerative Diseases.

Sadhana Jeyakumar, Anne Fu
Junior 7/8 Health Sciences Human
Dalewood, HWDSB

K21 Think fast- Caffeine or Sugar

Ella Walker
Junior 7/8 Health Sciences Human
Appleby College, IND

L01 Reaction Time

Shauntay Longboat
Junior 7/8 Phys & Math Sci
J. C. Hill Elementary, SNS

L02 Rainbow Eruptions

Olivia Scarcelli
Junior 7/8 Phys & Math Sci
St. Bernadette, HCDSB

L03 Does flex matter

Colin Di Federico, Alec Banitsiotis
Junior 7/8 Phys & Math Sci
St. Joachim, HWCD



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PROJECT LISTING (Continued)

L04 Math+ Memory- Does

Math improve math

Lachlan Perigord
Junior 7/8 Phys & Math Sci
St. Augustine, HWCD

L05 N.N.A.H. Nails Need A Home

Alejandra Hernandez-Lizarazo,
Summer Park
Junior 7/8 Phys & Math Sci
St. Mary, HCDSB

L06 Flex Affect

Mark Novakovic, Hudson
LaFayette
Junior 7/8 Phys & Math Sci
Maple Grove Public School, HDSB

L07 What effect does temperature have on battery life?

Asma Jaseem
Junior 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

L08 The Multiverse

Tasmiya Asif, Ammal Bhali
Junior 7/8 Phys & Math Sci
Escarpment View Public School,
HDSB

L09 Will a Pumpkin Float on Water?

Sabrina Vioria, Erika Tandarich
Junior 7/8 Phys & Math Sci
St. Mary, HCDSB

L10 Spectacular Spectrometers

Kiara Theron
Junior 7/8 Phys & Math Sci
Oakville Christian School, IND

L11 PVCPS VS PTRS

Cameron Richardson, Rein Macaraig
Junior 7/8 Phys & Math Sci
St. Mary, HCDSB

L12 The Effect of Electromagnetization on a Magnets Magnetic Field

Saim Qureshi
Junior 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

L13 The Science Of Ferrofluid

Jared Corry, Brodin Driedger
Junior 7/8 Phys & Math Sci
St. Bernadette, HCDSB

L14 supercooling and snap freezing water

Sasha Sychikov
Junior 7/8 Phys & Math Sci
Hamilton Academy of Performing
Arts, IND

L15 The effect time and temperature variations have on different insulation materials

Hassaan Inayatali
Intermediate 9/10 Phys & Math Sci
Hillfield Strathallan College, IND

L16 The Power Of Bleach

Navreet Gandhi, Jason Robinson
Junior 7/8 Phys & Math Sci
Tiger Jeet Singh, HDSB

L17 Face Off!

Shailee Sandy, Sierra Green
Junior 7/8 Phys & Math Sci
J. C. Hill Elementary, SNS

L18 millusions

cyprien petiteville
Junior 7/8 Phys & Math Sci
St. Bernadette, HCDSB



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PROJECT LISTING (Continued)

L19 Ice-A-Nator

Avery Mende-Gibson, Bella
Junior 7/8 Phys & Math Sci
Tiger Jeet Singh, HDSB

L20 how to make a wooden lacrosse stick

francis thomas, phoenix green
Junior 7/8 Phys & Math Sci
J. C. Hill Elementary, SNS

L21 Getting a "Charge" Out of Your Energy Drink

Claire Emili
Junior 7/8 Phys & Math Sci
Dalewood, HWDSB

M01 Does Rocket Nozzle Design Affect Performance?

Rodrigo Salazar, Michael Croteau
Junior 7/8 Eng & Comp Sci
St. Bernadette, HCDSB

M02 Energy From Your Roof: Mini Wind Turbines

Isha Acharya
Junior 7/8 Eng & Comp Sci
Irma Coulson Public School, HDSB

M03 We AUTO Get Going

Abby Janssen, Avery Irwin
Intermediate 9/10 Eng & Comp Sci
Westdale, HWDSB

M04 Building Better Bridges

Jamie Rodgers
Junior 7/8 Eng & Comp Sci
Oakville Christian School, IND

M05 The Meixome Case

Lucas Mei, Ryan Jackson
Junior 7/8 Eng & Comp Sci
John William Boich, HDSB

M06 Homemade Phone Charger

Daniela da Costa, Naomi Oraegbu
Junior 7/8 Eng & Comp Sci
Our Lady of Fatima, HCDSB

M07 Portable Renewable Energy Phone Charger Using Thermoelectric and Solar Energy

Nicholas Winslow, sebastian winslow
Junior 7/8 Eng & Comp Sci
Maple Grove Public School, HDSB

M08 Wind Engineering: An Investigation to Aeroelastic Flutter Reduction on Suspension Bridges

Dylex Suan
Junior 7/8 Eng & Comp Sci
St. Christopher, HCDSB

M09 Bounce

Madison Restauri, Grace Opsteen
Junior 7/8 Phys & Math Sci
St. Augustine, HWCD

M10 CSI's Luminol

Declan Dawson, Alexander Raab
Junior 7/8 Phys & Math Sci
St. Paul, HWCD

M11 Can gravity be used to make our life easier

samuel lerma, ivan alcantara
Junior 7/8 Phys & Math Sci
St. Bernadette, HCDSB

M12 Flame On

Amelia Beltrame
Junior 7/8 Phys & Math Sci
Corpus Christi, HWCD

M13 What determines planetary orbit ?

India lawrence, Kayli Beeton
Junior 7/8 Phys & Math Sci
Maple Grove Public School, HDSB

M14 White Feather Hand Scrub

Courtney Mckeage, Angelica Anzaldi
Junior 7/8 Phys & Math Sci
St. Mary, HCDSB

M15 Which process creates the highest yield of casein plastic?

Kylie Stafford
Junior 7/8 Phys & Math Sci
Escarpment View Public School,
HDSB

M16 Voltage Generated by Pairs of Metals

Bohdan Mozharivsky, Noah Parfett
Junior 7/8 Phys & Math Sci
Sir William Osler, HWDSB

M17 The Synthesis of Silver Nanoparticles and Their Effects on Plant Growth

Alexander Waldie
Senior 11/12 Phys & Math Sci
King's Christian Collegiate, IND

M18 Which Laundry Detergent Works Best?

Sophie Barbisan
Junior 7/8 Phys & Math Sci
John William Boich, HDSB

M19 is attraction all about the math

Marlina Zeljeznjak, Cynthia Jimenez
Junior 7/8 Phys & Math Sci
St. Eugene, HWCD

M20 Sink or Swim - Comparing Liquid Densities

Tessa Marras, Samantha Fraser
Junior 7/8 Phys & Math Sci
St. Joachim, HWCD

M21 How Dense are You?

Braedan Dunn, Evan Solodenko
Junior 7/8 Phys & Math Sci
St. Joachim, HWCD

N01 age vs video game skill

Kaleb Mclean
Junior 7/8 Eng & Comp Sci
John William Boich, HDSB

N02 Self- Pumping Bicycle wheel

Alexander Ferro, Sean Gauthier
Junior 7/8 Eng & Comp Sci
St. Bernadette, HCDSB

N03 Operation Stealth: How an Object's Shape and Material Evade Detection By Light

Caleb Wong
Junior 7/8 Eng & Comp Sci
Oakville Christian School, IND

N04 Synthesis of Thermoresponsive pNIPAM-b-HEA Block Co-Polymer Hydrogels for Drug Delivery Applications

Radhika Khanna
Senior 11/12 Eng & Comp Sci
Westmount, HWDSB

PROJECT LISTING (Continued)

N05 AirZooka

Utsav Thukral, Ammar Khan
Junior 7/8 Eng & Comp Sci
Tiger Jeet Singh, HDSB

N06 The amazing power of magnetism

Tomas Fekete
Junior 7/8 Eng & Comp Sci
St. Joachim, HWCD

N07 Wind Turbine Efficiency

Sara Tufaha
Junior 7/8 Eng & Comp Sci
Al-Falah Islamic School, IND

N08 The effect of temperature on conductivity and resistance

Saman Islam
Junior 7/8 Eng & Comp Sci
Al-Falah Islamic School, IND

N09 Road Salt Ruination

Jessica Cotter
Junior 7/8 Eng & Comp Sci
St. Augustine, HWCD

N10 Wind Turbines. - Are They Safe?

Liam McGrath
Junior 7/8 Eng & Comp Sci
Immaculate Conception, HWCD

N11 Solar oven

Spencer Vandenbosch , Aaron
Sohail
Junior 7/8 Eng & Comp Sci
St. Mark, HWCD

N12 T.E.C.H - ThermoElectric Charging Hub

Syed Amman Waheed
Junior 7/8 Eng & Comp Sci
Dalewood, HWDSB

N13 Charcoal 'sucks'

Jayden Lee
Junior 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

N14 Brain Computer Interface

Ahmed Ibrahim
Senior 11/12 Eng & Comp Sci
Glendale. HWDSB

N15 Measuring the Effectiveness of Solar Panels

Danny Bartley
Junior 7/8 Eng & Comp Sci
Sir William Osler, HWDSB

N16 Hazardous Material Security Systems for Trains

Joshua Poon
Senior 11/12 Eng & Comp Sci
King's Christian Collegiate, IND

N17 Prosthetic Hand

Colby Skye, Conner Johns
Junior 7/8 Eng & Comp Sci
Oliver M. Smith Kawennio:io, SNS

N18 Shakin' it up!

Samuel Duncan
Junior 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

N19 Performance of an AC generator

Adam McLean
Junior 7/8 Eng & Comp Sci
St. Joachim, HWCD

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Toll-free: 1-800-868-1329
Fax: 905 546-4107
Email: economicdevelopment@hamilton.ca

PROJECT LISTING (Continued)

N20 From Dull To Dazzling

Wande Akinsooto, Chiara Simone
Junior 7/8 Eng & Comp Sci
Hillfield Strathallan College, IND

N21 Optimizing the performance of a Trebuchet through Design of Experiment

David Vidican
Junior 7/8 Eng & Comp Sci
St. Matthew, HCDSB

P01 Radio Rumble

Zach Donovan, Sean Balardo
Junior 7/8 Eng & Comp Sci
St. Joachim, HWCD

P02 Alcohol Sensory Key

Youssef Labib
Senior 11/12 Eng & Comp Sci
King's Christian Collegiate, IND

P03 In which conditions does rust form the fastest

Noha Sekhri
Junior 7/8 Eng & Comp Sci
Al-Falah Islamic School, IND

P04 EMFs in the Home

Abraham Wilkins, Marina D'Amore
Intermediate 9/10 Eng & Comp Sci
Home Schooling, IND

P05 Caught in a Corner

Matt Groot
Junior 7/8 Eng & Comp Sci
John Knox Christian School
(Oakville), IND

P06 How Will Autonomous Vehicles Change our Cities and How We Live?

Amelia Orzechowski
Junior 7/8 Eng & Comp Sci
Maple Grove Public School, HDSB

P07 Spice It Up!

Dylan Lemesurier
Junior 7/8 Eng & Comp Sci
St. Mary, HCDSB

P08 Harnessing the Temperature Difference in our Residential and Commercial Water Lines

Paul Drakos
Junior 7/8 Eng & Comp Sci
Hillfield Strathallan College, IND

P09 LinkAbility: A Small Link With A BIG Impact

Taylor Hanson
Junior 7/8 Eng & Comp Sci
John William Boich, HDSB

P10 The Magnetic Levitation Train

Zainab Iftikhar
Junior 7/8 Eng & Comp Sci
Rotherglen School (Oakville), IND

P11 Heat Your Feet

Carly Bardossy
Junior 7/8 Eng & Comp Sci
Immaculate Heart of Mary, HWCD

P12 A Design for a Biodegradable Quick Release Fishing Hook

Cole Hynes
Intermediate 9/10 Eng & Comp Sci
Hillfield Strathallan College, IND

P13 How Clean is Chlorine?

Denzel Payyapilly, Luke D'Ambrosi
Junior 7/8 Eng & Comp Sci
Hillfield Strathallan College, IND

P14 Multi-Purpose Self-Powering Warmer

Alexander Marinier,
Aakhaash Rakulann
Junior 7/8 Eng & Comp Sci
John William Boich, HDSB

P15 Coral and LEGO's: Surface Modification of Polycaprolactone and Hydroxyapatite Endosseous Implant Fixture Coatings

Samna Aziz
Senior 11/12 Eng & Comp Sci
Westmount, HWDSB

P16 A Flood Alarm: Using an Electric Circuit as a Warning System

Mateo Larrazabal
Intermediate 9/10 Eng & Comp Sci
Hillfield Strathallan College, IND

P17 Cleaning Coins

Caitlin Caradonna
Junior 7/8 Eng & Comp Sci
St. Joachim, HWCD

P18 The Quacker

Dylan Correia, Jordan Woods
Junior 7/8 Eng & Comp Sci
St. Mary, HCDSB

P19 What's your Frequency? Testing Radiofrequency Radiation from Cellular Phones

Grace Kemper
Junior 7/8 Eng & Comp Sci
Hillfield Strathallan College, IND

P20 The Steel Stick

Bailey Hill
Junior 7/8 Eng & Comp Sci
J. C. Hill Elementary, SNS

P21 Wearable Sonar Technology

Joseph Saturnino
Junior 7/8 Eng & Comp Sci
St. Margaret Mary, HWCD

Q01 Flipping the switch on energy conducting

Madison Lawrence,
Victoria Polidori
Junior 7/8 Eng & Comp Sci
Our Lady of Peace, HWCD

Q02 Why-Fi Distraction

Daniel Hagen, Zach Hagen
Junior 7/8 Eng & Comp Sci
St. Augustine, HWCD

Q03 Plant Growth Effects

Mackenzie Miller
Junior 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

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PROJECT LISTING (Continued)

Q04 May The Force Be Wind Use

Emma Martino
Junior 7/8 Earth & Env Sci
St. Margaret Mary, HWCD

Q05 Scientific Super Plants!

Mario Pardo, Sherif Nakhla
Junior 7/8 Earth & Env Sci
Our Lady of Fatima, HCDSB

Q06 Comment Est-Que les Plantes sont affetes por les Types et Quantities d' eau Purifie

Zahra Ben Sabeur, Eva Serbanoiu
Junior 7/8 Earth & Env Sci
Our Lady of Fatima, HCDSB

Q07 How Accurate Are Zodiac Signs?

Zaynab Somani
Junior 7/8 Earth & Env Sci
W. H. Morden Public School, HDSB

Q08 The Production of Natural Antibacterial Soap

Joshua Hogg
Senior 11/12 Earth & Env Sci
King's Christian Collegiate, IND

Q09 Pompeii

Natalia Gherghel, Carina Cerminara
Junior 7/8 Earth & Env Sci
St. Bernadette, HCDSB

Q10 Living Disconnected

Andrei Adam, Aidan Lehal
Junior 7/8 Earth & Env Sci
W. H. Morden Public School, HDSB

Q11 From the Garbage to the Garden

David Ribkoff
Junior 7/8 Earth & Env Sci
Oakville Christian School, IND

Q12 Blinded By the Light

Marcell Maitinsky
Junior 7/8 Earth & Env Sci
Hamilton Academy of Performing Arts, IND

Q13 Save Our Planet From Pain Stop Acid Rain

Matthew Wong
Junior 7/8 Earth & Env Sci
St. Joachim, HWCD

Q14 Reliable Lights

Joseph Penman, Matthew Frulling
Junior 7/8 Earth & Env Sci
Maple Grove Public School, HDSB

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Q15 Wasted Oil? Or Soap!

Netta Zhang
Senior 11/12 Earth & Env Sci
King's Christian Collegiate, IND

Q16 Plastic Solutions: Learning from the Past

Mark Rohac
Junior 7/8 Earth & Env Sci
St. Joachim, HWCD

Q17 Star People

Rilynn Montour, Kareesa Bomberry
Junior 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

Q18 Facing the Freshwater Crisis: An Innovative Way to Desalinate Salt Water

Vincent Milantoni
Intermediate 9/10 Earth & Env Sci
Hillfield Strathallan College, IND

Q19 How clean is Your Water?

Usba Gohir
Junior 7/8 Earth & Env Sci
Al-Falah Islamic School, IND

Q20 Beyond What the Eye Can See...

Harneet Hothi, Yufeng Du
Senior 11/12 Earth & Env Sci
North Park Collegiate and Vocational School, GEDSB

Q21 Soil Erosion: It's Going Down Hill

Sophie Thomas
Junior 7/8 Earth & Env Sci
Oakville Christian School, IND

R01 The Power of Mud (Using Microbial Fuel Cells to Generate Electricity)

Samuel Coleman
Junior 7/8 Earth & Env Sci
Oakville Christian School, IND



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PROJECT LISTING (Continued)

R02 Living without polymers?

Anja Agrusow
Intermediate 9/10 Earth & Env Sci
MacLachlan College, IND

R03 The effect of Air pressure on tornadoes

Javeria Salman
Junior 7/8 Earth & Env Sci
Al-Falah Islamic School, IND

R04 Do Plants Grow Faster With Music?

Mirna Aziz
Junior 7/8 Earth & Env Sci
St. Mary, HCDSB

R05 Fading Painted Sky

Sandra Elza Siby, Prema Kapoor
Junior 7/8 Earth & Env Sci
Escarpment View Public School,
HDSB

R06 Aquatic Osteoporosis: Remediating the emerging problem of lake calcium decline

Isabella O'Brien
Intermediate 9/10 Earth & Env Sci
Westmount, HWDSB

R07 A New Home

Sean Bergeron
Junior 7/8 Earth & Env Sci
St. Joachim, HWCD

R08 Spoils of Oil

Alyssa Carbone, Sofia DeBenedetti
Junior 7/8 Earth & Env Sci
St. Paul, HWCD

R09 Is it Worth Risking your Health for Clean Clothes

Viktoriya Gresova, Inessa Ratevosian
Junior 7/8 Earth & Env Sci
Hamilton Academy of Performing Arts, IND

R10 The Unique Properties of Coccolithophorid Algae

Jason Soliman
Junior 7/8 Earth & Env Sci
Our Lady of Fatima, HCDSB

R11 Ice Time

Isaac Squire-Hill, Selina Keye
Junior 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

R12 Bottles of Watered Down Lies

Mathew Maradin
Junior 7/8 Earth & Env Sci
Hillfield Strathallan College, IND

R13 Analysis of Chloride in Water

Maria Habib
Senior 11/12 Earth & Env Sci
King's Christian Collegiate, IND

R14 The Material of the Future

Nicole Portmann
Junior 7/8 Earth & Env Sci
Appleby College, IND

R15 How Solutes Affect Evaporation

Sahar Khan
Junior 7/8 Earth & Env Sci
Tiger Jeet Singh, HDSB

R16 Does caffeine affect plants growth?

Jillian Leaker
Junior 7/8 Earth & Env Sci
St. Paul, HWCD

R17 Reaction of plants in excessive carbon dioxide environment

Winston Hou, Justin Kim
Intermediate 9/10 Earth & Env Sci
White Oaks School, HDSB

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PROJECT LISTING (Continued)

R18 A Theoretical and Experimental Model of Residential Water Conservation

Paras Pujari
Intermediate 9/10 Earth & Env Sci
Dundas Valley, HWDSB

R19 GIVE THE WORMS A TASTE, USE YOUR FOOD WASTE

Sydney Sheppard, Sofia Spoljar
Junior 7/8 Earth & Env Sci
St. Paul, HWCD

R20 Honey Crystals

Lovisa Alatalo
Junior 7/8 Earth & Env Sci
Appleby College, IND

R21 What type of water microwaved water or purified water has a better affect on the growth of plants

Sarah Gonsalves
Junior 7/8 Earth & Env Sci
Our Lady of Fatima, HCDSB

S01 Why do leaves change color in the Fall?

Maithili Patel
Junior 7/8 Earth & Env Sci
Irma Coulson Public School, HDSB

S02 Household Items Meet a New Cleaning Solution

Brooke Hewitt, Alessia Huma
Junior 7/8 Earth & Env Sci
John William Boich, HDSB

S03 The Effects of Mirrors On Solar Panels

Liam McNeely
Junior 7/8 Earth & Env Sci
Appleby College, IND

S04 Dry Ice Bubbles

Estefano Jauslin, Thomas Jezerinac
Junior 7/8 Earth & Env Sci
St. Mary, HCDSB

S05 Thunderstorms

Dylan Miller, Sierra Squire
Junior 7/8 Earth & Env Sci
J. C. Hill Elementary, SNS

S06 How can we repair the Ozone Layer

Ashir Akhter
Junior 7/8 Earth & Env Sci
Escarpment View Public School, HDSB

S07 The Effect of Carbon Dioxide from Different Sources on the Temperature of the Air

Maryam Chaudhry
Junior 7/8 Earth & Env Sci
Al-Falah Islamic School, IND

S08 Eco Conscious, A Filtration System for Household Grey Water

Brooke Westwater
Junior 7/8 Earth & Env Sci
Maple Grove Public School, HDSB

S09 The Chemical Solutions

Vanessa Manevska,
Brianna Beaulieu
Junior 7/8 Earth & Env Sci
Immaculate Heart of Mary, HWCD



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PROJECT LISTING (Continued)

S10 Wastewater

Joely Bye
Junior 7/8 Earth & Env Sci
Sir William Osler, HWDSB

S11 Soil Matters

Katie Trepyszko,
Hannah Toy
Junior 7/8 Earth & Env Sci
W. H. Morden Public School,
HDSB

S12 Nuclear Energy

- Fusion is Not an Illusion
Aaron Shannon
Junior 7/8 Earth & Env Sci
St. Luke, HWCD

S13 Salty Sprouts

Devon McAlpine
Junior 7/8 Earth & Env Sci
Sir William Osler, HWDSB

S14 Do Chemical Elements Aid Or Suppress The Germination Of Plants

Denver Longboat
Junior 7/8 Earth & Env Sci
Oliver M. Smith
Kawennio:io, SNS

S15 Melting an ice cube

jared john
Junior 7/8 Earth & Env Sci
I. L. Thomas Odadrahonyanita, SNS

S16 An Effective Method of Cleaning Up Oil Spills

Nabil Ghobrial
Junior 7/8 Earth & Env Sci
Our Lady of Fatima, HCDSB

S17 The Most Effective Method of Leaf Disposal with Minimal Carbon Dioxide Emission

Anna Spencer, Maja Barrett
Intermediate 9/10 Earth & Env Sci
Hillfield Strathallan College, IND

S18 Can They Survive Our Meddling?

Xiaoxi (Grace) Zhou
Senior 11/12 Earth & Env Sci
North Park Collegiate and
Vocational School, GEDSB

S19 Protective Coke

Christoph Fusch
Junior 7/8 Earth & Env Sci
Ancaster Senior, HWDSB

S20 Worm Wars: The Soil Awakens

Hayden Lapko, Thomas Jeneway
Junior 7/8 Earth & Env Sci
Oakville Christian School, IND

S21 Combustion Obstruction

Rachel Schoester
Junior 7/8 Earth & Env Sci
Appleby College, IND

T01 Which Food Will Mold the Fastest?

Manal Abbasi, Fatima Sobaih
Junior 7/8 Life Sciences Non-Human
Tiger Jeet Singh, HDSB

T02 Bacteria growth

Sophia Alongi
Junior 7/8 Life Sciences Non-Human
Immaculate Heart of Mary, HWCD

T03 The effect of heat on enzyme activity

Mahnour Ahmad
Junior 7/8 Life Sciences Non-Human
Al-Falah Islamic School, IND

T04 The Glass with the Most Gas

Jenna Boyd, Emily Shea
Junior 7/8 Life Sciences Non-Human
St. Joachim, HWCD



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*Paula Dawson
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PROJECT LISTING (Continued)

T05 **Mould No More**

Brooke Hamilton, Victoria Bylina
Junior 7/8 Earth & Env Sci
St. Mary, HCDSB

T06 **Windows On Mac?**

Michael Filice,
Matthew Dimartino
Junior 7/8 Eng & Comp Sci
Immaculate Heart of Mary, HWCD

T07 **Virtual Reality Headset**

Daniel Grbavac, Noah Botelho
Junior 7/8 Eng & Comp Sci
St. Mary, HCDSB

T08 **Propel Yourself to Clean Energy**

Isabela Jumao-As, Mahek Patel
Junior 7/8 Eng & Comp Sci
Tiger Jeet Singh, HDSB

T09 **TiC-TONGUE INTERFACE COMMUNICATION Assistive Technology for Severe Impairments**

Emma Mogus
Senior 11/12 Eng & Comp Sci
White Oaks School, HDSB

T10 **Novel Approach to the Detection and Prevention of Cyberbullying in Social Media**

Moeyyad Qureshi,
Tuneer Mondal
Senior 11/12 Eng & Comp Sci
Westmount, HWDSB

T11 **Overcharge**

Rayyan Hasan, Saad Asad
Junior 7/8 Eng & Comp Sci
Tiger Jeet Singh, HDSB

T12 **How to build a Smart Collar**

Alicia Ruetas
Junior 7/8 Eng & Comp Sci
Alexander's Public School, HDSB

T13 **iDeliver**

Esha Pisharody
Junior 7/8 Eng & Comp Sci
John William Boich, HDSB

T14 **Busy Brains: A Study Of The Brain Through**

Technological Advancement
Nakul Malhotra, Markus Kunej
Intermediate 9/10 Eng & Comp Sci
North Park Collegiate and Vocational School, GEDSB

T15 **CAN WE SKATEBOARD ON AIR?**

Kai Abdool, kieran o'connell
Junior 7/8 Eng & Comp Sci
St. Mary, HCDSB

T16 **Dynamic Street Furniture**

Angus Cowan, Zayed Elbadri
Senior 11/12 Eng & Comp Sci
North Park Collegiate and Vocational School, GEDSB

T17 **Is 4k really better?**

Jack Peros
Junior 7/8 Eng & Comp Sci
Maple Grove Public School, HDSB



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PROJECT LISTING (Continued)

T18 Non-Newtonian Fluids

Zaira Qaisar, Hani Tayyab
Junior 7/8 Phys & Math Sci
Escarpment View Public School, HDSB

T19 Levitation With Sound

Sameer Waheed, Thomas Lawford
Junior 7/8 Phys & Math Sci
Dalewood, HWDSB

T20 Which Electrolyte Solution Conducts an Electrical Current the Best During Electrolysis?

Hamza Siddiqui
Junior 7/8 Phys & Math Sci
Al-Falah Islamic School, IND

T21 Desalinization

Simon Vandermolen, Eric Buys
Junior 7/8 Biotechnology
John Knox Christian School
(Oakville), IND

U01 Homemade Raspberry Pi

Patty Meza
Junior 7/8 Eng & Comp Sci
Hillfield Strathallan College, IND

U02 Tapping Into Ocean Energy Using Piezoelectricity

Arielle Ainabe
Intermediate 9/10 Eng & Comp Sci
Garth Webb Secondary School, HDSB

U03 At A Measured Step: An Orthopaedic Pressure-Based Rehabilitative Insole

Katie Brent
Senior 11/12 Eng & Comp Sci
Notre Dame, HCDSB

U04 Off-Peak Energy Manager (O.P.E.M.) controlling Wireless Automation

Thomas Habicht
Senior 11/12 Eng & Comp Sci
Home Schooling, IND

U05 EMMA: Effortless Massaging Machine Assistant - Innovation

Ghufran Al-Bander
Intermediate 9/10 Eng & Comp Sci
Robert Bateman High School, HDSB

U06 Cool and Fresh

Mina Abdelsaied, Sebastian Petrilli
Junior 7/8 Eng & Comp Sci
St. Mary, HCDSB

U07 Salt Water Desalination

Alex Massa
Junior 7/8 Eng & Comp Sci
Our Lady of Fatima, HCDSB

U08 Smart Chemistry Behind Smartphones

Aadar Gupta, Harshdeep Banga
Junior 7/8 Eng & Comp Sci
Helen Detwiler, HWDSB

U09 Slowing Down To Power Your Town

Caroline Mahut
Senior 11/12 Eng & Comp Sci
M. M. Robinson High School, HDSB

U10 Wi-Tricity on Wheels: Solar / Hydro Wireless Charging of Electric Vehicles

Michael Wolfe
Junior 7/8 Eng & Comp Sci
Trinity Christian School, IND

U11 Improving Wireless Electricity

Sabrina Stojanovic
Junior 7/8 Eng & Comp Sci
Winona, HWDSB

U12 The Pneumatic Exo-Arm

Aaron Spence, Matthew Spence
Junior 7/8 Eng & Comp Sci
St. Bernadette, HCDSB

U13 Pocket Shield

Maya Oster, Erin Demopolis
Intermediate 9/10 Eng & Comp Sci
Hillfield Strathallan College, IND

U14 The Mystery of Moisture Content

Samantha Mae Yson
Junior 7/8 Eng & Comp Sci
W. H. Morden Public School, HDSB

U15 Graphene Reinforced Guayule Rubber- Conductive Hypoallergenic Super Nanocomposite

Jack Mogus
Intermediate 9/10 Eng & Comp Sci
Garth Webb Secondary School, HDSB

PROJECT LISTING (Continued)

U16 Is it possible to generate cleaner energy?

Shazil Suhail, Akashdeep Singh
Junior 7/8 Eng & Comp Sci
Escarment View Public School,
HDSB

U17 Have You Ever Painted A Wall And Missed A Spot

Merella Iskarous, Ellie McGowan-Hill
Junior 7/8 Eng & Comp Sci
St. Mary, HCDSB

U18 Surfing Space Waves

Anthony Hunt
Junior 7/8 Earth & Env Sci
St. Margaret Mary, HWCD

U19 Where does power come from?

David Zanguna, Lucas Picard
Junior 7/8 Earth & Env Sci
St. Bernadette, HCDSB

U20 Global warming... A Global warning

Mikhaela Apurada,
Miguel Apurada
Junior 7/8 Earth & Env Sci
Our Lady of Fatima, HCDSB

U21 Let's Rate The Phosphate

Vince Ventresca, Anthony MacNeil
Junior 7/8 Earth & Env Sci
Our Lady of Peace, HWCD

U22 The Grey Waternet

Monica Mahut
Junior 7/8 Earth & Env Sci
Rolling Meadows Public School, HDSB

U23 The Quantum of Solar Power Creation

Nathan Crossman
Junior 7/8 Earth & Env Sci
St. Eugene, HWCD

U24 Durable Low-cost Self-powered Water Filter

Andres Lombo
Senior 11/12 Earth & Env Sci
St. Thomas Aquinas, HCDSB



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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.

Environmental Award

Prize: \$100

Criteria: Physics, chemistry, or engineering to explore or solve a technical problem associated with environmental issues.

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.

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.

Market Development and Product Applications Award

Prize: \$100

Criteria: Project that best displays the innovative application of materials, products, processes or design principles.

SPECIAL AWARDS (Continued)

ArcelorMittal Dofasco Awards (continued)

Quality Systems Award

Prize: \$100

Criteria: Quality Systems principles and design to solve a technical problem.

Research and Development Award

Prize: \$100

Criteria: Project that best displays investigative research & scientific principles to explore or solve a technical problem.

Steelmaking Award

Prize: \$100

Criteria: Engineering and Materials Science principles to solve a technical problem.

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.

Dr. Laura Blew Social Sciences Awards

Prize: Two awards of \$50 each

Criteria: Best two social science based projects.

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.



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Best Wishes to all BASEF 2016 Participants



**Proudly outfitting TEAM BASEF at the
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SPECIAL AWARDS (Continued)



Canadian Nuclear Society (Golden Horseshoe Branch) Awards

Prize: Two awards at the intermediate or senior levels for \$125 each and two at the junior level for \$75 each.

Criteria: Projects relating to nuclear science and engineering, energy research, or climate sciences.

Chemical Institute of Canada - Hamilton Section Awards

Prize: Three awards of \$100 each

Criteria: Projects relating to chemistry, chemical engineering, or chemical technology.

Doris Casey Disability Solutions Award

Prize: \$100

Criteria: Most innovative and creative technical solution focused on assisting individuals to overcome or compensate for physical or cognitive disabilities.

Conservation Halton Awards

Prize: Two awards of \$100 each

Criteria: Top two science projects that contribute to environmental research, protection, conservation, restoration or awareness by Halton students.

Michael G. DeGroot 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. DeGroot IIDR at McMaster University, valued at \$2,000. Two runner-ups will be identified and given a certificate.

Criteria: Best senior student project in infectious disease, drug discovery or human health.

Dillon Consulting Limited

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. M. Doyle Award

Prize: \$200, a plaque, and a trophy for the winner's school

Criteria: Best biology project.

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.

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.



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SPECIAL AWARDS (Continued)



Gowling WLG Innovation Awards

Grand Winner

Prize: \$300. The prize includes a complimentary consultation with a patent or trademark agent at the Gowling WLG Hamilton office.

Criteria: An excellent 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: Two awards of \$100 each

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.

PROFILE on BASEF Alumnus **Anika Gupta**



Anika Gupta from Sir William Osler Elementary School in Dundas has been selected by Youth Science Canada to be the Team Canada delegate at the Broadcom MASTERS International to be held in May 2016 in Phoenix, Arizona. One 2015 grade 7 science fair project from Canada, along with a project from 17 other countries around the world is selected to participate in this program based on excellence in science, technology, engineering and math (STEM) and leadership potential.

Delegates win an all-expense paid trip to participate in the Broadcom MASTERS (Math, Applied Science, Technology, Engineering Rising Star) International program. In addition they are official observers at the Intel International Science and Engineering Fair (IISEF), the largest high school science fair competition in the world, which is happening in Phoenix at the same time.

Anika will be presenting her 2015 project "Investigating Pesticide-induced Damage of Dopamine Neurons and Protective Effects of Natural Compounds in a Parkinson's disease Animal Model". Pesticides are widely used chemicals that can cause Parkinson's disease (PD). To study PD in an animal model, Anika exposed nematodes to two pesticides and found that these affected neurons that secrete the Dopamine neurotransmitter. She examined natural compounds turmeric and fenugreek, for their protective effects in the pesticide-induced PD nematode model. Her work showed that both compounds had a protective effect on the neurons.

In 2015, Anika presented her project at the Sir William Osler science fair and then at the Bay Area Science and Engineering Fair (BASEF) where she was selected to represent BASEF, along with 15 other students, at the Canada Wide Science Fair in Fredericton, New Brunswick. She won a bronze medal at CWSF 2015 and was recognized by Youth Science Canada for her ability to present highly complex medical research with enthusiasm.

This is the second year in a row that a BASEF student has been selected to attend the prestigious gathering of young scientists, the Broadcom MASTERS.

<https://student.societyforscience.org/broadcom-masters-international>

SPECIAL AWARDS (Continued)



Hamilton Amateur Astronomers Awards

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.

Hamilton Association for the Advancement of Literature, Science & Art da Vinci Award

Prize: \$250

Criteria: The candidate who 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 with potential commercial applications for students from Hamilton 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 which most effectively educates others about an environmental issue.

Healthy Lifestyles Award

Prize: \$50

Criteria: Junior project which 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 which demonstrates a high level of visual appeal, creativity, and overall quality of presentation.

Hillfield Strathallan College Awards of Excellence

Biological Sciences

Prize: \$100

Criteria: Junior project that best displays excellence in a life sciences project.

Environmental Sciences

Prize: \$100

Criteria: Intermediate project that best demonstrates an understanding of the scientific process in the physical sciences.

Innovation

Prize: \$100

Criteria: Senior level project that best displays innovation related to environmental sciences or biotechnology.

Horizon Utilities Corporation Awards

Prize: Three awards of \$300 each

Criteria: Projects that best demonstrate the production of electrical energy from "green sources", or new, viable approaches to using electrical energy more efficiently.

John W. Howard Materials Research Award

Prize: \$100

Criteria: A project demonstrating innovation in engineering materials, especially concrete.

Indigenous Peoples of Canada Scientific Study Awards

Prize: 1st \$140, 2nd \$80, 3rd \$80

Criteria: For the application of established scientific methods to topics relevant to the culture, heritage or issues of the indigenous peoples of Canada.

PROFILE on BASEF Alumni the Bowman Family



Science has been very much a part of the Bowman household for 23 years. But now the dining room table no longer has petri dishes growing mould, fungus and bacteria, and there are no more late nights with spray glue in the basement.

There are no Bowmans competing in this year's BASEF event. Catharine, the last of the four Bowman "science fair kids" is not returning as a competitor this year. She will contribute as a volunteer.

For the past two years, Catharine has travelled to Pittsburg and Los Angeles as part of Canada's contingent to the Intel International Science and Engineering Fair (1,700 finalists from 65 countries). She was also "Best-in-Fair" at BASEF those two years, and at ISEF 2015 she achieved the Grand Award of 4th Place World-Wide in Biomedical and Health Sciences. She also

has national Gold, Silver and Best-in-Category Challenge awards from her years as finalist at Canada Wide Science Fairs, 2011 through 2013.

Catharine also achieved National 3rd Place in Sanofi BioGenius Canada 2015, after a rigorous climb to that level, competing in Ottawa in a final round with the 10 provincial Sanofi winners that brought university-mentored research projects to this level of competition.

Her project, The Pharmacological Potential of two Compounds as a Novel Treatment for Chronic Lymphedema, is now an ongoing research project that reveals promising results and offers hope to those suffering from chronic lymphedema. Catharine has developed a research team and created collaboration between McMaster and Calgary universities, as well as with local clinicians. She has presented her findings at national and provincial conferences and is a guest speaker and advocate for lymphedema research and awareness. She continues to receive requests to speak about her journey and research.

Currently completing Grade 12 at St. Mary Secondary School in Hamilton, Catharine is an active volunteer who has been awarded both the Rotary Paul Harris fellowship award for "Service Above Self" and the Dundas Volunteer of the Year Award. She promotes STEM activities through her presentations to elementary students and mentors students to assist them with their projects, as well as judging at elementary school fairs.

It's not all science in Catharine's world. She is an award winning song writer. Her band, "The Number Stations" was 1st runner up at the 2015 Juno Award competition for young emerging artists.

She is the last of the Bowmans of Dundas to compete at BASEF. Catharine and her three brothers have been to BASEF thirteen times, the Canada-Wide fair seven times and ISEF three times.

There are 23 projects stored in the Bowman attic and basement: they range from bouncing basketballs, to highly complex molecular ones like Catharine's current research, or the work that Jordan completed to determine effects on blood oxygen levels measured in commuters along various transportation corridors. Many people loved Catharine's "There's Bugs in My Bag" project, a study on bacteria that live in reusable shopping bags and why we should wash or disinfect them. The Hamilton Police Bomb disposal unit responded to a home-made portable air monitor (car battery, hose, fan, coffee can and 2 micron air filter) that brother David created one year. It's a good thing there was contact information on the project and permission from the land owner. Brother Patrick's project on disposal of fluorescent tubes in landfill sites was selected to be outlined in the provincial Grade 10 science textbook, as an example of youth concerned about the environment.



Science has given direction to all of the Bowman children. Jordan is now an environmental scientist working for MacIntosh Perry in Ottawa, and he is director of the air monitoring division. Patrick's scientific creativity has served him well artistically as he completes his Masters in voice performance at Western. David is in the Integrated Science program at McMaster, and Catharine will continue her research at the university she selects for the fall.

SPECIAL AWARDS (Continued)

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, any level.

International Science & Engineering Affiliated Fair Awards for regional science fairs associated with the Intel International Science & Engineering Fair

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

American Meteorological Society

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.

ASM Materials Education Foundation

Project demonstrating either the use of materials related concepts or a demonstration of some aspect of the materials paradigm.

Association for Women Geoscientists

Project done by a female(s) exemplifying a high standard of innovativeness and scientific excellence in the geosciences.

ASU Walton Sustainability Solutions Initiative

Projects which seeks innovative solutions to society's most challenging problems. Projects must convey intent to solve a complex problem that involves social justice, environment and economic prosperity.

Intel Excellence in Computer Science

Additional Award: US\$200
Top winner in Computer Science category.

MU Alpha Theta

Most challenging, original, thorough and creative investigation of a problem involving mathematics.

Ricoh Americas Corporation

Project that addresses issues of environmental responsibility with sustainable development. The project must include know-how, procedures, goods and/or services, equipment and organizational/managerial process. The project must also protect the environment and conserve resources, prevent pollution and use all resources in a more sustainable manner.

Society for In Vitro Biology

Grade 11 project exhibiting in the areas of plant or animal in vitro biology of tissue culture.

Yale Science & Engineering Association

Most outstanding Grade 11 project in Computer Science, Engineering, Physics or Chemistry.

Laurentian Chapter of SETAC Awards

Prize: Two prizes of \$100 each
Criteria: Best projects and presentations on a topic related to environmental toxicology, chemistry, pollution, contamination, remediation or environmental protection.



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SPECIAL AWARDS (Continued)

Dr. Colin J.L. Lock Memorial Chemistry Award

Prize: \$100

Criteria: The project demonstrating the best application of chemistry.

McMaster University Department of Chemistry and Chemical Biology Award

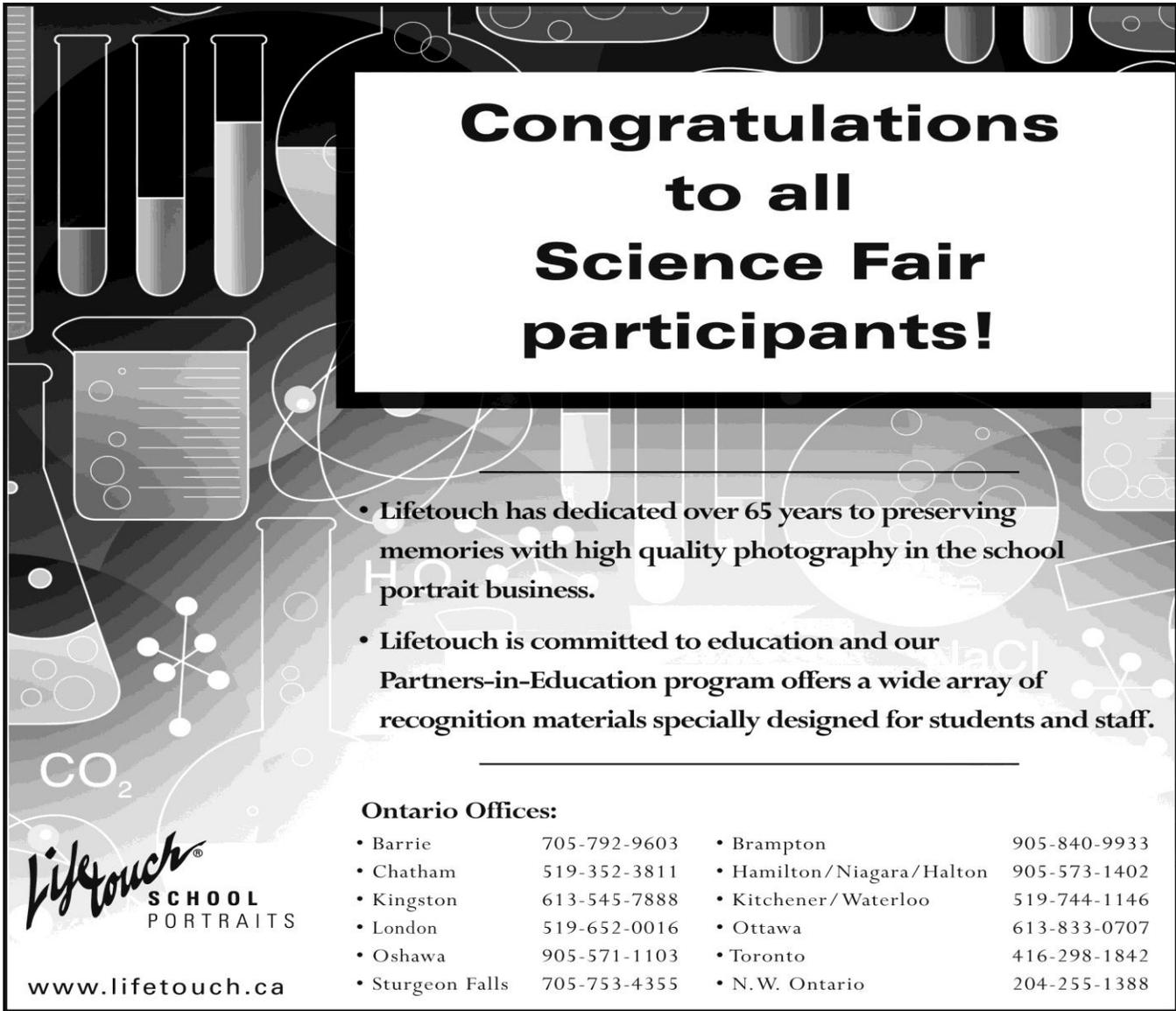
Prize: \$100

Criteria: An outstanding senior or intermediate project connected to chemistry or chemical biology.

McMaster University 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.



Congratulations to all Science Fair participants!

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SPECIAL AWARDS (Continued)

McMaster University LEAP Award of Innovation

Prize: Free admission to LEAP program for Session 3 (Aug. 2-12, 2016) valued at \$625
Criteria: An Intermediate or Senior project of a female participant that demonstrates creativity and originality.

McMaster University Venture Award of Innovation

Prize: Free registration to Venture Camp Engineering & Science Week 5 (August 2 - 5, 2016) valued at \$230
Criteria: A Junior project of a female participant that demonstrates creativity and originality.

Mechanical Contractors Association of Hamilton Award

Prize: \$250
Criteria: Best engineering project at the intermediate or senior level.

Mohawk College Building & Construction Sciences Awards

Civil Engineering Award

Prize: \$50
Criteria: Project related to the field of civil engineering.

Transportation Award

Prize: \$50
Criteria: Project related to planning, design, or operation of any transportation mode or facility.

Building Sciences Award

Prize: \$50
Criteria: Project related to building sciences, building materials, or energy conservation in structures.

Mohawk College Electrotechnology Department Engineering Technology Awards

Prize: Two awards of \$50 each, one at the Junior and one at the Intermediate level.
Criteria: A deserving project in engineering studies



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All the competitors at BASEF2016 are winners in our eyes!

SPECIAL AWARDS (Continued)

Mohawk College Mathematics Awards

- Prize: Two awards of \$50 each, one at the Junior and one at the Senior level.
Criteria: Deserving projects in the category of mathematics or statistics.

Mohawk College Computer Science & Information Technology Computer Excellence Award

- Prize: \$50
Criteria: A project which demonstrates a thorough understanding of computer application and design in today's world.

Nelson Steel Awards

- Prize: Two awards of \$50 each
Criteria: Outstanding projects at the junior level related to two of the following fields: Steel, Environmental or Chemistry.

New Health Scientist Award

- Prize: \$50
Criteria: A worthy project at the Junior level showing good potential for improving the health of our community.

Nikola Tesla Innovation Awards

- Prize: Gold \$250, Silver \$150, Bronze \$100
Criteria: Projects which 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.

Primary Fluid Systems Awards

- Prize: Twenty awards of \$100 each
Criteria: Outstanding projects in Earth and Environmental, Engineering or Physical Sciences categories, at any level.

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 \$100 each
Criteria: Deserving engineering projects - one at each level.

The Research Institute at St. Joes Hamilton, Health Research Award

- Prize: One \$100 award at the intermediate or senior level, and one \$50 award at the junior level
Criteria: Outstanding projects that use strong scientific principles in exploring or solving a problem related to human health issues and communicates the results of their project through an effective visual display.

The Nikola Tesla Educational Corporation (NTEC) has started an initiative to rename the upper portion of "Burlington Street", in Hamilton, Ontario, to "Nikola Tesla Boulevard".

Tesla was a genius who changed the world, and influenced the industrialization of Hamilton a century ago, specifically around Burlington Street.

On October 14th, 2015 Hamilton City Council approved the proposal of the name change under the condition that NTEC raises up to \$150,000 to cover the costs of signage.

To show your support and make this vision a reality please donate today at:
www.teslaeducational.ca/donations



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.

Dr. Nicola Simmons Award in Cognition Studies

Prize: \$100

Criteria: An exemplary project in cognition studies.

SPIE - The International Society for Optics & Photonics Awards

Prize: 1st US\$250, 2nd: US\$150,
3rd US\$100; to be requested by 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.

Dr. Tunks Innovation Awards

Prize: Two awards of \$100 each

Criteria: Most creative or innovative project, any level.

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Thought Leadership

As Hamilton's oldest institution, the Chamber produces thought-provoking events and generates policy solutions by tapping into the collective knowledge and experience of our membership.

The BASEF 500 AWARDS



Eighteen projects* will win a \$500 prize

The "BASEF 500 Awards" are funded by a generous donor who wants to generate interest and encourage participation in the Fair.

The awards, based on merit judging marks, will be awarded to the top 18 projects that win \$250 or less in other cash prizes.

* The winners must be first time recipients of these \$500 awards. Award will be split between the partners.

Two schools will each win a \$250 New School Award

Funded by the same donor, the teachers from the two new** schools with the best project scores will win these awards for use in their classroom.

** schools that have not had projects in BASEF for at least 5 years

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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 2016-17 academic year. (Will be awarded to both students in a team project – maximum \$10,000 value).

Criteria: The best project demonstrating excellence in scientific learning with joy and purpose.

McMaster University Faculties of Science & Engineering Entrance Awards

Prize: Five \$500 tuition awards, to be redeemed upon acceptance of admission to either of the Faculties of Science or Engineering. (Joint student winners will split the award).

Criteria: Projects demonstrating excellence in Science or Engineering research.

McMaster University Women in Engineering Entrance Awards

Prize: Two \$500 tuition awards, to be redeemed upon acceptance of admission to the Faculty of Engineering. (Joint student winners will split the award).

Criteria: Projects led by female students that demonstrate excellence in health sciences, science or engineering.

McMaster University Engineering Society Entrance Award

Prize: One \$500 tuition award, to be redeemed upon acceptance of admission to the Faculty of Engineering (Joint student winners will split the award).

Criteria: The best project demonstrating excellent understanding of engineering and its applications.

University of Ottawa Entrance Scholarship

Prize: \$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.

(In the case of a two-student project, each student will receive a \$500 admission scholarship if they register in appropriate undergraduate programs at the University of Ottawa).

Criteria: The most deserving Senior project.

Awarded to all projects earning Gold, Silver or Bronze Merit Medals

Mohawk College and Sheridan College – Award of Excellence Tuition Scholarship



Mohawk College and Sheridan College will provide a \$500 scholarship to ALL BASEF 2016 Merit Award Medal (Gold, Silver, Bronze) winners. 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.

**We are proud to sponsor
BASEF and the
2016 Merit Awards!**



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by most people
because it is dressed
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Thomas A. Edison



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MERIT AWARDS

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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 150 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.

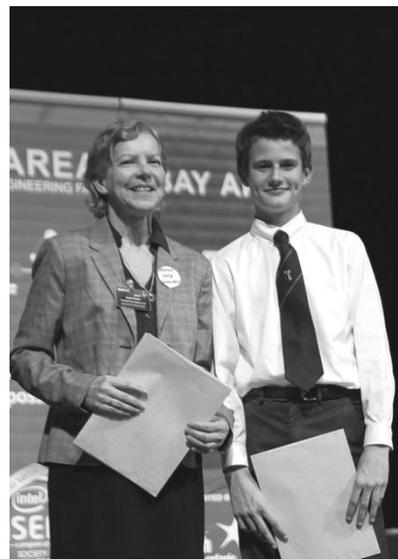
The Awards are issued to projects that meet the following criteria:

For Junior, Intermediate, 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% & ranking in top 7.5% of category: earns **Gold medal & cash award**
over 80% & next 10% of category: earns **Silver medal & cash award**
over 75% & next 12.5% of category: earns **Bronze medal & cash award**





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We applaud the achievements of all BASEF 2016 participants as future innovators, entrepreneurs and leaders of tomorrow!

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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 and a cash award. Trophies are awarded to the winner's schools.

Best-in-Fair \$1000



2nd Best-in-Fair \$800



3rd Best-in-Fair \$500



DRS. RANJAN SUR AND MONALISA SUR AWARD

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



ROY MIDDLETON MEMORIAL AWARD

Best Junior Level Project at the fair, a plaque to the winner's school.



HERB GILDEA MEMORIAL TROPHY

A 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

A 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 2016 Intel International Science & Engineering Fair, to be held in Phoenix, Arizona from May 8 to 13, 2016. All trip expenses paid.

Up to 3 projects will be chosen from excellent exhibits at the secondary school (Intermediate & Senior) 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 2016 Canada Wide Science Fair (all trip expenses paid), to be held in Montreal, Quebec from May 15 to May 20, 2016.

Up to 16 students who have presented excellent projects will be chosen (dependent on funding levels).

All projects entered in BASEF 2016 are eligible.



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