

**BASEF**  
Big Ideas.  
Infinite Possibilities.

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# BASEF 2024

Sponsored By:



**Primary Fluid  
Systems Inc.**

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*64<sup>th</sup> Annual Bay Area Science &  
Engineering Fair*

## **OFFICIAL PROGRAM**

**Diamond Sponsor**  
*ArcelorMittal Dofasco*

**Platinum Sponsors**  
*Alectra Utilities  
McMaster University  
Mohawk College*

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# BASEF Values

## Land Acknowledgement

The Bay Area Science & Engineering Fair (BASEF) acknowledges its presence on the traditional territories of the Mississauga and Haudenosaunee nations, and within the lands protected by the “Dish with One Spoon” wampum agreement.

The catchment area of BASEF is home to many Indigenous people from across Turtle Island. We respect the longstanding relationships with local Indigenous communities, the Mississaugas of the Credit First Nation and the Six Nations of the Grand River. BASEF recognizes that we must do more to learn about the rich history of this land so that we can better understand our roles as residents, neighbours, partners and caretakers. For more information, visit [www.native-land.ca](http://www.native-land.ca).

## Our Mission

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

## Our Vision

There is engaged participation by all eligible students. Completing a STEM (Science, Technology, Engineering & Mathematics) project is a means to fulfill Ministry curriculum in elementary and secondary schools. Students realize that through STEM literacy, they can make a positive difference in the world. Scientific innovations and discoveries will be considered exciting, and students will make time for science fair projects because they will have opportunities and develop [21<sup>st</sup> Century Competencies](#).

## Anti-Discrimination Policy

BASEF prohibits and condemns discrimination of any type against students, judges, volunteers, and visitors, including on the basis of race, colour, national or ethnic origin, religion, sex—including sexual orientation and gender identity/expression—genetic information, age, (dis)ability, or any other characteristic that is protected under the Canadian Charter of Rights and Freedoms.

# Message from Hillfield Strathallan College



Welcome to the 2024 Bay Area Science and Engineering Fair hosted at Hillfield Strathallan College and congratulations on being selected to participate in this incredible science and engineering fair. We are truly honoured to have such an exceptional group of students showcasing their innovations on our campus.

Over the years, HSC has seen its own students participate in the annual fair and, like BASEF, we too have a mission to inspire students to follow their passions and participate in deep learning experiences that challenge them.

Now in its 64<sup>th</sup> year, BASEF brings together roughly 400 participants every year from across the region with several of them going on to compete at the Canada Wide Science Fair and the International Science and Engineering Fair. None of this would be possible without the amazing support from sponsors, judges, volunteers, parents, and teachers. Thank you for investing your time and efforts every year to make BASEF such an incredible platform for student ingenuity and innovation.



It is incredibly exciting to be this year's host and we wish everyone the best of luck with their projects. You've already achieved so much by being here and I have no doubt that you will continue to make your school proud with your future accomplishments.

Best of luck and full STEAM ahead!

**Marc Ayotte**  
 Head of College,  
 Hillfield Strathallan College



# Chairs' Message



Welcome to the Bay Area Science and Engineering Fair!

Dana Bee and David Reed, your co-chairs this year, would like to extend their warmest greetings to all participants, judges, teachers, mentors, and guests joining us for our 64th year!

BASEF is more than just a showcase of projects: it is a testament to the power of curiosity and the dedication of individuals striving to make a difference in the world. Here, ideas flourish, collaborations ignite, and dreams take flight.

As we gather to celebrate innovation, creativity, and the pursuit of knowledge, we know that each student has embarked on a journey of personal discovery that can also inspire future generations of young scientists and engineers.



We invite you to explore the 281 projects being presented and engage in thought-provoking discussions with all 372 students taking part in the fair this year.

We are very thankful for the essential support from charitable donors, corporate and community sponsors, and special awards donors that make BASEF possible during these challenging financial times.

We are proud to welcome back our returning Title Sponsor:

## **Primary Fluid Systems Inc.**

Primary Fluid Systems Inc. recognizes the importance of encouraging young people to pursue training and careers in STEM related activities.

We would also like to welcome back our long-time sponsor at the Diamond Level:

## **ArcelorMittal Dofasco**

Finally, we extend our appreciation to BASEF's new host, Hillfield Strathallan College (HSC), which we are sure will provide an incredible venue for our students. It has been a pleasure working with HSC and we look forward to continuing our new partnership going forward.

As BASEF is a 100% volunteer-driven registered charity, we thank the extraordinary efforts of the thirty Organizing Committee members, who have dedicated countless hours toward making BASEF 2024 a success. Thank you!

Together, let us celebrate the infinite possibilities of science and engineering, and pave the way for a brighter, more innovative future.

Once again, welcome to the Bay Area Science and Engineering Fair!

# Organizing Committee

## Co-Chairs

Dana Bee, David Reed

## Treasurer

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

## Recording Secretary

Mike & Terra Klinck

## Registrar

George Geczy

## Judge-In-Chief

Donna Stack-Durward;  
Assistants: Dan Bowman, Ryan LaRue,  
Jane Wood

## Scientific Review Committee

Dan Bowman, Katie Brent, George Geczy, Ryan  
LaRue, Marc Trotta;  
*Ex-Officio:* Donna Stack-Durward & Dana Bee

## Special Awards Committee

Helen Efthimiadis (Lead), Eleanor O'Flynn

## Fundraising Committee

Sue Olynyk (Chair), Paul Lakin, Claire Velikonja

## Marketing & Publicity

Wayne Bowdish, Maya Clapperton, George  
Geczy, Chris Kutenkeuler, Ryan LaRue,  
Mark Trotta

## Photography & Graphics

Wayne Bowdish (Lead), Ryan LaRue

## Digital Program

Ryan LaRue (Lead), Wayne Bowdish,  
Eleanor O'Flynn, Sue Olynyk

## Information Systems

George Geczy (Lead), Gerard Chiasson

## Safety Inspections

Mark Simpson

## Awards Ceremony

Gerard Chiasson (Lead); Dan Bowman,  
George Geczy, Ryan LaRue, Sue Olynyk;  
Cathy Hayman & Chris Blackwood (Emcees)

## Canada-Wide Science Fair (CWSF) Delegates

Dan Bowman (Lead), George Geczy,  
Caroline Mahut, Donna Stack-Durward

## International Science & Engineering Fair (ISEF) Delegates

Dana Bee, David Reed

## Volunteer Coordinators

Caroline Mahut & Victoria Lee (Leads);  
Chris Kutenkeuler

## Activity Morning Coordinator

Vince Pacifici

## Student Advisors

Isabella Lopes, Nico Pacifici

## Members-At-Large

Isra Bashir, Katie Brent, Anika Gupta,  
Neha Gupta, Mike McNally, Janice Pang

## Host Venue Liaisons

Hillfield Strathallan College: Celeste Settle  
Mohawk College: Alec Harmer  
Dana Jacobs

## School Board Liaisons

BHNCDSB:	<i>Vacancy</i>
GEDSB:	<i>Vacancy</i>
HCDSB:	Matt Kovacs
HDSB:	Ingrid Scully
HWCDSD:	Marc Trotta
HWDSB:	<i>Vacancy</i>
Six Nations:	<i>Vacancy</i>

### School Boards:

<b>BHNCDSB</b>	<i>Brant Haldimand Norfolk Catholic District School Board</i>
<b>GEDSB</b>	<i>Grand Erie District School Board</i>
<b>HCDSB</b>	<i>Halton Catholic District School Board</i>
<b>HDSB</b>	<i>Halton District School Board</i>
<b>HWCDSD</b>	<i>Hamilton-Wentworth Catholic District School Board</i>
<b>HWDSB</b>	<i>Hamilton-Wentworth District School Board</i>

Please reach out ([chair@basef.ca](mailto:chair@basef.ca)) if you would like join our team!

# BASEF 2024 Schedule of Events

BASEF 2024 is being held at *HILLFIELD STRATHALLAN COLLEGE* ("HSC") and *MOHAWK COLLEGE'S MCINTYRE PERFORMING ARTS CENTRE* ("McIntyre Theatre") Fennell Campus. See the maps on the next pages.

## Thursday, March 21<sup>st</sup>: On-Site Registration, Project Setup, & Safety Check

<b>4:00–8:00 pm</b>	Registration, set-up and safety checks. Note: valuables left in the gym overnight are left at the student's own risk!	<b>HSC</b>
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## Friday, March 22<sup>nd</sup>: Activity Morning & Project Judging

<b>10:00–10:20 am</b>	Students arrive at HSC and are seated in the theatre for Activity Morning. Note: it is the responsibility of the student to arrange their own transportation to and from the venue.	<b>HSC</b>
<b>10:45 am–12:15 pm</b>	Activity Morning will feature presentations from: <ul style="list-style-type: none"> <li>• <i>The Hamilton Amateur Astronomers</i>, represented by John Gauvreau</li> <li>• <i>McMaster University Department of Chemistry &amp; Chemical Biology</i>, represented by Gillian Goward, Paul Harrison, and Heather Zalisko.</li> </ul>	
<b>12:15–1:00 pm</b>	Students eat lunch at their projects.	
<b>1:00–4:00 pm</b>	Judging interviews for BASEF students. BASEF participants must remain at their projects during judging.	
<b>4:00 pm</b>	Students are dismissed and must arrange their own transportation home.	

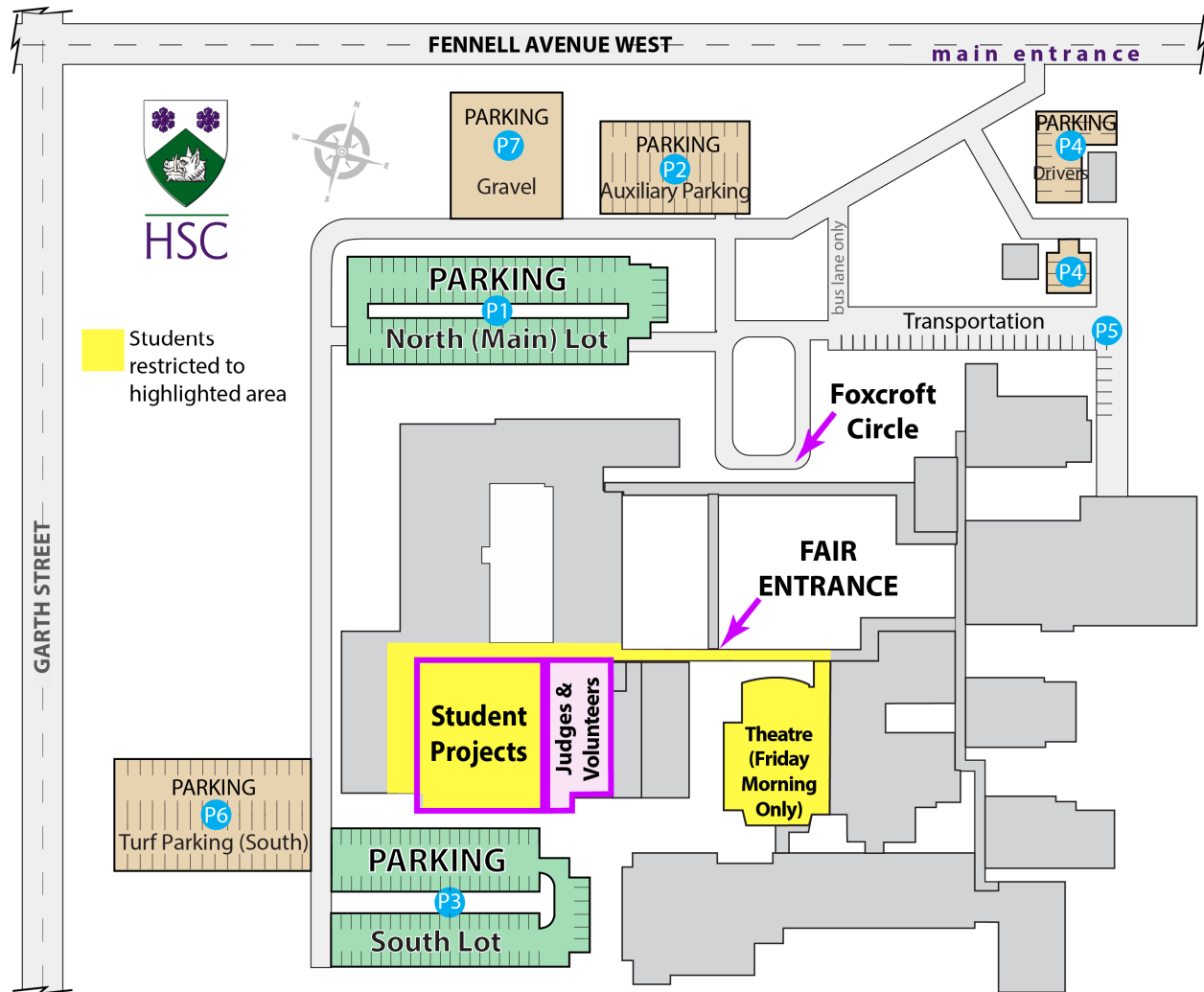
## Saturday, March 23<sup>rd</sup>: Public Viewing


<b>9:00 am–12:00 pm</b>	Students are asked to be at their projects until the end of the viewing. <i>The Hamilton Amateur Astronomers</i> , represented by Sue MacLachlan, Jo Anne Salci, and Denise White, will have a booth and offer demonstrations of a telescope (weather-permitting).	<b>HSC</b>
<b>12:00–12:15 pm</b>	Project take-down. All projects <u>must</u> be removed by 12:15 pm.	

## Tuesday, March 26<sup>th</sup>: Awards Ceremony @ Mohawk College

<b>6:30 pm</b>	Seating opens for the Awards Ceremony	<b>McIntyre Theatre</b>
<b>7:00–9:30 pm</b>	Awards Ceremony	
<b>9:30–10:30 pm</b>	Meeting with chaperones for trip winners and their parents	

# Map: Hillfield Strathallan College



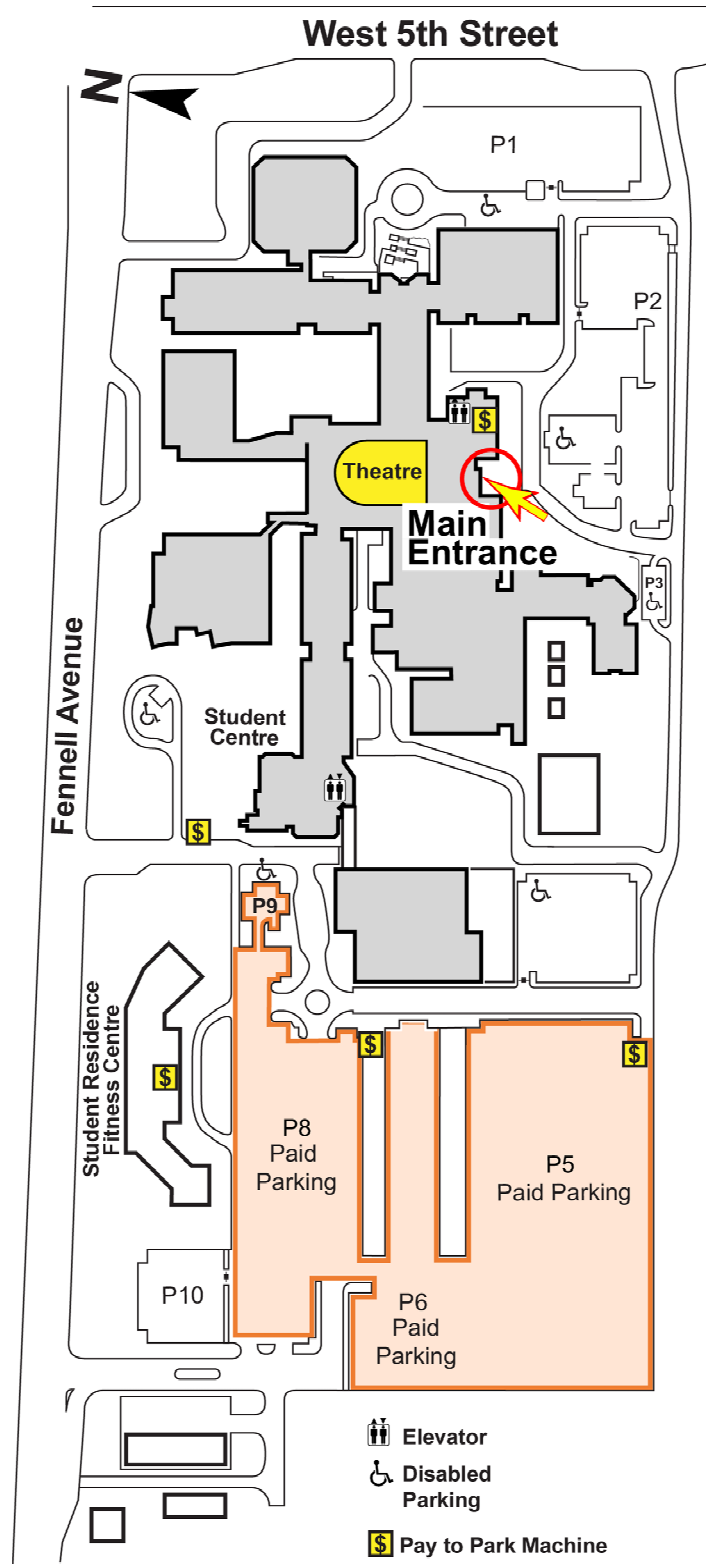


This digital program will be periodically updated over the course of the Fair to reflect the most up-to-date information. The most recent version of the program can be downloaded from our website at [www.basef.ca/program2024](http://www.basef.ca/program2024).

We have taken every effort to ensure that the information presented in this digital program is accurate. If you are aware of an error or omission, please let us know by contacting our Digital Program Lead at [Ryan.LaRue@basef.ca](mailto:Ryan.LaRue@basef.ca).




# Map: Mohawk College




# Information for Parents

*Congratulations on your decision to support your child's participation in BASEF! All BASEF student participants are rewarded with an enriching experience. Along with receiving a certificate of achievement, students gain the opportunity to meet like-minded individuals: BASEF judges, community stakeholders, other top students, and people working in the STEM field. In addition, BASEF gives cash prizes, awards, and scholarships. Our top winners earn the chance to participate in an expense-paid trip to either the national (CWSF) or international science fair (ISEF). Be sure to visit the BASEF website ([www.basef.ca](http://www.basef.ca)) throughout the year and subscribe to our social media (see below). You will find project pictures and abstracts from last year's fair, resource materials, updates from our BASEF winners as they compete at the national/international levels, and important information about the next Fair.*

## BASEF 2024 Quick Facts

- ▶ **Location of Events:** Projects will be set up in the *HILLFIELD STRATHALLAN COLLEGE* (HSC) Athletic Complex King and Siggie Gyms located at 299 Fennell Ave W, Hamilton. **This is new for 2024!** The Awards Ceremony will be held in the McIntyre Performing Arts Centre at *MOHAWK COLLEGE*, located at 135 Fennell Ave W, Hamilton.  Parking considerations are highlighted below.
- ▶ **No Mask Mandate:** At the time of writing, BASEF 2024 will not mandate the use of a face mask at the Fair. In the spirit of being considerate towards others, we ask that you stay home if you are ill and wear a face mask if you have been ill recently. Attendees may choose to wear a face mask pursuant to other personal circumstances, as well.
- ▶ **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 of any food allergies or special medical issues that pertain to your children. BASEF should be considered a public facility with regards to food allergies.
- ▶ **Revisions and Changes to the Program:** Any changes or revisions to this year's Fair will be posted on the BASEF website, added to this official program, and announced at the Fair. The latest version of this program can be downloaded from our website at [www.basef.ca/program2024](http://www.basef.ca/program2024).

## Parent Responsibilities: Day-by-Day

- ▶ **Day 1: Registration & Setup.** Thursday, March 21<sup>st</sup>, 2024 @ 4:00–8:00 pm
  - Project setup is only on March 21<sup>st</sup>, 2024 from 4:00–8:00 p.m. at the *HILLFIELD STRATHALLAN COLLEGE* (HSC) Athletic Complex. The entire process typically takes less than an hour.
  -  Parents are encouraged to park in the North Lot ([see map on pg. 8](#)). If this lot is full, the South Lot is also available. Parking at HSC is free of charge. From there, you and your student(s) will carry their project into the HSC Athletic Complex. Volunteers and signage will help to guide you.
  - Your child will visit a registration desk and find out their assigned display area.
  - After the project is set up, one of our safety inspectors will ensure that the project meets all safety guidelines. Students cannot leave until their project has passed their safety check.
  - Projects not set up by 8:00 pm will be deemed as "no shows" and will not be judged.

► **Day 2: Student Arrival for Activity Morning.** Friday, March 22<sup>nd</sup>, 2024 @ 10:00–10:20 am

- Parents must arrange transportation for student(s) to and from HSC. Activity Morning will start at 10:30 so we recommend that students arrive and are settled before that time. Please do not drop students off before 10:00 am as BASEF/HSC cannot facilitate the appropriate supervision.
- **P** You may use the “Foxcroft Circle” (see map on pg. 8) as a temporary drop-off zone. Note that parking inside the Circle is not permitted as it is a fire route.
- Volunteers and signage will guide arriving students to the HSC auditorium for an exciting morning of activities featuring the Hamilton Amateur Astronomers and the McMaster University Department of Chemistry & Chemical Biology.
- Following Activity Morning, students will have time to eat their lunches from 12:15 to 1:00 pm at their projects in the HSC Athletic Complex. There are no food vendors available onsite, so students must bring lunch with them. Note that utensils/ microwaves/etc. also will not be available.

► **Day 2: Afternoon Judging.** Friday, March 22<sup>nd</sup>, 2024 @ 1:00–4:00 pm

- Judging starts at 1:00 pm, sharp. Usually, students will be interviewed by at least three judges.
- Teachers and parents are not permitted on the gym floor during judging. Students may not receive any form of coaching from parents/teachers/etc. during this judging period.

► **Day 2: Post-Judging Period.** Evening of Friday, March 24<sup>th</sup>, 2023, beyond 4:00 pm

- After the judging period has finished at 4pm, students will be dismissed in an orderly fashion. Please make transportation arrangements for your student(s) to leave HSC promptly.
- **P** As before, parents can park in the HSC North Lot to pick up their students. Parking is not permitted in the Foxcroft Circle, but it can be used as a temporary pick-up zone (see map on pg. 8).
- The Fair is not open to students or the public during the evening of March 24<sup>th</sup>.

► **Day 3: Public Viewing.** Saturday, March 23<sup>rd</sup>, 2024, 9:00 am–12:00 pm

- Your student(s) should be at their projects in the HSC Athletic Complex for the Public Viewing period.
- We strongly recommend that you also attend the Public Viewing with your student(s). Better yet: invite your family and friends, too! It will give you an opportunity to view all of the great projects on display and to see your own student giving presentations for visitors.
- Tours of HSC will be offered for anyone who is interested. Weather-permitting, the Hamilton Amateur Astronomers will offer free demonstrations of the use of a telescope!
- **P** Parking is free for everyone, and both the HSC North and South Lots should be used.
- Projects may not be removed until the end of the Public Viewing. You must arrange to take down your project between 12:00–12:15 pm. After this time, projects will be removed and discarded by the volunteer staff.

► **Awards Ceremony.** Tuesday, March 24<sup>th</sup>, 2024 @ 7:00–9:30 pm

- The Awards Ceremony is the culmination of the Fair where we recognize the hard work of students. It will be held in the McIntyre Theatre at *MOHAWK COLLEGE* at 7:00 pm, sharp.
- **P** Paid evening parking at available at *MOHAWK COLLEGE* for the Awards Ceremony. Please pre-pay at one of the parking pay stations located in and around the Campus parking lots (see map on pg. 9).
- It is recommended to come early as seating is limited. Doors will open at 6:30 p.m.
- Students will be asked to sit near the front of the Theatre to facilitate the distribution of awards.
- Our Trip Award Winners and a parent are required to attend an information meeting immediately after the Awards Ceremony (approximately one hour).

# BASEF 2024 Sponsors & Charitable Donors

## General Funding Sponsors

### Title (\$25,000+)

Primary Fluid Systems Inc.

### Diamond (\$10,000+)

ArcelorMittal Dofasco

### Platinum (\$5,000+)

Alectra Utilities

McMaster University

Mohawk College

### Gold (\$2,500+)

D.E.N.M. Engineering

Hillfield Strathallan College

### Silver (\$1,000+)

Bay Area Health Trust

Burlington Hydro

Canadian Linen & Uniform Service

Halton Catholic District School Board

Halton District School Board

Hamilton-Wentworth Catholic District School Board

Hamilton-Wentworth District School Board

Ontario Power Generation

Taylor Leibow Accountants & Advisors

### Bronze (\$500+)

CareGo Tek

Hamilton Police Retirees' Association

Mysys Ltd.

NewAE Technology Inc.

Rotary Club of Hamilton AM

Society of Tribologists & Lubrication Engineers- Hamilton Chapter

Synapse Life Science Consortium

WalterFedy

### Friends (\$250+)

Electrical Contractors Association of Niagara Hamilton

Rotary Club of Ancaster AM

Talkit.ca

# Charitable Donors

## Banting & Best Level (\$1,000+)

Peter Child

## Bondar Level (\$500+)

Steve & Cathy Hayman

Mantecon Partners

Peter & Sue Olynyk

## Polanyi Level (\$200+)

Dan & Debbie Bowman

Renato & Enza De Tina

Nick & Helen Efthimiadis

Paul & Pam Lakin

John & Eleanor O'Flynn

Dr. Nicola Simmons

## McGill Level (\$50+)

Linda Millar

**Notes:** Those donating in-kind services help us provide an exceptional experience for BASEF participants. Key donations can include: facility space, accounting, and teamwear. In addition to those listed above, BASEF also has donors who wish to remain anonymous.



*“Many thanks to all the organizations and individuals that have supported BASEF this year! Their cash and in-kind general funding donations allowed us to continue to provide this event to as many of this region’s youth as we have. It is very much appreciated.*

*Is your place of business built on science, applied science, mathematical or engineering foundations? Are you interested in improving youth capabilities in personal self-confidence, presentation, and communication skills? BASEF ignites sparks of interest in youth that leads them to become the future ready workforce of tomorrow.*

*I’m always willing to talk to more people about possible financial support for the fair. You or your company can support BASEF through direct charitable donations of cash, donations of securities through “Canada Helps”, workplace giving through “Benevity”, or in-kind donations of items like meeting spaces, printing, storage facilities, and airline tickets. My name is Susan Olynyk and I can be contacted at [fundraising@basef.ca](mailto:fundraising@basef.ca).”*

**- Sue Olynyk, P.Eng., Fundraising Chair**



# BASEF 2024 Awards

## ArcelorMittal Dofasco Merit Awards

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, businesses, and industries in our regions. All participants in the Bay Area Science and Engineering Fair are eligible to win Merit Awards. The Awards are given to deserving projects at Junior (7/8), Intermediate (9/10), and Senior (11/12) levels in:



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

Scoring for Merit Awards proceeds as follows:

- ▷ A score  $\geq 90\%$  or higher earns a Gold Medal and a cash award
- ▷ A score  $\geq 80\%$  (but less than 90%) earns a Silver Medal and a cash award
- ▷ A score  $\geq 75\%$  (but less than 80%) earns a Bronze Medal and a cash award

## Grand Awards

### Primary Fluid Systems Pinnacle Awards

BASEF's Pinnacle Awards are presented to each of the top three projects in the fair. These awards are based on the project's Merit Award score. Each winner receives an engraved plaque. Trophies are sent to the winners' schools.



*Best-in-Fair: \$1,000*

*2<sup>nd</sup> Best-in-Fair: \$800*

*3<sup>rd</sup> Best-in-Fair: \$500*



**Drs. Ranjan Sur and Monalisa Sur Award**

- ▷ The best Intermediate (9/10) or Senior (11/12) project at the fair. The winning student’s school receives a plaque.



**Roy Middleton Memorial Award**

- ▷ The best Junior (7/8) project at the fair. The winning student’s school receives a plaque.



**BASEF Committee Trophy**


- ▷ This trophy is awarded to the elementary school accumulating the most points. Points are earned from the number projects entered from the Junior (7/8) level of each school and the projects earning Gold, Silver, and Bronze Merit Awards.



**Herb Gildea Memorial Trophy**

- ▷ This 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, and Bronze Merit Awards.





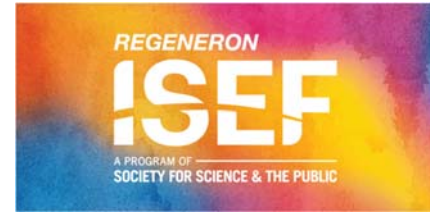
**Interested in joining our team?**

BASEF is always looking for new recruits to volunteer on our organizing committee! Our members have a wide range of backgrounds and skillsets which we need to run our annual fair: scientists, engineers, accountants, financial professionals, businesspeople, educators, and so on. If you would like to be a part of our dynamic team for BASEF 2025, please reach out to [chair@basef.ca](mailto:chair@basef.ca).

# Grand Prize Trip Awards

## 2024 Regeneron International Science and Engineering Fair (ISEF)

- ▷ Up to five projects (depending on funding level) will be chosen from excellent exhibits at the secondary school level (Intermediate & Senior) to advance to ISEF, which will be held from May 11<sup>th</sup>–17<sup>th</sup>, 2024. Eligible winners of ISEF trip awards will receive an expense-paid trip to the Fair in Los Angeles, California to present their projects amongst some of the brightest young minds from around the world.



*Sponsored By:*



## 2024 Canada-Wide Science Fair (CWSF)

- ▷ Up to 17 students (depending on funding level) will be chosen from excellent exhibits to advance to CWSF, which will be held May 25<sup>th</sup>–June 1<sup>st</sup>, 2024. All projects at BASEF 2024 are eligible to advance to CWSF. Winners of CWSF trip awards will receive an expense-paid trip to Ottawa, Ontario to present their projects.



*Sponsored By:*



## Special Awards



*“Our sincere appreciation to the many community organizations, businesses, and individuals for the ongoing support and contributions in the success of BASEF 2024. Special Award donors and judges are extraordinary groups and individuals that have committed their generous awards and time to encouraging scientific thought and research in their specific area of interest and have been paramount to the success of our event.*

*This year, we are pleased to announce a total of 158 special awards, amounting to \$24,600 in cash and \$14,500 in academic scholarships. Your donations have played a crucial role in achieving this milestone, further solidifying BASEF's position as a platform that promotes excellence in scientific exploration.*

*BASEF 2024 sponsored by Primary Fluid Systems Inc. supports students in Grades 7 through 12 to explore and pursue careers in STEM. Your support inspires the next generation of professionals to make great future strides and contributions to these fields.”*

**- Helen Efthimiadis, Special Awards Coordinator**

Special Awards are given by organizations and groups to recognize deserving projects that deal with topics of interest to the donor. These organizations and groups are encouraged to provide their own judges for their awards. These judges are indicated to the right of the award listings. In cases where no external judges are recommended, BASEF is happy to provide its own judges for those awards. We appreciate the generosity of our Special Awards donors and judges!

Special Awards	Judges
<b>ArcelorMittal Dofasco Awards</b> <b>Central Trades &amp; Services Department Award</b>	Lead: Shannon Clark Clayton MacNeil
Prize: \$100 Criteria: A project that best displays the use of scientific principles in applying technology for the betterment of people or machines.	
<b>Chemical Testing Award</b> Prize: \$100 Criteria: A project that best uses chemical testing and/or chemical principles to solve a technical problem.	Kristen Bloom
<b>Commercial Department Award</b> Prize: \$100 Criteria: A project that best uses commercial and business planning tools in developing a potentially new or improved commercial product.	Shannon Clark
<b>Engineering Award</b> Prize: \$100 Criteria: A project that best uses engineering & maintenance technology principles and design to solve a technical problem.	Justin Clappison

**Special Awards**
**Judges**
**ArcelorMittal Dofasco Awards, Continued...**
**Environment Award**

Prize: \$100

Criteria: A project that best uses physics, chemistry, or engineering to explore or solve a technical problem associated with environmental issues.

 Scott Anderson  
Shawna Lemire

**Global R&D Hamilton Award for Outstanding Research**

Prize: \$100

Criteria: A project that best uses investigative research &amp; scientific principles to explore or solve a technical problem.

Nicole Perna

**Global R&D Hamilton Award for Technology Application**

Prize: \$100

Criteria: A project that best uses the innovative application of materials, products, processes or design principles.

Mayank Upadhyay

**Hot Mill Award**

Prize: \$100

Criteria: A project that best uses creative principles and design to solve a manufacturing or process problem.

Chantel Ullyett

**Human Resources Training & Development Award**

Prize: \$100

Criteria: A project that best uses teaching and training techniques in explaining or exploring a technical problem.

 Victoria Smith  
Chris Willis

**Information Systems Award**

Prize: \$100

Criteria: A project that best uses information systems and design to solve a technical problem.

 Karthik  
Balasubramanian;  
Jonas Szajman

**Ironmaking Award**

Prize: \$100

Criteria: A project that best uses the use of metallurgical or material science principles to solve a technical problem.

Husain Tapia

**Material Handling & Logistics Department Award**

Prize: \$100

Criteria: A project that best displays the use of scientific principles in exploring or solving a problem related to material conveyance, transportation or logistics.

Aaron Dearman

**Medical Department Award**

Prize: \$100

Criteria: A project that best uses scientific principles in exploring or solving a problem related to human health issues.

Frances Thompson

**Pickling and Cold Rolling Award**

Prize: \$100

Criteria: A project that best displays the use of chemical or mechanical properties to explore or solve a technical problem.

Hammad Ashfaq

**Process Automation Award**

Prize: \$100

Criteria: A project best uses process automation principles and design to solve a technical problem.

Pedro Tondo



Special Awards	Judges
<b>ArcelorMittal Dofasco Awards, Continued...</b>	
<b>Product Development Business Process Award</b> Prize: \$100 Criteria: A project that best uses product development principles and design in developing a new consumer product with commercial potential.	Tyson Auger
<b>Quality Systems Award</b> Prize: \$100 Criteria: A project that best uses quality systems principles and design to solve a technical problem.	Jaime Jewer
<b>Steelmaking Award</b> Prize: \$100 Criteria: A project that best uses engineering and materials science principles to solve a technical problem.	Analinda Sanchez Morone; Michael Kempe
<b>Artistically Inspired Display Awards</b>	
Prize: Two awards of \$50 each Criteria: To the most artistically inspired display.	Cathy Hayman
<b>Association for Iron &amp; Steel Technology Northern Chapter Awards</b>	
Prize: 1 <sup>st</sup> \$250    2 <sup>nd</sup> \$150    3 <sup>rd</sup> \$100 Criteria: For outstanding projects related to one of the following fields: metallurgy, materials science, chemical, electrical, mechanical, industrial, environmental, civil and computer engineering.	Shannon Clark
<b>BASEF Inspiration Student Awards:</b>	
Prize: \$500 awards Criteria: Awarded based on merit judging marks to top projects that win \$250 or less in other prizes and have not previously won a BASEF Inspiration Award.	BASEF
<b>BASEF Inspiration Teacher Awards:</b>	
Prize: \$500 awards Criteria: Awarded to teachers of schools which are new* to BASEF. The teacher must have two or more projects displayed and judged at the Fair. The award is to be used in the classroom at the winning teacher's discretion. <i>*Schools without BASEF projects for at least 5 years</i>	BASEF
<b>Bay Area Health Trust Scholarship/Paul Lakin Health Sciences Award</b>	
See <a href="#">"Scholarships"</a>	Paul Lakin
<b>Canadian Institute of Mining, Metallurgy and Petroleum (Hamilton Branch) Awards</b>	
Prize: Two awards of \$100 each Criteria: Outstanding projects relating to mining, metallurgy and petroleum, any level.	Shannon Clark

Special Awards	Judges
<p><b>Canadian Meteorological and Oceanographic Society Awards</b></p> <p>Prize: 1<sup>st</sup> \$100 2<sup>nd</sup> \$50</p> <p>Criteria: Each winner receives a one-year free CMOS Membership. Best projects in meteorological and/or oceanographic sciences (weather, air quality, climate, climate changes and/or the oceans).</p>	<p><i>Steven Jacobs</i></p>
<p><b>Canadian Nuclear Society (Golden Horseshoe Branch) Awards</b></p> <p>Prize: Two awards of \$125 each for intermediate or senior projects and two awards of \$75 each for junior projects.</p> <p>Criteria: Projects relating to nuclear science and engineering, energy research, or climate sciences.</p>	<p><i>Peter J. Kriemadis Razia Nushrat</i></p>
<p><b>Chemical Institute of Canada – Hamilton Section Awards</b></p> <p>Prize: Three awards of \$100 each</p> <p>Criteria: Projects relating to chemistry, chemical engineering, or chemical technology.</p>	<p><i>Don Barclay Tom Sutton</i></p>
<p><b>Conservation Halton Awards</b></p> <p>Prize: Two awards of \$100 each</p> <p>Criteria: Projects that contribute to environmental research, protection, conservation, restoration or awareness by Halton students.</p>	<p><i>Christine Bowen Carolyn Zanchetta</i></p>
<p><b>Dillon Consulting Limited</b></p> <p><b>Science and Engineering Award</b></p> <p>Prize: \$250</p> <p>Criteria: Project showing excellence in science and/or engineering.</p> <p><b>Biological Sciences Award</b></p> <p>Prize: \$250</p> <p>Criteria: Project showing excellence in biological sciences.</p>	<p><i>Nathan Field Francesca Grisani Jenna Wild</i></p>
<p><b>Doris Casey and Gwen Nicolls Disability Solutions Awards</b></p> <p>Prizes: Two awards of \$100 each</p> <p>Criteria: Most innovative and creative technical solutions focused on assisting individuals to overcome or compensate for physical or cognitive disabilities.</p>	<p><i>Jim Casey Al Nicolls</i></p>
<p><b>Dr. Colin J.L. Lock Memorial Chemistry Award</b></p> <p>Prize: \$100</p> <p>Criteria: A project involving chemistry, especially crystals.</p>	<p><i>Shannon Buck Gillian Goward Anjilee Manhas Wesley Sanchez Abeera Sivarajah</i></p>
<p><b>Dr. Laura Blew Social Sciences Awards</b></p> <p>Prize: Two awards of \$100 each</p> <p>Criteria: Projects that best demonstrate understanding of the scientific process as it applies to social sciences issues.</p>	<p><i>Jim Casey Al Nicolls</i></p>
<p><b>Dr. M. Doyle Biology Award</b></p> <p>Prize: \$250, a plaque, and a trophy for the winner's school</p> <p>Criteria: Best biology project.</p>	<p><i>BASEF</i></p>

**Special Awards**

**Judges**

**Dr. Nicola Simmons Award in Cognition Studies**

*Renato De Tina*

- Prize: \$100
- Criteria: An exemplary project in cognition studies (animals or humans).

**Electrical Contractors Association of Niagara Hamilton Awards**

*Joe Kurpe*

- Prize: Two awards of \$250 each
- Criteria: Projects displaying the best and safest use of electricity in the most creative manner.

**Environmental Inspiration Award**

*Angela Ceccato*

- Prize: \$250
- Criteria: The best environmental project that addresses an environmental problem in an inspirational or innovative way.

**Farncombe Family Digestive Health Research Awards**

*Amber Hann  
Liam Rondeau  
Mark Wulczynski*

- Prize: Two awards of \$250 each and a grand award of \$750, which includes a one-hour interview with one of Farncombe's researchers to discuss further education and career opportunities.
- Criteria: Projects that explore digestive health, related diseases or general family nutrition through experimentation or in-depth literature.

**Firestone Institute for Respiratory Health Award**

*Ryan Singer  
Mackenzie Thorpe  
Tran Zhou*

- Prize: \$250 and a tour of the research labs at the Firestone Institute.
- Criteria: For the best senior project on lung health, air pollution, allergy or respiratory infections.

**Gowling WLG Innovation Awards**

*Derek Sheppard*

**Grand Winner**

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

**Runner Up**

- Prize: \$200
- Criteria: An excellent project demonstrating potentially patentable subject matter.

**Honourable Mention**

- Prize: Certificate
- Criteria: An excellent project demonstrating potentially patentable subject matter.

**Special Awards**
**Judges**
**Hamilton Academy of Dentistry Awards**
*Frank Stechey*

 Prizes: 1<sup>st</sup> \$250 2<sup>nd</sup> \$150 3<sup>rd</sup> \$100

Criteria: Intermediate or senior projects related to dentistry in general; to one specific area of dentistry; or related to oral hard &amp; 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. Also, any aspect of Personal Protective Equipment related to dentistry.

**Hamilton Association for the Advancement of Science, Literature & Art da Vinci Award**
*Peter Banting  
Bruce Farrand  
Herb Schellhorn*

Prize: \$250

Criteria: Project that best combines personal initiative and creativity with a sound, demonstrated understanding of the scientific method.

**Hamilton Wentworth Occasional Teacher Awards**
*Jim Casey*
***Environment and Education Award***

Prize: \$50

Criteria: Junior project that most effectively educates others about an environmental issue.

***Healthy Lifestyles Award***

Prize: \$50

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

***Presentation and Aesthetics Award***

Prize: \$50

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

**Harrison Family Chemistry Award**
*Gillian Goward*

Prize: \$100

Criteria: For a project that has significant chemistry content.

**Hillfield Strathallan College Awards of Excellence**
*Peter Child*
***Life Sciences Award***

Prize: \$100

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

***Scientific Process Award***

Prize: \$100

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

***Innovation Award***

Prize: \$100

Criteria: Senior project that best displays innovation related to any science or engineering.

Special Awards	Judges
<p><b>IEEE (Institute of Electrical and Electronic Engineers) Hamilton Section Awards</b></p> <p>Prize: Two awards of \$100 each</p> <p>Criteria: Best use of electronics in a science or engineering project.</p>	<p><i>Boguslaw Bochenski</i> <i>Eduardo Gomez-Hennig</i></p>
<p><b>Indigenous Peoples of Canada Scientific Study Awards</b></p> <p>Prize: 1<sup>st</sup> \$140    2<sup>nd</sup> \$80    3<sup>rd</sup> \$80</p> <p>Criteria: Projects demonstrating the application of established scientific methods to topics relevant to the culture, heritage or issues of the Indigenous peoples of Canada.</p>	<p><i>David Reed</i></p>
<p><b>International Science &amp; Engineering Affiliated Fair Awards</b></p> <p>Prize: Certificates and/or Medallions</p> <p>Criteria: Deserving intermediate or senior projects related to topics of interest to the following organizations:</p> <p><b>American Psychological Association</b> For a project showing outstanding research in psychological science in the category of behavioural and social sciences or any category related to psychology.</p> <p><b>Ricoh USA, Inc. Award</b> For an outstanding project that addresses issues of environmental responsibility and sustainable development.</p> <p><b>Society for In Vitro Biology Award</b> For an outstanding Grade 11 project exhibiting in the areas of plant or animal in vitro biology or tissue culture.</p> <p><b>U.S. Agency for International Development (USAID)</b> For an exceptional project that has the potential to make an impact on addressing international development challenges. Prize includes a Social Network Media Kit.</p> <p><b>Yale Science &amp; Engineering Association Award</b> For an outstanding Grade 11 project in computer science, engineering, physics or chemistry.</p>	<p><i>Isra Bashir</i> <i>Dana Bee</i> <i>Anika Gupta</i> <i>Neha Gupta</i></p>
<p><b>James A. Winger Award sponsored by the Hamilton Amateur Astronomers</b></p> <p>Prizes: Two awards of \$200 each; one award for Grade 7 to 9 and one for Grade 10 to 12.</p> <p>Criteria: Best projects demonstrating an understanding of a topic related to astronomy, physics, light pollution abatement, or space travel.</p>	<p><i>Sue MacLachlan</i> <i>Jo Ann Salci</i> <i>Chris Strejch</i></p>
<p><b>John W. Howard Materials Research Award</b></p> <p>Prize: \$100</p> <p>Criteria: A project demonstrating innovation in engineering materials, especially concrete.</p>	<p><i>Renato de Tina</i></p>



Special Awards	Judges
<p><b>Laurentian Chapter of SETAC Award</b></p> <p>Prize: Two awards of \$100 each</p> <p>Criteria: Best projects and presentations on a topic related to environmental toxicology, chemistry, pollution, contamination, remediation or environmental protection.</p>	<p><i>Laiba Jamshed</i>  <i>Victoria Restivo</i>  <i>Celina Ruan</i>  <i>Abithiny Selvarajah</i></p>
<p><b>Mahut-Brent Award for Young People in Science and Engineering</b></p> <p>Prize: \$100, certificate and a giant microbe</p> <p>Criteria: An outstanding project by a young person in science that demonstrates an excellent application of scientific thought and creativity towards a subject matter that the participant is passionate about.</p>	<p><i>Caroline Mahut</i></p>
<p><b>McMaster University Awards</b></p> <p><b>Department of Chemistry and Chemical Biology Award</b></p> <p>Prize: \$100</p> <p>Criteria: An outstanding senior or intermediate project connected to chemistry or chemical biology.</p>	<p><i>Shannon Buck</i>  <i>Gillian Goward</i>  <i>Anjilee Manhas</i>  <i>Wesley Sanchez</i>  <i>Abeera Sivarajah</i></p>
<p><b>Department of Chemical Engineering Award</b></p> <p>Prize: \$250</p> <p>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.</p>	<p><i>Ana Arežina</i>  <i>Ryan LaRue</i>  <i>Yuvrajsinh Solanki</i></p>
<p><b>McMaster University Faculty of Engineering Entrance Awards</b></p> <p>See <a href="#">"Scholarships"</a></p>	<p><i>Emily Waldron</i></p>
<p><b>MGD Institute for Infectious Disease Research Awards</b></p> <p>Prizes: Three awards: one of \$50, one of \$100 and a grand prize of \$250, which includes a one-hour interview with a senior person at IIDR for the grand prize winner and their families.</p> <p>Criteria: Excellent senior projects in infectious disease, drug discovery or human health.</p>	<p><i>Maya George</i>  <i>Kenneth Rachwalski</i></p>
<p><b>School of Earth, Environment and Society Awards</b></p> <p><b>Earth and Environmental Sciences Award</b></p> <p>Prize: \$100</p> <p>Criteria: Outstanding project in earth science or environmental science.</p>	<p><i>Luc Bernier</i></p>
<p><b>Geography Award</b></p> <p>Prize: \$100</p> <p>Criteria: Outstanding project in geography or social science.</p>	
<p><b>Venture Academy</b></p> <p>Prize: Free registration for one week of summer camp for two projects.</p> <p>Criteria: Deserving intermediate/senior projects</p>	<p><i>Sophie Lark</i>  <i>Zoe Michalos</i>  <i>Emily Waldron</i></p>

Special Awards	Judges
<p><b>Mechanical Contractors Association of Hamilton Niagara Award</b>            Prize: \$250            Criteria: Best engineering project at the intermediate or senior level.</p>	<p><i>Bill Patterson</i></p>
<p><b>Mohawk College Awards</b></p>	
<p><b>Building &amp; Construction Sciences Awards</b></p>	<p><i>Nathaniel Adie</i></p>
<p><b>Building Sciences Award</b></p>	<p><i>Tyler Sowden</i></p>
<p>Prize: \$50            Criteria: Project related to building sciences, building materials, or energy conservation in structures.</p>	
<p><b>Civil Engineering Award</b></p>	
<p>Prize: \$50            Criteria: Project related to the field of civil engineering.</p>	
<p><b>Transportation Engineering Award</b></p>	
<p>Prize: \$50            Criteria: Project related to planning, design, or operation of any transportation mode or facility.</p>	
<p><b>Computer Science &amp; Information Technology Excellence Awards</b></p>	<p><i>John Holloway</i></p>
<p>Prize: Three awards of \$50 each            Criteria: Projects that demonstrate a thorough understanding of computer application and design in today's world.</p>	
<p><b>Electrical Engineering Technology Awards</b></p>	<p><i>Brian Stefanchuk</i></p>
<p><b>Computer Engineering Technology Award</b></p>	
<p>Prize: \$50            Criteria: A deserving project in computer engineering technology.</p>	
<p><b>Electrical Engineering Award</b></p>	
<p>Prize: \$50            Criteria: A deserving project in electrical engineering studies.</p>	
<p><b>Energy Systems Award</b></p>	
<p>Prize: \$50            Criteria: A deserving project in energy systems.</p>	
<p><b>Mathematics Awards</b></p>	<p><i>Frosina</i></p>
<p>Prize: Two awards of \$50 each, one at the Junior and one at the Senior level.</p>	<p><i>Stojanovska-Pocuca;</i></p>
<p>Criteria: Deserving projects in the category of mathematics or statistics.</p>	<p><i>Kathryn Vrhovnik</i></p>
<p><b>Nelson Steel Awards</b></p>	<p><i>Sophia Blaschke</i></p>
<p>Prize: Two awards of \$150 each</p>	
<p>Criteria: Outstanding junior projects related to two of the following fields: steel, environmental or chemistry.</p>	

**Special Awards**
**Judges**
**New Health Scientist Award**
*Jim Casey*

Prize: \$50

Criteria: A worthy junior project showing good potential for improving the health of our community.

**Nikola Tesla Innovation Awards**
*BASEF*
*Vic Djurdjevic*

Prize: Gold \$100 Silver \$50 Bronze \$50

Criteria: Projects that best display the most innovative application of the body of knowledge associated with Nikola Tesla's work, and/or acknowledgement in the display of Nikola Tesla's contribution by way of his work and inventions.

**Ola Lunyk-Child Memorial Health Awards**
*Peter Child*

 Prize: 1<sup>st</sup> \$250 2<sup>nd</sup> \$150 3<sup>rd</sup> \$100

Criteria: Excellent projects related to any aspect of nursing, nursing research or other medically related fields.

**Procor Engineering Awards**
*Eron Gumabon*
*Ivona Szczerbowicz*

Prize: Junior \$50 Intermediate \$100 Senior \$150

Criteria: Excellent engineering projects.

**The Research Institute of St. Joe's Hamilton, Health Research Awards**
*Laura Garrick*
*Alana Penny*
*Adam Weerdenburg*

Prizes: Two awards of \$100 at the intermediate level

Two awards of \$50 at the junior level

Criteria: Outstanding projects that use strong scientific principles in exploring or solving a problem related to human health issues and communicate the results of their project through an effective visual display.

**Rotary Club of Hamilton Stoney Creek Awards**
*Jim Casey*
*Mike Dunne*
*James McDonnell*

 Prize: 1<sup>st</sup> \$250 2<sup>nd</sup> \$150 3<sup>rd</sup> \$100

Criteria: Best three projects from schools situated in the Hamilton core, Stoney Creek, or by Indigenous students displaying high academic achievement and striving to excel in science and technology.

**Royal Botanical Gardens Award**
*Angela Ceccato*

Prize: \$100 gift certificate from the RBG shop plus a 1-year RBG family membership

Criteria: Best project in plant or environmental sciences.

**Sanofi Biogenius Canada Award**
*Braedon Cowbrough*

Prize: \$100 and a certificate

Criteria: For an outstanding project related to biotechnology, the use of biological systems to produce goods or services, or life sciences.

**Society of Tribologists & Lubrication Engineers – Hamilton Chapter**
*Richard Schrama*

Prize: Two awards of \$250 each

Criteria: Projects that utilize the principles of tribology, (friction, wear and lubrication), to solve a technical problem.

Special Awards	Judges
<b>Talkit.ca Computer Engineering Awards</b> Prize: 1 <sup>st</sup> \$100 2 <sup>nd</sup> \$50 Criteria: For outstanding projects using computer electronics or software.	<i>George Geczy</i>
<b>Water Environment Association of Ontario Award</b> Prize: \$100 Criteria: For a project focused on innovative ideas for preserving and/or enhancing Ontario's water environment.	<i>Dean Iamarino Amr Melligy</i>

## Scholarships

### **Bay Area Health Trust Scholarship/Paul Lakin Life Sciences Award**

*Prize:* One \$1,500 Scholarship, to be redeemed upon acceptance and registration into any undergraduate program at a Canadian post-secondary college or university. Pair projects will split the award.

*Criteria:* An outstanding senior project in the Life Sciences category demonstrating scientific excellence.

### **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 2024-2025 academic year. Will be awarded to both students in a pair project – maximum \$10,000 value.

*Criteria:* A deserving project demonstrating excellence in scientific learning.

### **McMaster University Faculty of Engineering Entrance Awards**

*Prize:* Seven \$1,000 tuition awards, to be redeemed upon acceptance of admission to the Faculty of Engineering. Pair projects will split the award.

*Criteria:* Projects demonstrating excellence in Science, Technology, Engineering or Math.

### **Mohawk College and Sheridan College – Award of Excellence Tuition Scholarships**

*Prize:* Mohawk College and Sheridan College will provide a \$1,000 entrance award. The scholarship may be used toward first year tuition upon the recipient's acceptance and registration in any full-time program at either Mohawk College or Sheridan College. If multiple scholarships are accumulated over more than one year, only one of these scholarships may be used.

*Criteria:* All students earning BASEF 2024 Merit Award Medals (Gold, Silver, Bronze) will win this scholarship.

### **University of Ottawa Entrance Scholarship**

*Prize:* One \$1,000 entrance scholarship applied to tuition fees upon registration in an undergraduate program in the Faculties of Engineering, Science, or Health Sciences at the University of Ottawa. (In the case of a pair project, each student will receive a \$1,000 admission scholarship if they register in appropriate undergraduate programs at the University of Ottawa).

*Criteria:* The most deserving Senior project.

# BASEF 2024 Merit Award Judges



“Merit judging is critical to the success of BASEF. Merit Judges include university faculty and scientists, industrial engineers and scientists, representatives of private research centers and agencies, medical researchers, and senior graduate and undergraduate university students as well as many retired professionals. This diversity of backgrounds provided valuable perspectives when evaluating the projects.

A new Merit Judging form was introduced in 2024. It consists of three criteria: Scientific Thought (45%), Scientific Communication (50%) and Student Engagement (5%). When judging scientific thought, our judges look for the design, analysis, and interpretation of the work presented. Scientific

communication includes the formal report, abstract, logbook or journal, interview, and display. Judges note the participants motivation, enthusiasm and overall understanding of the topic chosen when marking student engagement. Each project is judged independently by a maximum of four judges. Merit judges are always invited to provide feedback on the projects.

A sincere thank you to each Merit Judge and Category Chair for sharing their scientific expertise and supporting all BASEF student participants. Once again, I am impressed by the commitment of these volunteers.

I congratulate all the finalists for their outstanding projects, dedication to science fairs and enthusiasm. You are all winners!”

**- Donna Stack-Durward, Judge-In-Chief**



Indicates a merit judge who also serves as a safety inspector. Please contact our lead safety inspector at [safety@basef.ca](mailto:safety@basef.ca) if you would like to serve as a safety inspector in the future.



Indicates a category chair. Please contact our judge-in-chief at [judging@basef.ca](mailto:judging@basef.ca) if you would like to serve as a category chair in the future.

## MERIT JUDGES 2024

**Adli, Taranah**

*McMaster University*

**Ahmed, Maisha**

*The Hamilton Midwives*

**Akparah, Chinomnso (Chi Chi)**

*Bartek Ingredients*

**Akparah, Eziuche**

*National Bank of Canada*

**Andraous, Yara**

*RBC*

**Arežina, Ana**

*Veolia*

**MERIT JUDGES 2024**

	<b>Auld, Rosemarie</b>	<i>Retired</i>
	<b>Balaban, Mariana</b>	<i>Norfolk County</i>
Q	<b>Barbera, Lidia</b>	<i>McMaster University</i>
Q	<b>Bashir, Isra</b>	<i>McMaster University</i>
Q	<b>Birch, Nigel</b>	<i>Alta Technology Ltd</i>
	<b>Bochenski, Boguslaw</b>	<i>Hydro One Networks Inc.</i>
	<b>Botham, Jay</b>	<i>McMaster University</i>
	<b>Bowman, Dan</b>	<i>Retired; City of Hamilton Police</i>
	<b>Burchett, Rebecca</b>	<i>McMaster University</i>
	<b>Cheung, Tsz Wing</b>	<i>McMaster University</i>
Q	<b>Child, Peter</b>	<i>Retired</i>
	<b>Chzhen, Maria</b>	<i>University of Toronto</i>
	<b>Clapperton, Maya</b>	<i>University of Western Ontario</i>
	<b>Cowbrough, Braeden</b>	<i>McMaster University</i>
	<b>Cupido, Cynthia</b>	<i>McMaster University</i>
	<b>Czebe, Andy</b>	<i>L3Harris Wescam</i>
	<b>De Tina, Renato</b>	<i>Retired; ArcelorMittal Dofasco</i>
	<b>Dhaliwal, Sandra</b>	<i>DS Dental/Desired Smiles</i>
	<b>Dimonico, Nicholas</b>	<i>McMaster University</i>
	<b>Dyer, Benjamin</b>	<i>McMaster University</i>
	<b>Easo, Suzanne</b>	<i>Hoffmann-La Roche Limited</i>
	<b>ElChaar, Nancy</b>	<i>McMaster University</i>
	<b>Fisher, David</b>	<i>Leanforge/Self-Employed</i>
Q	<b>Forbes, James</b>	<i>Retired</i>
Q	<b>Forrest, Fraser</b>	<i>Retired; Stern Laboratories Inc.</i>
	<b>Freger, Shay</b>	<i>McMaster University</i>
	<b>French, Craig</b>	<i>Octal Engineering</i>
	<b>Frigotto, Rodrigo</b>	<i>Alectra Utilities</i>
	<b>Ghaffari, Ayda</b>	<i>Hamilton-Wentworth District School Board</i>
	<b>Greenberg, Sharonna</b>	<i>Professor at McMaster University</i>
Q	<b>Guyatt, Jessica</b>	<i>Mohawk College</i>
	<b>Harrison, Eric</b>	<i>Retired</i>
	<b>Hazelden, Linda</b>	<i>Semi-Retired; Archdiocese of Toronto Catholic Charities</i>



**MERIT JUDGES 2024**

	<b>Hilal, Arwa</b>	<i>University of Toronto</i>
Q	<b>Hill, Terry</b>	<i>Retired City of Hamilton Police</i>
	<b>Hol, Adrienne</b>	<i>Avenue Physiotherapy</i>
	<b>Holloway, John</b>	<i>Mohawk College</i>
	<b>Holt, Howard</b>	<i>Retired; ArcelorMittal Dofasco</i>
	<b>Howcroft, Kat</b>	<i>McMaster University</i>
	<b>Jamshed, Laiba</b>	<i>McMaster University</i>
	<b>Jathar, Amit</b>	<i>OpenText</i>
Q	<b>Jeung, Gordon</b>	<i>Ontario Power Generation</i>
	<b>Johnson, Ross</b>	<i>Retired; Sandwell Consulting Engineers Ltd.</i>
	<b>Johnson, Warren</b>	<i>Retired</i>
	<b>Johnson, Stephen</b>	<i>Thermo Fisher Scientific</i>
	<b>Jolie, Keith</b>	<i>Consultant and Administrative Professional</i>
Q	<b>Jurriaans, Marijke</b>	<i>Greater Hamilton Health Network</i>
	<b>Keller, Martin</b>	<i>Conservation Halton</i>
	<b>Khullar, Rishabh</b>	<i>Thomson Reuters</i>
	<b>Kim, Kate Kyuri</b>	<i>University of Toronto</i>
	<b>Klinck, Henry</b>	<i>University of Toronto</i>
	<b>Kunwar, Ashim</b>	<i>McMaster University</i>
	<b>Kuszczak, Zach</b>	<i>Hydrogeologist at Palmer</i>
	<b>Kuttenkeuler, Peter</b>	<i>Gemba Associates Inc</i>
	<b>Lamb-Gervais, Sheilah</b>	<i>Retired; Family Physician</i>
	<b>LaRue, Ryan</b>	<i>Sessional Faculty at McMaster University</i>
	<b>LaRue, Peter</b>	<i>L3Harris</i>
Q	<b>Lawlor, Daniel</b>	<i>City of Hamilton</i>
	<b>Lawson, Dave</b>	<i>Niagara College</i>
	<b>Lee, Victoria</b>	<i>McMaster University</i>
	<b>Lewis, Justin</b>	<i>AVAR Environmental Inc.</i>
	<b>Lyon, Rachel</b>	<i>McMaster University</i>
	<b>MacAulay, Miranda</b>	<i>Meera Jacob Optometry Corporation</i>
	<b>Mahut, Caroline</b>	<i>AMPERe</i>
	<b>Mahut, Andy</b>	<i>Retired; Stelco Inc.</i>
	<b>Malig, Monika</b>	<i>Quadra Chemicals Inc</i>

## MERIT JUDGES 2024


	<b>McNally, Mike</b>	<i>Retired</i>
	<b>Melhem, Sarah</b>	<i>City of Hamilton</i>
	<b>Mercik, Aleks</b>	<i>PV Labs</i>
	<b>Merlos, Erick S.</b>	<i>City of Hamilton</i>
Q	<b>Morin, Shane</b>	<i>Retired</i>
	<b>Nalyanya, Keith</b>	<i>McMaster University</i>
	<b>Niro, Gino</b>	<i>EngOL Inc</i>
	<b>Papuckoski, Simon</b>	<i>L3Harris Technologies</i>
	<b>Pepler, Meghan</b>	<i>McMaster University</i>
	<b>Perez Rodriguez, Yuniel</b>	<i>Alectra Utilities Corporation</i>
	<b>Perono, Genevieve</b>	<i>McMaster University</i>
	<b>Prevec, Madeline</b>	<i>University of Toronto</i>
	<b>Rachwalski, Kenneth</b>	<i>McMaster University</i>
	<b>Reale, Steve</b>	<i>WalterFedy</i>
	<b>Redding, Laurene</b>	<i>BeiGene</i>
	<b>Romanek, Virginia</b>	<i>McMaster University</i>
	<b>Roy-White, Haylie</b>	<i>Hamilton-Wentworth District School Board</i>
	<b>Ruan, Celina</b>	<i>McMaster University</i>
	<b>Ruiz Blanco, Nelson</b>	<i>Independent</i>
	<b>Saenz de Miera, Mirnaly</b>	<i>CanmetMATERIALS</i>
	<b>Safranyos, Sharon</b>	<i>BeiGene Canada</i>
	<b>Sanguenza, Julia</b>	<i>Brock University</i>
	<b>Saturnino, Joseph</b>	<i>McMaster University</i>
Q	<b>Schaefer, Janet</b>	<i>Homemaker</i>
	<b>Schoenhardt, Mary Anne</b>	<i>Birds Canada</i>
Q	<b>Seneviratne, Salintha</b>	<i>Mohawk College</i>
Q	<b>Seto, Vanessa</b>	<i>Hillfield Strathallan College</i>
	<b>Seto, David</b>	<i>UTEX Scientific Instruments Inc.</i>
	<b>Sharma, Leah</b>	<i>McMaster University</i>
	<b>Sheel, Gaurav</b>	<i>Bruce Power</i>
	<b>Shepard, Ben</b>	<i>Self-Employed</i>
	<b>Shepard, Beverly</b>	<i>Retired; Laboratory Biochemist</i>
Q	<b>Simpson, Mark</b>	<i>Retired; Electrical Engineer</i>


**MERIT JUDGES 2024**









	<b>Song, Michelle</b>	<i>McMaster University</i>
	<b>Stefanchuk, Brian</b>	<i>Mohawk College</i>
	<b>Steffler, Matt</b>	<i>Habitat for Humanity</i>
	<b>Stewart, Mark</b>	<i>McMaster Innovation Park</i>
	<b>Themeles, Tom</b>	<i>Conestoga College, Armelo Engineering</i>
	<b>Toth, Janice</b>	<i>Retired; Credit Valley Hospital &amp; Abbott Diagnostics</i>
	<b>Tozer, David</b>	<i>M.T.R. Services Corp.</i>
	<b>Tuinema, Brian</b>	<i>Germiphene Corporation</i>
	<b>Tuinema, Billie</b>	<i>Hamilton Health Sciences</i>
	<b>Turna, Shantel</b>	<i>Exploration Geologist</i>
	<b>Vanderzwet , Lory</b>	<i>Retired; Mohawk College Engineering Technology</i>
	<b>Vidican, David</b>	<i>McMaster University</i>
	<b>Vidican, Mihaela</b>	<i>Banking Industries, Financial Advisor, Mortgage Specialist</i>
Q	<b>Walsh, Steven</b>	<i>City of Hamilton Public Health Services</i>
■	<b>Wehrle, Paul</b>	<i>Retired</i>
	<b>Wilson, Anne-Marie</b>	<i>Retired; Hamilton-Wentworth District School Board</i>
	<b>Wilson, Wes</b>	<i>John G. Cooke &amp; Associates Ltd.</i>
	<b>Wolfsgruber, Richard</b>	<i>Retired</i>
	<b>Wolfsgruber, Steve</b>	<i>Alithya</i>
■	<b>Wood, Jane</b>	<i>Retired; ArcelorMittal Dofasco</i>
	<b>Wong, Kelly</b>	<i>McMaster University</i>
	<b>Wulczynski, Mark</b>	<i>McMaster University</i>
Q	<b>Young, Bruce</b>	<i>St Joseph's Healthcare Hamilton</i>
	<b>Young, Norman</b>	<i>Retired; Wentworth Board of Education</i>
Q	<b>Yueh, Jeffrey</b>	<i>McMaster University</i>
	<b>Zhao, Kevin</b>	<i>McMaster University</i>

# BASEF 2024 Volunteers

We would like to thank all of our volunteers who help to make BASEF 2024 possible! Please contact [volunteers@basef.ca](mailto:volunteers@basef.ca) if you would like to serve as a BASEF volunteer in the future.



 Indicates a safety inspector










 Indicates a member of the photography team




- Agullana, Nicole Jessly**
- Al-Beer, Jumana**
- Asis, Ellen**
-  **Bates, Al**
-  **Bowdish, Ryan**
-  **Buchanan, Bernard**
- Chhetri, Sital Baruwal**
- Clapperton, Maya**
- Hayhurst, Trevor**
-  **Hayman, Cathy**
-  **Hayman, Steve**
-  **Keller-Olaman, Sue**
- Konrad-Ho, Lauren**
-  **Klinck, Michael**
- Kops, Rita**
-  **Novak, John**
- Sider, Abigail**
- Toth, Janice**
- Verma, Arjun**
- Wong, Kelly**
- Wood, Jane**
- Woods, Selma**
- Zhuang, Blake**

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 Indicates a safety inspector  Indicates a member of the photography team

- Agullana, Nicole Jessly**
- Ahmad, Muiz**
- Al-Beer, Jumana**
- Asis, Ellen**
-  **Bates, Al**
-  **Bowdish, Ryan**
-  **Buchanan, Bernard**
- Caughell, Ralph**
- Chhetri, Sital Baruwal**
- Clapperton, Maya**
-  **Critchley, Stuart**
-  **ElChaar, Nancy**
-  **Enns, Terri**
-  **Hayhurst, Trevor**
-  **Hayman, Cathy**
-  **Keller-Olaman, Sue**

- Konrad-Ho, Lauren**
-  **Klinck, Michael**
-  **Kops, Rita**
- Nottay, Sanjot**
- Nikitovic, Mia**
-  **Novak, John**
- Sider, Abigail**
- Stephen, Tessy Monica**
- Suh, Shion**
- Toth, Janice**
- Verma, Arjun**
- Wong, Kelly**
- Wood, Jane**
- Woods, Selma**
- Yueh, Jeffrey**
- Zhuang, Blake**

# List of Student Exhibitors

## School Boards Represented:

<b>BHNCDSB</b>	<i>Brant Haldimand Norfolk Catholic District School Board</i>
<b>GEDSB</b>	<i>Grand Erie District School Board</i>
<b>HCDSB</b>	<i>Halton Catholic District School Board</i>
<b>HDSB</b>	<i>Halton District School Board</i>
<b>HWCDSD</b>	<i>Hamilton-Wentworth Catholic District School Board</i>
<b>HWDSB</b>	<i>Hamilton-Wentworth District School Board</i>
<b>IND</b>	<i>Independent</i>

## Junior Level

JUNIOR PROJECTS (7/8)					
Name	Project Title	Project Number	Division	School	Board
Abou-Assaleh, Emmalina	The Power and Potential of Electromagnetic Radiation	K06	Eng & Comp Sci	W. H. Morden Public School	HDSB
Abra, Greydon	Let It Rain	L05	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Abu dagga, Obaida	Homemade Tesla Coil	G03	Phys & Math Sci	Ancaster Meadow	HWDSB
Abunayyan, Sarah	The Mind Of A Killer	B15	Health Sciences Human	Dr. David R Williams	HDSB
Akwiwu, Zina	Are Fingerprint Patterns Inherited?	E01	Health Sciences Human	St. Thomas the Apostle (Waterdown)	HWCDSD
Alagukumaran, Diya	BEEP BEEP! Emphasizing on insulin pump malfunctions.	K03	Health Sciences Human	Munn's Public School	HDSB
Alden, Calla	Canine Intelligence	A11	Life Sciences Non-Human	Ancaster Meadow	HWDSB
Alhussein, Halima	Popping Boba	H19	Phys & Math Sci	Cathy Wever	HWDSB
Al-Khafaji, Mariam	The Mind Of A Killer	B15	Health Sciences Human	Dr. David R Williams	HDSB



## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Allarakhia, Imran	LiquiViz: Adaptive AI for 3D Object Detection and Semantic Segmentation in Vision Impairment Devices	P18	Eng & Comp Sci	W. H. Morden Public School	HDSB
Alper, Ege	Smart Strike Badminton Buddy	K11	Eng & Comp Sci	John William Boich Public School	HDSB
Aly, Youssef	Reaction Time	B04	Health Sciences Human	Highview	HWDSB
Amankrah, Miles	Mold Removers	A15	Biotech	Charles R. Beaudoin Public School	HDSB
Amer, Eshal	Power of the Pancreas	B09	Health Sciences Human	Hawthorne Village Public School	HDSB
Anand, Ananya	Can I create a device to help in vision assist for dogs?	K02	Eng & Comp Sci	Hawthorne Village Public School	HDSB
Anhara, Asma	Einstein's theory of gravity	G14	Phys & Math Sci	Ancaster Meadow	HWDSB
Arora, Rishibha	Geothermal Energy Powered Street Light	M07	Eng & Comp Sci	John William Boich Public School	HDSB
Arun, Mrittika	Home Remedy App for Common Illnesses - Cure All @ Home	K19	Health Sciences Human	John William Boich Public School	HDSB
Ashoorion, Bardia	Anti stress bracelet	D03	Health Sciences Human	John William Boich Public School	HDSB
Ashraf, Maahnoor	Shake it Up!: Investigating the Accuracy of a Simple Seismograph	N13	Eng & Comp Sci	Al-Falah Islamic School	IND
Asif, Aleeza	OCD: A Personal Analysis	B05	Health Sciences Human	Tiger Jeet Singh Public School	HDSB
Ataya, Issa	Klebsiella: Molecular Characterization & Discovering A Cure	E17	Biotech	W. H. Morden Public School	HDSB
Awobokun, Fope	Inflation: The Silent Pickpocket	B18	Health Sciences Human	Oakville Christian School	IND
Babem, Timi	Pancreas Problems	B19	Biotech	St. Martin of Tours	HWCDSD

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Badarala, Lohitaksh	Evaluating machine learning models for classifying stars into the MK system using photometric data.	J06	Eng & Comp Sci	Bruce Trail Public School	HDSB
Ballard, Conner	Waste to Wonder	G13	Phys & Math Sci	Charles R. Beaudoin Public School	HDSB
Bamigbola, Teni	Electro-Heavy or Electro-Light?	H20	Phys & Math Sci	Oakville Christian School	IND
Banerjee, Nina	The E.A.B (Epilepsy Alert Bracelet)	J02	Health Sciences Human	John William Boich Public School	HDSB
Banks, Charli	Criminal Minds	C18	Health Sciences Human	Rolling Meadows Public School	HDSB
Barghouth, Samira	Popping Boba	H19	Phys & Math Sci	Cathy Wever	HWDSB
Barlow, Patrick	What Happens To Marshmallows in Different Liquids	A12	Phys & Math Sci	Highview	HWDSB
Beecroft, Grayson	Affordable Emergency Housing	H01	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Belwalkar, Smira	The E.A.B (Epilepsy Alert Bracelet)	J02	Health Sciences Human	John William Boich Public School	HDSB
Berger, Emily	Mall Bacteria	A10	Life Sciences Non-Human	Charles R. Beaudoin Public School	HDSB
Betty, Hailey	Bio Breakdown	L04	Biotech	Cathy Wever	HWDSB
Bharj, Harnarain	Coat Rack Heater	J01	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Bhatti, Sofia	Sticky Knowledge	C19	Health Sciences Human	Al-Falah Islamic School	IND
Bliek, William	What Happens To Marshmallows in Different Liquids	A12	Phys & Math Sci	Highview	HWDSB
Bognar, Avery	Sweet Tooth	C10	Health Sciences Human	Highview	HWDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Boverhof, Maddy	The Road to Recovery: Hamstring vs. Quadricep Graft for ACL Reconstruction in Children	C12	Health Sciences Human	Trinity Christian School	IND
Bowles, Joshua	Heated Traffic Light Module	N17	Eng & Comp Sci	John William Boich Public School	HDSB
Brar, Ganeev	Aqualux - the 'Sweeter' Solution to Traffic Lights	K18	Eng & Comp Sci	Charles R. Beaudoin Public School	HDSB
Budgell, Jake	Snow Away	M11	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Budram, Aven	Recycling Robot Parts	J03	Eng & Comp Sci	Hawthorne Village Public School	HDSB
Budz, Evan	Virtual Lifeguard: A Novel AI Approach to Drowning Prevention	N23	Eng & Comp Sci	Charles R. Beaudoin Public School	HDSB
Burgess, Charlotte	Which toothpaste works best?	D18	Phys & Math Sci	W. H. Morden Public School	HDSB
Burns, Molly	X-inactive Marks The Spot For Tortoiseshell Cats	A13	Life Sciences Non-Human	Ancaster Meadow	HWDSB
Cani, Vlera	Which toothpaste works best?	D18	Phys & Math Sci	W. H. Morden Public School	HDSB
Castelli, Clare	Germs at School	A06	Life Sciences Non-Human	St. Augustine	HWCDSD
Castelli, Simon	Germs at School	A06	Life Sciences Non-Human	St. Augustine	HWCDSD
Chartrand, Arya	Sweet Tooth	C10	Health Sciences Human	Highview	HWDSB
Chaudhry, Umar	A SPARK ON THE OTHER SIDE: Which material conducts heat transfer the quickest?	F05	Phys & Math Sci	Al-Falah Islamic School	IND
Chawla, Karthik	PROJECT DRONE: Disaster Recovery, Outreach for Natural Emergencies	N15	Eng & Comp Sci	W. H. Morden Public School	HDSB
Chen, Karis	Screens before Sleep	C11	Health Sciences Human	Dr. David R Williams	HDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Chen, Nina	Geothermal Energy Powered Street Light	M07	Eng & Comp Sci	John William Boich Public School	HDSB
Connor, Nathan	Making a Cost Effective Laser Engraver	H06	Eng & Comp Sci	Oakville Christian School	IND
Cook, Hanna	Most Effective Mouthwash	E16	Biotech	Ancaster Meadow	HWDSB
Crawley, Liam	Pancreas Problems	B19	Biotech	St. Martin of Tours	HWCDSD
Dagg, Sophie	Beauty Blender Bacteria	A17	Life Sciences Non-Human	Charles R. Beaudoin Public School	HDSB
Danda, Sahil	From Poop to Gas: Making Biogas and Cleaning it with Water	N08	Biotech	W. H. Morden Public School	HDSB
De Souza, Arya	Back to the Water - Creating 3D Printed Prosthetics for Painted Turtles	A05	Eng & Comp Sci	W. H. Morden Public School	HDSB
Dear, Leah	Quick Scribe	P04	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Dekker, Evan	Modern Secure Communications - libkeychain	L03	Eng & Comp Sci	Charles R. Beaudoin Public School	HDSB
Di Nicola, Gabriel	Water Is Not Enough; Maintaining Electrolyte Balance During Illness	C14	Phys & Math Sci	Our Lady of Peace	HWCDSD
Dirani, Lana	Einstein's theory of gravity	G14	Phys & Math Sci	Ancaster Meadow	HWDSB
Dong, Heather	Convolutional Neural Networks: Radiologists of the Future	J19	Health Sciences Human	W. H. Morden Public School	HDSB
Duncan, Emma	Beauty Blender Bacteria	A17	Life Sciences Non-Human	Charles R. Beaudoin Public School	HDSB
Durowoju, Hannah	Using artificial intelligence to improve observation in child and adolescent mental units	P14	Eng & Comp Sci	Our Lady of Victory Elementary School	HCDSB
Dwarka, Eliana	Sugar Rush	E06	Biotech	John William Boich Public School	HDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Elder, Ruby	Diy eco friendly lip oil	F18	Phys & Math Sci	Ancaster Meadow	HWDSB
Esho, Fifi	Decay on Display: The Sweet Truth About Sugary Drinks And Your Teeth	N06	Health Sciences Human	Dr. David R Williams	HDSB
Evers, Ella	Detect and Protect	M17	Earth & Env Sci	Rolling Meadows Public School	HDSB
Faisal, Abiha	Caffeine Buzz and Sugar Rush: Exploring the Night's Hush	D11	Health Sciences Human	Rattlesnake Point Public School	HDSB
Fan, Parker	The Gaming Effect	N04	Health Sciences Human	Oakville Christian School	IND
Farhan, Anaum	Alumify	L15	Earth & Env Sci	Rattlesnake Point Public School	HDSB
Fayyaz, Alishba	Alumify	L15	Earth & Env Sci	Rattlesnake Point Public School	HDSB
Fedsin, Justin	Can I convert static electricity to current electricity	H05	Phys & Math Sci	Highview	HWDSB
Fernandes, Aaliyah	Sweet as Sugar	F17	Phys & Math Sci	Oakville Christian School	IND
Formela, Lily	Sugar Rush	E06	Biotech	John William Boich Public School	HDSB
Forrest, Emma	SSS - The Street Smart Safety App	K17	Eng & Comp Sci	Balaclava	HWDSB
Gardanis, Panayioti	Can We Use Robots and Machines to Help Blind People	J20	Eng & Comp Sci	Hawthorne Village Public School	HDSB
Gharbia, Aya	The Wi-Fi dilemma: Who Is Blocking My Signal? The effect of different building materials on Wi-Fi	G17	Phys & Math Sci	Al-Falah Islamic School	IND
Gheva, Sarah	How much soap do you really need to get the oil off of your hands?	G20	Phys & Math Sci	Rolling Meadows Public School	HDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Gilchrist, Jameson	MOTIV8-2-HYDR8: H2O FITNESS MOTIV8R	L02	Eng & Comp Sci	St. Elizabeth Seton Elementary School	HCDSB
Gomber, Aarunya	Seeker Bot	H03	Eng & Comp Sci	W. H. Morden Public School	HDSB
Granka, Graclyn	Let It Rain	L05	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Halim, Joshua	Reach for the Stars	N11	Phys & Math Sci	Oakville Christian School	IND
Harrington, Neil	Can I convert static electricity to current electricity	H05	Phys & Math Sci	Highview	HWDSB
Hart, Nicholas	How Organic is Too Organic???	E04	Biotech	Charles R. Beaudoin Public School	HDSB
He, Ted	Urban Wind Energy	M05	Eng & Comp Sci	Charles R. Beaudoin Public School	HDSB
Hill, Alivia	Alien Plants	M06	Earth & Env Sci	St. Clare of Assisi	HWCDSD
Horn, Ethan	E-Clip	M03	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Huang, Michelle	Solar Desalination Versus Other Filtration Methods	L10	Phys & Math Sci	Cathy Wever	HWDSB
Huang, Tiffany	Solar Desalination Versus Other Filtration Methods	L10	Phys & Math Sci	Cathy Wever	HWDSB
Hume, Lucy	Alien Plants	M06	Earth & Env Sci	St. Clare of Assisi	HWCDSD
Humphreys, Elliot	GET A GRIP	F06	Phys & Math Sci	Oakville Christian School	IND
Imran, Myra	Love At First Sight	C04	Health Sciences Human	Ancaster Meadow	HWDSB
Jagt, Dylan	Making a Cost Effective Laser Engraver	H06	Eng & Comp Sci	Oakville Christian School	IND
Jain, Tiara	AquaWise	M10	Eng & Comp Sci	John William Boich Public School	HDSB



## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Javidi, Glareen	Optimal Watering Patterns for Sunflower Development	A14	Life Sciences Non-Human	Munn's Public School	HDSB
John, Sophie	The Effects Of Social Media On Kids	C13	Health Sciences Human	Ancaster Meadow	HWDSB
Johnson, Malcolm	Chewing the 5-Second rule	C16	Phys & Math Sci	Tiger Jeet Singh Public School	HDSB
Jones, Abigale	Monitoring Glucose Levels	C05	Health Sciences Human	Hawthorne Village Public School	HDSB
Jones, Darius	MOTIV8-2-HYDR8: H2O FITNESS MOTIV8R	L02	Eng & Comp Sci	St. Elizabeth Seton Elementary School	HCDSB
Joseph, Julia	Opticlip	H17	Eng & Comp Sci	Our Lady of the Assumption	HWCDSD
Kahvaie-Zad, Nikki	The Science Behind Lucid Dreams	D09	Health Sciences Human	Munn's Public School	HDSB
Kakan, Suvi	The Effects of Artificial Light on Marine Life	A01	Earth & Env Sci	Munn's Public School	HDSB
Kaliga, Varnika	DNA-myte Party	N02	Life Sciences Non-Human	Sunningdale Public School	HDSB
Kang, Jace	Where should we Terraform?	M16	Earth & Env Sci	Hawthorne Village Public School	HDSB
Kar, Vivaan	The Alginate Advantage	F20	Biotech	W. H. Morden Public School	HDSB
Kaur, Ashmeet	Run For The Greater Good	K13	Eng & Comp Sci	John William Boich Public School	HDSB
Khan, Rameen	Answers to Aid Anopsia	K04	Eng & Comp Sci	Rattlesnake Point Public School	HDSB
Khan, Shayaan	Field Goal! The Science Behind A Perfect Football Kick	M01	Phys & Math Sci	Frank Panabaker South	HWDSB
Khan, Wardah	Battle of the Stomach: Antacids vs Acid	D08	Biotech	Al-Falah Islamic School	IND

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Kim, Nayune	The Double-Slit Experiment	G15	Phys & Math Sci	Charles R. Beaudoin Public School	HDSB
Kinsella, Anabella	EZ Dispenser	K07	Eng & Comp Sci	St. Bernadette	HWCDSD
Kinzl, Palmer	Brilliant Bicycle Dynamo	L17	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Kiran, Yuti	Hospital Wait Time App	C07	Health Sciences Human	John William Boich Public School	HDSB
Kolodenko, Nika	Turmeric and how it affects you.	E08	Biotech	Munn's Public School	HDSB
Kulasic, Zaid	Evaluation the Effectiveness of Insulation Materials	F07	Phys & Math Sci	Al-Falah Islamic School	IND
Lai, Brandon	Electrifying Objects	F03	Phys & Math Sci	Oakville Christian School	IND
LeBlanc, Jordan	A Novel System for Objective Clinical Assessment of Cold and Influenza Using Infrared Image Analysis	N24	Health Sciences Human	St. Matthew Elementary School	HCDSB
Lee, Simon	Harmony in Glass: Building a Bioactive Terrarium	N01	Earth & Env Sci	Our Lady of Victory Elementary School	HCDSB
Li, Yuewen	Improving PDAC Prognosis: Novel Approach Utilising CRISPR-Mediated Gene Knockout for TME Disruption	E05	Biotech	W. H. Morden Public School	HDSB
Liaghati, Lily	Busier Bees: Increasing Productivity in Bees	A04	Eng & Comp Sci	Munn's Public School	HDSB
Liu, Katelynn	The Double-Slit Experiment	G15	Phys & Math Sci	Charles R. Beaudoin Public School	HDSB
Lotfi, Andrew	Green Clean	E09	Biotech	Oakville Christian School	IND
MacLean, Myla	Criminal Minds	C18	Health Sciences Human	Rolling Meadows Public School	HDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Maftoon, Armita	Physical models of patient heart valves for planning surgery	D04	Health Sciences Human	Frank Panabaker South	HWDSB
Maftoon, Vianna	Physical models of patient heart valves for planning surgery	D04	Health Sciences Human	Frank Panabaker South	HWDSB
Manoj, Advik	MacroDiet	D10	Health Sciences Human	Oodenawi Public School	HDSB
Mansour, Tia	Diy eco friendly lip oil	F18	Phys & Math Sci	Ancaster Meadow	HWDSB
Marrazzo, Lauren	Sweet Science: Exploring the World of Diabetes	B12	Health Sciences Human	St. Clare of Assisi	HWCDSD
Maru, Shiv	Revolutionising Healthcare: One Atom at a Time	D07	Health Sciences Human	Dr. David R Williams	HDSB
Matloubiaghdam, Agrin	To Vegan or Not to Vegan: Are we killing the planet?	M04	Earth & Env Sci	Dr. David R Williams	HDSB
Mawji, Ayaan	Smart Strike Badminton Buddy	K11	Eng & Comp Sci	John William Boich Public School	HDSB
McElheron, Julianna	What Chemicals Cause Aggressive Behaviour	D06	Health Sciences Human	Charles R. Beaudoin Public School	HDSB
McKerracher, Gavin	EPIC (Escapement Piezoelectric Impact Converter)	K01	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Mejia Perfiliev, Sofia	Mall Bacteria	A10	Life Sciences Non-Human	Charles R. Beaudoin Public School	HDSB
Memme, Rocco	Mold Removers	A15	Biotech	Charles R. Beaudoin Public School	HDSB
Merchant, Sahana	The Power and Potential of Electromagnetic Radiation	K06	Eng & Comp Sci	W. H. Morden Public School	HDSB
Mills-Hyde, Jahvon	How does a self-charging electric plane use wind power to help us and the world?	H14	Eng & Comp Sci	Highview	HWDSB
Mithun, Joshua	EZ Dispenser	K07	Eng & Comp Sci	St. Bernadette	HWCDSD

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Montemayor, Brianna	Prop Magic (creating the room where it happened)	P09	Eng & Comp Sci	St George-German Public School	GEDSB
Morales, Alena	Older than Osmosis	B16	Health Sciences Human	Rolling Meadows Public School	HDSB
Mousa, Rayan	Don't Get Rusty!	G10	Phys & Math Sci	Al-Falah Islamic School	IND
Mrmak, Mila	RED VELVET CAKE: BAKING WITH AND WITHOUT RED FOOD COLOURING	G16	Phys & Math Sci	Ancaster Meadow	HWDSB
Munoz-Johnson, Vivien	CAN MY CAT STILL HEAR?	B20	Life Sciences Non-Human	Highview	HWDSB
Muthukumarana, Dithira	CO2 Free Ethanol Powered Cars?	L13	Eng & Comp Sci	St. Matthew	HWCDSD
Muthy, Arav	Where should we Terraform?	M16	Earth & Env Sci	Hawthorne Village Public School	HDSB
Myska, Sam	Snow Away	M11	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Nabi, Safirun	HotWheels and Aerodynamix	G08	Phys & Math Sci	Highview	HWDSB
Naidu, Mithru	LiquiViz: Adaptive AI for 3D Object Detection and Semantic Segmentation in Vision Impairment Devices	P18	Eng & Comp Sci	W. H. Morden Public School	HDSB
Nair, Arshia	Fire that Fat! : Impact of Aerobic vs Anaerobic Exercise on Visceral Fat in Adolescents	B02	Health Sciences Human	Tiger Jeet Singh Public School	HDSB
Nastase, Sami	Refuge from Radars	H10	Eng & Comp Sci	W. H. Morden Public School	HDSB
Ndibmun, Hanniel	Electrophoresis and Chromatography: Real Life Applications	G04	Phys & Math Sci	Cathy Wever	HWDSB
Nhan, Aivy	Constructing a Rotating Solar Panel + How It Works	H04	Eng & Comp Sci	Ancaster Meadow	HWDSB
Nicholls, Julia	Turmeric and how it affects you.	E08	Biotech	Munn's Public School	HDSB
Okanla, Yomade	Bioplastics Unwrapped: Investigating the Properties of Bioplastics	E13	Biotech	Our Lady of Victory Elementary School	HCDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Okpala, Chiazom	Intervention for ADHD (no meds included)	C20	Health Sciences Human	Oakville Christian School	IND
O'Leary, Liam	Aqualux - the 'Sweeter' Solution to Traffic Lights	K18	Eng & Comp Sci	Charles R. Beaudoin Public School	HDSB
Olumide, Fola	Harmony in Glass: Building a Bioactive Terrarium	N01	Earth & Env Sci	Our Lady of Victory Elementary School	HCDSB
Olumide, Ladi	Bioplastics Unwrapped: Investigating the Properties of Bioplastics	E13	Biotech	Our Lady of Victory Elementary School	HCDSB
Ongking, Carlo	How Does the Size & Shape of a Baseball Park Affect Batting Averages?	G09	Phys & Math Sci	MacLachlan College	IND
Orphanos, Rachael	Destructive Digestion: Foreign Objects in our Pets Digestive Tract	A20	Life Sciences Non-Human	Hawthorne Village Public School	HDSB
Pan, Isabella	Revolutionising Healthcare: One Atom at a Time	D07	Health Sciences Human	Dr. David R Williams	HDSB
Papade, Avani	Weathering Space Without Protection	D13	Health Sciences Human	Dr. David R Williams	HDSB
Parachin, Maya	The Frytastic Fry Fit	K16	Eng & Comp Sci	Oakville Christian School	IND
Paranthaman, Vaisannya	Automated Waste Sorting System	J05	Eng & Comp Sci	Rattlesnake Point Public School	HDSB
Parsons, Emaya	W.E. Hydrate	K12	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Patel, Arohee	Guitar Strum Test	G18	Phys & Math Sci	W. H. Morden Public School	HDSB
Patel, Nevin	Green Clean	E09	Biotech	Oakville Christian School	IND
Paul, Shayaan	Brilliant Bicycle Dynamo	L17	Eng & Comp Sci	Rolling Meadows Public School	HDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Peart, Evelyn	AI Use In Determining Material Of Litter In Nature	J10	Eng & Comp Sci	Tiger Jeet Singh Public School	HDSB
Piccoli, Luca	Water Is Not Enough; Maintaining Electrolyte Balance During Illness	C14	Phys & Math Sci	Our Lady of Peace	HWDSB
Pietryszyn, Cohen	Magnetic Levitation	G12	Phys & Math Sci	Rolling Meadows Public School	HDSB
Polyanska, Maria	Extending range of VHF/UHF transceivers by improving antenna efficiency for emergency communications	H15	Eng & Comp Sci	Forest Trail Public School	HDSB
Ponnambalam, Karthik	Investigating the use of a gelatin gel to prevent the breakage of fragile items	N09	Phys & Math Sci	Hillfield Strathallan College	IND
Prias, Mariana	Can humans distinguish AI-generated images from real photos?	K09	Health Sciences Human	Highview	HWDSB
Prokipczuk, Katherine	Light Pollution	M14	Earth & Env Sci	Ancaster Meadow	HWDSB
Puri, Waris	Auto Hydrator	J08	Eng & Comp Sci	Rattlesnake Point Public School	HDSB
Qazi, Daniyal	From Pixels to Predictions: A Deep Learning Method to Detect Pneumonia in Chest X-Ray Images	P08	Health Sciences Human	W. H. Morden Public School	HDSB
Qazi, Zayn	From Pixels to Predictions: A Deep Learning Method to Detect Pneumonia in Chest X-Ray Images	P08	Health Sciences Human	W. H. Morden Public School	HDSB
Qureshi, Ana	Dazzling in the Distance: How Does Light Intensity Change With Distance?	N12	Phys & Math Sci	Al-Falah Islamic School	IND
Race, Elias	Reaction Time	B04	Health Sciences Human	Highview	HWDSB
Rao, Musa	The Helping Arm	J07	Eng & Comp Sci	John William Boich Public School	HDSB
Rao, Rahul	The Alginate Advantage	F20	Biotech	W. H. Morden Public School	HDSB



## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Ravulapati, Naga Shruthika	Carbon Farms - A Futuristic Solution to A Current Problem	L06	Earth & Env Sci	Hawthorne Village Public School	HDSB
Rechan, Anika C	DNA-myte Party	N02	Life Sciences Non-Human	Sunningdale Public School	HDSB
Reddiar, Megha	Lobotomy V.S. Concussions	C09	Health Sciences Human	Hawthorne Village Public School	HDSB
Reise, Miles	The Dehumidity Tent	C06	Eng & Comp Sci	John William Boich Public School	HDSB
Roche-Tereskewitz, Addison	Animals VS Mental Health	E03	Health Sciences Human	Rolling Meadows Public School	HDSB
Rosien, Sophia	AquaTag	H07	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Saad Eldin, Mahmoud	Flu Fighters 101	D19	Health Sciences Human	Al-Falah Islamic School	IND
Saadeldin, Tala	The Mighty Battle: Blood Clots Vs. Anticoagulants	D01	Health Sciences Human	Al-Falah Islamic School	IND
Saeed, Ahmed	Homemade Tesla Coil	G03	Phys & Math Sci	Ancaster Meadow	HWDSB
Saenz-Rincon, Silvana	MedScanPro	D17	Biotech	St. Elizabeth Seton Elementary School	HCDSB
Saleh, Fatima	Spectrum of Taste	D02	Health Sciences Human	W. H. Morden Public School	HDSB
Salman, Sameeha	When life dims your lights, just add a Conductor!	F12	Phys & Math Sci	Al-Falah Islamic School	IND
Sayeed, Sehrish	Sweet Truth About Sugary Drinks And Your Teeth	N06	Health Sciences Human	Dr. David R Williams	HDSB
Schubert, Kayla	Older than Osmosis	B16	Health Sciences Human	Rolling Meadows Public School	HDSB
Sels, Bridgette	AquaTag	H07	Eng & Comp Sci	Rolling Meadows Public School	HDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Seoh, Thomas	Stochastic Dynamics in Epidemiological Models: Exploration of Predictability Using SIR Frameworks	P12	Health Sciences Human	W. H. Morden Public School	HDSB
Shahid, Momin	Chewing the 5-Second rule	C16	Phys & Math Sci	Tiger Jeet Singh Public School	HDSB
Sharma, Avaya	Who Are The Sic'est Oakvillians	B10	Health Sciences Human	Oakville Christian School	IND
Sharma, Seher	ART in the era of ARTificial Intelligence: Are we ready for it?	N19	Eng & Comp Sci	W. H. Morden Public School	HDSB
Sheik, Yusuf	Wind's Algorithm	K15	Eng & Comp Sci	Tiger Jeet Singh Public School	HDSB
Sheth, Rayna	Which AI Detects AI?	J16	Eng & Comp Sci	W. H. Morden Public School	HDSB
Siddicky, Sarim	Vision Transformers (ViTs) for the Diagnosis of Diabetic Retinopathy	E18	Health Sciences Human	W. H. Morden Public School	HDSB
Small, Owen	SSS - The Street Smart Safety App	K17	Eng & Comp Sci	Balaclava	HWDSB
Smith, Jared	CO2 Free Ethanol Powered Cars?	L13	Eng & Comp Sci	St. Matthew	HWCDSD
Solomon, Cleoneka	The Cool Clinostat	M20	Life Sciences Non-Human	Cathy Wever	HWDSB
Soofi, Uzair	Auto Hydrator	J08	Eng & Comp Sci	Rattlesnake Point Public School	HDSB
Sowdagar, Hiba	Role of Liquid Biopsy: Circulating Tumor Cells (CTCs) in Medical Oncology	B07	Health Sciences Human	Ancaster Meadow	HWDSB
Srivastava, Daksh	Modeling Sea Surface Salinity and Temperature Impact on Phytoplankton & Whales: Canadian Atlantic	L16	Earth & Env Sci	Pilgrim Wood Public School	HDSB
Stokes, Madelyn	Destructive Digestion: Foreign Objects in our Pets Digestive Tract	A20	Life Sciences Non-Human	Hawthorne Village Public School	HDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Strickland, Georgia	You Want Fries With That?	H18	Phys & Math Sci	Oakville Christian School	IND
Su, Emma	Back to the Water - Creating 3D Printed Prosthetics for Painted Turtles	A05	Eng & Comp Sci	W. H. Morden Public School	HDSB
Su, Irene	Optimal Watering Patterns for Sunflower Development	A14	Life Sciences Non-Human	Munn's Public School	HDSB
Sun, Micah	Supplements: Supportive or Scam? Short and Long term effects of supplements and risk of overdose.	C15	Health Sciences Human	Hawthorne Village Public School	HDSB
Szecsodi, Ben	Affordable Emergency Housing	H01	Eng & Comp Sci	Rolling Meadows Public School	HDSB
Tan, Siqi	Improving PDAC Prognosis: Novel Approach Utilising CRISPR-Mediated Gene Knockout for TME Disruption	E05	Biotech	W. H. Morden Public School	HDSB
Tayal, Jaylan	GreenHound - Your Personal Litter Tracker For a Greener Future	N18	Eng & Comp Sci	John William Boich Public School	HDSB
Taylor, Kyrah	Opticlip	H17	Eng & Comp Sci	Our Lady of the Assumption	HWCDSD
Thomas, Will	From Concept to Code	J14	Eng & Comp Sci	St. Augustine	HWCDSD
Timmins, Luke	Angles of refraction: Snell's law put into action	G02	Phys & Math Sci	Our Lady of Victory Elementary School	HCDSB
Umah, Michelle	Solar Powered Water Desalination	G01	Phys & Math Sci	Ancaster Meadow	HWDSB
Urs, Janya	Turbine Powered Car	J17	Eng & Comp Sci	John William Boich Public School	HDSB
Vander Wal, Evan	Exploring how viscosity and volume of a liquid affects the trajectory of a sphere	G19	Phys & Math Sci	Dundas Central Public	HWDSB

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Vidican, Jonathan	Chaos, break the wave!	J15	Phys & Math Sci	St. Mary Elementary School	HCDSB
Vignesh, Bhavishyaa	Cosmic Fields (Advanced Lunar Food Production System)	A02	Biotech	Post's Corners Public School	HDSB
Vivek, Bhav	Guitar Strum Test	G18	Phys & Math Sci	W. H. Morden Public School	HDSB
Vu, Jayden	Angles of refraction: Snell's law put into action	G02	Phys & Math Sci	Our Lady of Victory Elementary School	HCDSB
Vyas, Eshaan	Stochastic Dynamics in Epidemiological Models: Exploration of Predictability Using SIR Frameworks	P12	Health Sciences Human	W. H. Morden Public School	HDSB
Wadehra, Raima	Dopamine levels- Humour versus tickles, which one releases more dopamine and why?	C03	Health Sciences Human	Hawthorne Village Public School	HDSB
Wamatu, Nyawira	Detect and Protect	M17	Earth & Env Sci	Rolling Meadows Public School	HDSB
Warmington, Matthew	How does a self-charging electric plane use wind power to help us and the world?	H14	Eng & Comp Sci	Highview	HWDSB
Warren, Tessa	Sweet as Sugar	F17	Phys & Math Sci	Oakville Christian School	IND
Waseem, Nashra	Power of the Pancreas	B09	Health Sciences Human	Hawthorne Village Public School	HDSB
Waseem, Zoha	Malicious Melanoma: Convolutional Neural Network's Accuracy in Diagnosing Malignant Melanoma	K10	Health Sciences Human	Al-Falah Islamic School	IND
Waseem, Zoya	Pneumonia Detective: The Effectiveness of a Pneumonia Detection ML VS. Medical Practitioners	K20	Health Sciences Human	Al-Falah Islamic School	IND

## JUNIOR PROJECTS (7/8)

Name	Project Title	Project Number	Division	School	Board
Welch, Callie	Have You Ever Felt Like You Were Being Watched	D05	Health Sciences Human	Highview	HWDSB
West, Eli	Anti stress bracelet	D03	Health Sciences Human	John William Boich Public School	HDSB
Willers, Toby	Heated Traffic Light Module	N17	Eng & Comp Sci	John William Boich Public School	HDSB
Wu, Ruofei	GreenHound - Your Personal Litter Tracker For a Greener Future	N18	Eng & Comp Sci	John William Boich Public School	HDSB
Xing, Angel	Solar Powered Water Desalination	G01	Phys & Math Sci	Ancaster Meadow	HWDSB
Yang, Claire	Screens before Sleep	C11	Health Sciences Human	Dr. David R Williams	HDSB
Yang, Zhuo	Automated Pharmaceutical Defect Detection Using Machine Vision	P07	Eng & Comp Sci	W. H. Morden Public School	HDSB
Zeng, Joanna	The Effects of Artificial Light on Marine Life	A01	Earth & Env Sci	Munn's Public School	HDSB
Zheng, Tony	The Gaming Effect	N04	Health Sciences Human	Oakville Christian School	IND
Zheng, Wendy (Yawen)	W.E. Hydrate	K12	Eng & Comp Sci	Rolling Meadows Public School	HDSB

## Intermediate Level

<b>INTERMEDIATE PROJECTS (9/10)</b>					
<b>Name</b>	<b>Project Title</b>	<b>Project Number</b>	<b>Division</b>	<b>School</b>	<b>Board</b>
Alsaadi, Bahaa Al Deen	Bits to Bedside: An Ingenious Exploration of Machine Learning in Triage Assessments	J12	Health Sciences Human	Al-Falah Islamic School	IND
Alsaadi, Zena	Bits to Bedside: An Ingenious Exploration of Machine Learning in Triage Assessments	J12	Health Sciences Human	Al-Falah Islamic School	IND
Barkman, Tristan	Coral Reefs and the Kellwasser Event: Unraveling the Devonian Extinction Mystery	L11	Earth & Env Sci	Home Schooling	IND
Campbell, Isla	A new device of treating and preventing the damage of heart attacks, CASS	E20	Biotech	Blyth Academy	IND
Chan Carusone, Senna	Illuminating Your Emotions: Using Symmetry in Electroencephalogram Data to Detect and Display Stress Levels	P15	Health Sciences Human	Burlington Central High School	HDSB
Dua, Shambhvi	Decoding Brainwaves: A Machine Learning Approach to Seizure Prediction	B14	Health Sciences Human	White Oaks Secondary School	HDSB
Efthimiadis, Anthony	Instant Skin Cancer Diagnosis: AI Hybrid Neural Networks with Precise Evolution Tracking	P11	Eng & Comp Sci	Oakville Trafalgar High School	HDSB
Ipwanshek, Gabriella	Mind & Cycle: Exploring the hormonal pathophysiology of catamenial epilepsy and potential treatments	N05	Health Sciences Human	White Oaks Secondary School	HDSB
Johnson, William	Assessing the Need for a United Nations' Space Sustainability Goal	L14	Earth & Env Sci	Westdale Secondary School	HWDSB
Jovicevic, Teodora	Glucose in Various Substances and How it Affects the Body	G11	Phys & Math Sci	Ancaster High	HWDSB

## INTERMEDIATE PROJECTS (9/10)

Name	Project Title	Project Number	Division	School	Board
Kudale, Arnav	Recreator3D.com - Is recycling filament cheaper than buying spools?	P06	Eng & Comp Sci	White Oaks Secondary School	HDSB
Kurji, Alina	Hydroponics: A Solution for the Food Insecure	N25	Life Sciences Non-Human	Westmount Secondary School	HWDSB
LeBlanc, Jacob	Development of a Novel Integrated System for Electric Vehicle Charging During Vehicle Operation	P02	Eng & Comp Sci	Abbey Park High School	HDSB
Lopes, Isabella	Expansion of the Cosmos part 2	F02	Phys & Math Sci	Bishop Ryan Secondary School	HWCDSD
Luo, Bonnie	FlameWatch: A Real-Time TensorFlow and Edge TPU Powered Home Defense System	P05	Eng & Comp Sci	White Oaks Secondary School	HDSB
Marsh, Claire	The Gluten Sensor: Detecting Gluten in Food Using Artificial Intelligence and TinyML	B03	Health Sciences Human	M. M. Robinson High School	HDSB
Mehfil, Fiza	Detecting and Analyzing Exoplanet Atmospheres using K-Nearest-Neighbours Algorithm and OpenCV	N20	Eng & Comp Sci	Milton District High School	HDSB
Mehr, Ariana	Great Minds Think Alike!	N07	Biotech	Bishop P. F. Reding Secondary School	HCDSB
Morash, Ella	The Psychology of Music: Understanding how music affects us and how we can use it to our advantage	B01	Health Sciences Human	Blyth Academy	IND
Pacifici, Nicholas	The PrepStep: A Mobile Health Platform to Detect Ventricular Cardiomyopathy in Athletes Using AI	H08	Health Sciences Human	St. Mary Secondary School	HWCDSD
Park, Jieun	Language Policies and Mass Psychology Within a Community of Practice Regarding Sacred Language	B11	Health Sciences Human	Bishop Tonnos Secondary School	HWCDSD



## INTERMEDIATE PROJECTS (9/10)

Name	Project Title	Project Number	Division	School	Board
Perlawar, Prathamesh	Green Solutions: Transforming Food Waste into Bioplastic	E10	Biotech	White Oaks Secondary School	HDSB
Powell, Luke	Flashify: An Innovative Flash Card Alternative	N21	Eng & Comp Sci	Aldershot High School	HDSB
Qin, Yuyang	How does the geometry and texture impact the stability of tires under extreme weather conditions	G06	Phys & Math Sci	Hillfield Strathallan College	IND
Rajkumar, Raahith	Biofuel Bounty: Unveiling the Power of Waste Oils	E14	Biotech	Hillfield Strathallan College	IND
Rashid, Nabira	Investigating the Effect of Light Color on Solar Cell Voltage Output	F13	Phys & Math Sci	White Oaks Secondary School	HDSB
Rastogi, Maithili	Investigating the Effect of Light Color on Solar Cell Voltage Output	F13	Phys & Math Sci	White Oaks Secondary School	HDSB
Salimi, Rida	Analyzing Cosmic Light Pollution by Comparing Different Coloured Filters	L09	Earth & Env Sci	Garth Webb Secondary School	HDSB
Saravanan, Rakshan	The electrocorpulgraph: Can AI change auscultation?	E07	Health Sciences Human	Ancaster High	HWDSB
Shaiju, Julian	Great Minds Think Alike!	N07	Biotech	Bishop P. F. Reding Secondary School	HCDSB
Sheel, Vedant	A Novel Approach to ASL Translation Using AI	N26	Eng & Comp Sci	Waterdown District Secondary School	HWDSB
Tripathi, Eva	NephroGenesis: Unlocking the Secrets of Kidney Regeneration	E11	Biotech	Elsie Macgill Secondary School	HDSB
Truant, Kai	True Blue: A Safer Way to kill Bacteria and Viruses with Light	E19	Biotech	Ancaster High	HWDSB
Vargas-Saravanamuttu, Radha Maria	The Patterns that Give Us Life: The Role of Fractal Structure in Lung Function	C01	Phys & Math Sci	Hillfield Strathallan College	IND

## INTERMEDIATE PROJECTS (9/10)

Name	Project Title	Project Number	Division	School	Board
Veljkovic, Filip	SODIS in Canada 2 - Works With Global Warming, too!	L20	Earth & Env Sci	Corpus Christi Secondary School	HCDSB
Wang, Jasmine	Sparks	H02	Eng & Comp Sci	Iroquois Ridge High School	HDSB
Wang, Jiaqi	How does the geometry and texture impact the stability of tires under extreme weather conditions	G06	Phys & Math Sci	Hillfield Strathallan College	IND
Zander, Leah	Blood Droplet Analysis: Investigating Blood Drop Characteristics for Crime Scene Reconstruction	L01	Health Sciences Human	Appleby College	IND
Zhang, Cody	Using Object Segmentation to Analyze Nutrient Content of Meals	H13	Eng & Comp Sci	Abbey Park High School	HDSB
Zhu, Daniel	Using Object Segmentation to Analyze Nutrient Content of Meals	H13	Eng & Comp Sci	Abbey Park High School	HDSB

## Senior Level

### SENIOR PROJECTS (11/12)

Name	Project Title	Project Number	Division	School	Board
Anderson, Maya	Pandemic School Closures: Was it really worth it?	E02	Health Sciences Human	Hillfield Strathallan College	IND
Badawy, Omar	Future Metropolis: Reimagining urban Transportation	K08	Eng & Comp Sci	Abbey Park High School	HDSB
Balakumar, Subakrish	A.L.T.R. 'Altering society, one litter at a time'	P01	Eng & Comp Sci	Aldershot High School	HDSB
Barbera, Katie	Sustainable Solutions: Exploring Enzyme-Infused Bioplastics for Environmental Impact Reduction	M02	Eng & Comp Sci	Cathedral High School	HWCDSD

## SENIOR PROJECTS (11/12)

Name	Project Title	Project Number	Division	School	Board
Blimkie, Kieran	Orebot Mk 1	N16	Eng & Comp Sci	Notre Dame Secondary School	HCDSB
Bountas, Kaitlin	Fight-Or-Flight	D16	Health Sciences Human	Blyth Academy	IND
Bourenane, Yassine	The Effects of Cyanobacteria on Root Growth of Allium Cepa	A03	Life Sciences Non-Human	Ancaster High	HWDSB
Chen, Cici	Hemp: A Healthier Alternative to Disease-causing NPEOs in Modern Textiles	C08	Phys & Math Sci	Oakville Trafalgar High School	HDSB
Elraheb, Joy	Zinc Absorption by Plants: A Phytoremediation Approach	L18	Earth & Env Sci	King's Christian Collegiate	IND
Feng, Aileen	Systematic Review on The Potential of CircRNA as a Novel Biomarker For Pancreatic Cancer Diagnosis	D12	Health Sciences Human	Oakville Trafalgar High School	HDSB
Feng, Melin	Systematic Review on The Potential of CircRNA as a Novel Biomarker For Pancreatic Cancer Diagnosis	D12	Health Sciences Human	Oakville Trafalgar High School	HDSB
Fergani, Sarah	Pandemic School Closures: Was it really worth it?	E02	Health Sciences Human	Hillfield Strathallan College	IND
Frolic-Smart, Artemisia	Effect of a seed's period of dormancy on the length of a radicle formed during germination	M13	Life Sciences Non-Human	Westdale Secondary School	HWDSB
Gendy, Marly	Investigating Potential Cure for Cystic Fibrosis Using Innovative Solutions	B17	Health Sciences Human	King's Christian Collegiate	IND
Hua, Nathan	Ethical Delusion on Morality and its Real World Impacts	B06	Health Sciences Human	Aldershot High School	HDSB
Jackson, Claire	Comparison of proteins in the Homo sapiens and Pan troglodyte's genome	A09	Life Sciences Non-Human	Westdale Secondary School	HWDSB

## SENIOR PROJECTS (11/12)

Name	Project Title	Project Number	Division	School	Board
Jarabana, Srihith	Accurately Forecasting a Dementia Diagnosis Using Protein Biomarkers and Quantum Machine Learning	B13	Health Sciences Human	Abbey Park High School	HDSB
Johnson, Katelyn	The Effects of Sodium Chloride on the Reproduction of Lemna Minor: A Model for Road Salt Run-Off	A08	Earth & Env Sci	Westdale Secondary School	HWDSB
Khan, Mohid	Harnessing the power of Peizelectricity for Sustainable Energy	J11	Eng & Comp Sci	Assumption College School	BHNCDSB
LeBlanc, Maya	Analysis of CD16+, CD16- and CD4+ T Cells to Identify Novel Gene Signatures and Diagnostics for SLE	N03	Health Sciences Human	Abbey Park High School	HDSB
Lepischak, Katherine	Going South	A07	Life Sciences Non-Human	Westdale Secondary School	HWDSB
Makkar, Akshin	Weed-Watch: an Innovative AI-Based Ground Weed Detection System for Agricultural Practices	H12	Eng & Comp Sci	King's Christian Collegiate	IND
Maric, Luca	HHO Generator Efficiency: Optimizing conditions to maximize HHO gas	K05	Eng & Comp Sci	King's Christian Collegiate	IND
Mitchell, Kiera	Modelling Spread and Infection Risk for COVID-19 in Hallway Scenarios	F09	Phys & Math Sci	Delhi District Secondary School	GEDSB
Nagasaki, Kibo	Bye-Bye Haber-Bosch	N10	Phys & Math Sci	Mentor College	IND
Nasr, Zeyad	Modelling the Trajectory of an Airborne Object Using Computer Simulation. Application for Basketball	N14	Eng & Comp Sci	Dundas Valley Secondary School	HWDSB
O'Dell, Oscar	Snake versus Slime: Who can build the better network?	A19	Life Sciences Non-Human	King's Christian Collegiate	IND

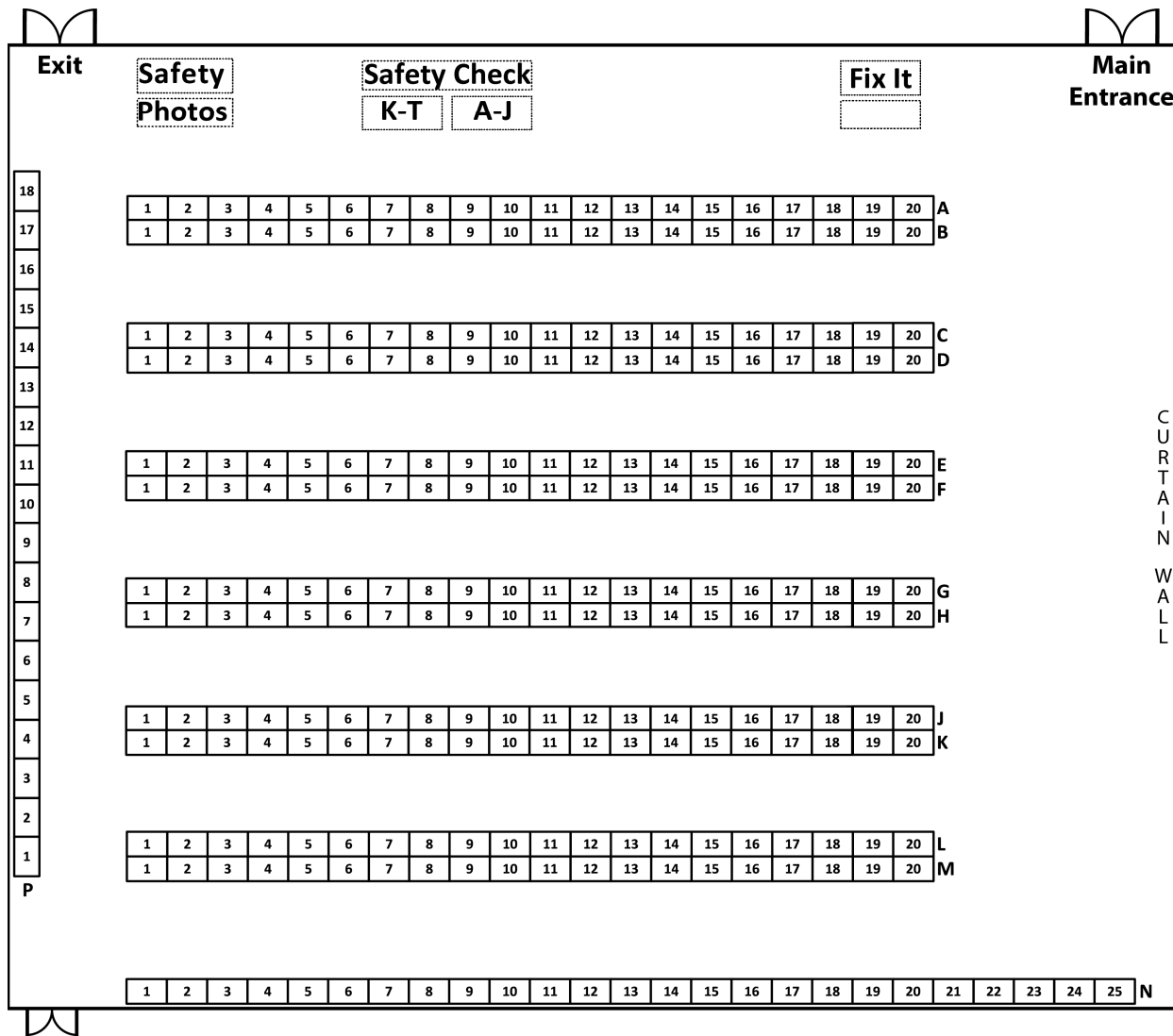
## SENIOR PROJECTS (11/12)

Name	Project Title	Project Number	Division	School	Board
Olejniczak, Jacob	Negative Effects of Energy Drinks and Minimizing Them	C17	Health Sciences Human	King's Christian Collegiate	IND
Ouwendyk, Brodi	Stopping Potentially Hazardous Objects in Space with High-Velocity Spacecraft	F11	Phys & Math Sci	Delhi District Secondary School	GEDSB
Patial, Navraj	Harnessing the power of Peizelectricity for Sustainable Energy	J11	Eng & Comp Sci	Assumption College School	BHNCDSB
Ponnambalam, Kadhira	An Innovative Method to Prevent Food Wastage Using an AI Based Multiple Linear Regression Model	J09	Eng & Comp Sci	Hillfield Strathallan College	IND
Quadry, Zoha Fatima	Using Luciferase to detect toxins that affect oxygen levels in the environment	A16	Biotech	Abbey Park High School	HDSB
Raguz, Mark Anthony	Flying Car Proof of Concept: A Revolution In Future Land and Air Travel	N22	Eng & Comp Sci	Holy Trinity Secondary School	HCDSB
Rajkumar, Sahith	Herbal Heroes: Unveiling the Antibacterial Potential of Ayurvedic Medications Against Staphylococcus	E15	Biotech	Hillfield Strathallan College	IND
Rathod, Anish	Integrating A CNN With An Autonomous Drone To Facilitate Visible Water Pollution Monitoring	P10	Eng & Comp Sci	Burlington Central High School	HDSB
Shaikh, Ali	AI in disaster and management	J04	Eng & Comp Sci	Appleby College	IND
Simmons, Cordelia	Hydroplaning Detection and Prevention Using an AI Neural Network	P17	Eng & Comp Sci	North Park Collegiate and Vocational School	GEDSB
Song, Bohmie	Removing Pollution feat. Bacopa monnieri	M19	Earth & Env Sci	Westdale Secondary School	HWDSB
Song, Lily	Talk to the Hand	P16	Eng & Comp Sci	North Park Collegiate and Vocational School	GEDSB
Sun, Anna	Testing and Comparing The Toxicity of Different Brands of Hair Dye	F01	Phys & Math Sci	King's Christian Collegiate	IND

## SENIOR PROJECTS (11/12)

Name	Project Title	Project Number	Division	School	Board
Suresh, Nitish	Ethical Delusion on Morality and its Real World Impacts	B06	Health Sciences Human	Aldershot High School	HDSB
Szymala, Weronika	The Artificial Pancreas	D15	Biotech	Bishop Ryan Secondary School	HWCDsb
Teng, Carmen	Advancing Astrophysical Insight: Multi-Survey Data Integration for Redshift Accuracy and Large-Scale Redefining the Landscape of Hydrogen Safety using Innovative Gasochromic Technology	G07	Phys & Math Sci	White Oaks Secondary School	HDSB
Wahban, Alia	Plants Vs. Zombies: The Extraction of Fisetin from Different Forms of Strawberries	P03	Eng & Comp Sci	Hillfield Strathallan College	IND
Wang, Season	Accessible microscopy! A cellphone microscope for high-resolution, large FOV, and high-speed imaging	A18	Life Sciences Non-Human	Oakville Trafalgar High School	HDSB
Xu, William	Plant Trait Identification Using Convolutional Neural Networks	P13	Eng & Comp Sci	Dundas Valley Secondary School	HWDSB
Yin, Brian	A Two-Modal Robot for Adaptability in Diverse Environments With Rolling Locomotion and Walking Gait	M15	Eng & Comp Sci	Iroquois Ridge High School	HDSB
Zhang, Shangyi	Hemp: A Healthier Alternative to Disease-causing NPEOs in Modern Textiles	J13	Eng & Comp Sci	White Oaks Secondary School	HDSB
Zhao, Wendy		C08	Phys & Math Sci	Oakville Trafalgar High School	HDSB

# Project Floor Layout





# BASEF 2024 Champion Teacher Award

The Champion Teacher Award recognizes a STEM teacher who displays a remarkable ability to empower and excite student interest in science and actively promotes the Bay Area Science & Engineering Fair. The winner is selected by a panel of BASEF organizing committee members from among those nominated online by their peers, students, and their parents. The Award includes induction into the BASEF Champion Teacher Hall of Fame, a trophy, and \$500 for use in the winning teacher’s classroom.

For the 2024 fair, we would like to recognize a teacher who fosters curiosity, provides support and encouragement, demonstrates enthusiasm towards learning, and provides each of her students with quality research skills in a rich, in-depth learning environment.



**Allison Janssen** – White Oaks Secondary School  
(Halton District School Board)

The nominator writes: *“Mrs. Janssen’s teaching style is very [kinesthetic] and experimental. Especially considering the IB physics program does not require or outline physical labs, her enthusiasm towards conceptual understanding through “physics toys” and thought experiments fosters curiosity in the class. She also provides lots of support and encouragement towards innovative experiments for the Internal Assessment (an IB-required physics report). Outside of the classroom, Mrs. Janssen has helped and encouraged my forays into electromagnetism, eventually culminating in a research project she recommended I submit at BASEF.”*

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# Emergency Procedures

## Hillfield Strathallan College

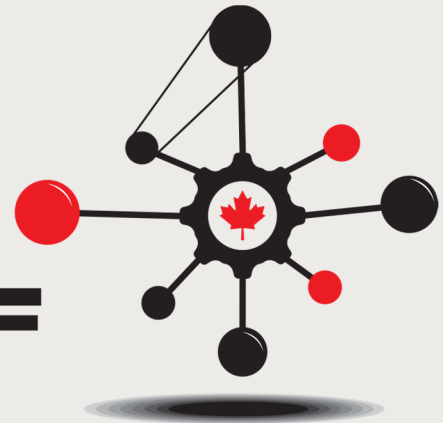
<i>In Case of Emergency:</i>	<ul style="list-style-type: none"> <li>&gt; Dial 911</li> <li>&gt; Dial (905) 961-4977 for the Security Desk</li> <li>&gt; Inform the nearest BASEF volunteer</li> </ul>
<i>Location:</i>	299 Fennell Ave West, Hamilton, ON, L9C 1G3
<i>Responder Directions:</i>	Enter campus off Fennell Ave and follow signs to main entrance. A representative from BASEF will be waiting to direct EMS to the exact location.
<i>Other Key HSC Phone Numbers:</i>	College Main Line: (905) 389-1367

## Mohawk College

<i>In Case of Emergency:</i>	<ul style="list-style-type: none"> <li>&gt; Dial 55 on College phones</li> <li>&gt; Dial 9-911 on College phone or 911 on Bell pay phones</li> <li>&gt; Press the Emergency button on Bell pay phones</li> <li>&gt; Press the button on emergency station intercom</li> <li>&gt; Inform the nearest BASEF volunteer</li> </ul>
<i>Location</i>	135 Fennell Ave West, Hamilton, ON, L9C 0E5
<i>Responder Directions:</i>	Contact College Security (Dial 55) who will handle directing first responders.
<i>Other Key Mohawk College Phone Numbers:</i>	Security Desk: 905-575-2003 OR (905)-575-2316 OR ext. 2003

Emergency Evacuation:	Emergency Lockdown:
<p><u>If you Smell Smoke:</u></p> <ul style="list-style-type: none"> <li>• Call Campus Security immediately.</li> </ul> <p><u>Upon Discovery of Fire (Flames):</u></p> <ul style="list-style-type: none"> <li>• Leave fire area immediately and close doors behind you.</li> <li>• Pull the nearest fire alarm.</li> <li>• Evacuate the building via the nearest exit.</li> <li>• Call Security or the appropriate emergency number.</li> </ul> <p><u>Upon Activation of the Fire Alarm:</u></p> <ul style="list-style-type: none"> <li>• Go to the nearest exit and leave the building.</li> <li>• Close doors behind you.</li> </ul> <p><u>Note:</u></p> <ul style="list-style-type: none"> <li>• Do not use elevators or chair lifts.</li> <li>• Use an alternative exit if you encounter smoke.</li> <li>• 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.</li> <li>• Notify Security and/or the Fire Department of their specific location.</li> <li>• Do not re-enter the building until authorized by the Fire Department, Security, Staff, or Fire Wardens.</li> </ul>	<p><u>Threat Inside the Building:</u></p> <p>Upon hearing the voice message advising lockdown:</p> <ul style="list-style-type: none"> <li>• Exit all common and open areas (including Library and cafeteria): <ul style="list-style-type: none"> <li>○ Disperse... do not congregate in open areas.</li> <li>○ Exit the building or go to a room or area where you feel safe to enter.</li> </ul> </li> <li>• If exit is not possible: <ul style="list-style-type: none"> <li>○ Enter or stay in a room or area where you feel safe.</li> <li>○ Close and secure doors if possible</li> <li>○ Turn out lights.</li> <li>○ Cover windows and/or stay away from windows.</li> <li>○ Silence cell phones/use text messaging only.</li> <li>○ Stay alert, quiet and out of sight.</li> <li>○ Disregard fire alarm signal unless in immediate danger.</li> <li>○ Do not exit until "All Clear" signal is heard.</li> </ul> </li> </ul> <p><u>End of Lockdown:</u></p> <ul style="list-style-type: none"> <li>• 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.</li> </ul> <p><u>Threat Outside the Building:</u></p> <p>Hold and secure:</p> <ul style="list-style-type: none"> <li>• The threat is outside and everyone remains inside the building.</li> <li>• Notification will be communicated by a voice message.</li> </ul>

**BASEF**



**BASEF 2024 wishes the best  
of luck to all participants.  
We hope to see you next  
year for BASEF 2025!**