



Bay Area Science and Engineering Fair

BASEF

2005

**The #1 Regional Science and Engineering Fair
in Canada!**

Fair Dates: March 30th to April 2nd, 2005
Sheridan Institute of Technology & Advanced Learning
Project Registration: February 7th to March 2nd 2005



BASEF was the catalyst....

We are extremely proud of the accomplishments of our students and the opportunities that BASEF provides. BASEF gold medallist Natalie Raso, currently in Grade 10 at St. Thomas More, went on to compete at the national science fair and was awarded an all expense paid trip to China. Here's what she has to say about her incredible experiences.

This year at BASEF, I qualified for the Canada Wide Science Fair in St. John's Newfoundland where I won a gold medal and was further selected to represent Canada at the 3rd Asia Pacific Economic Cooperation Youth Science Festival in Beijing, China from July 30 - August 9, 2004. I have just returned from this adventure of a lifetime, and the experience that I had was amazing. The motto for the festival was "Science, Youth, Future" and over the course of my stay in China I met hundreds of youth from all over the world who perfectly embodied this slogan. I had a wonderful time with my roommates from China

***BASEF 2004 and CWSF 2004
Gold Medallist
Natalie Raso***

***Natalie won an all expense paid trip to
China at CWSF 2004 and is seen here
on the Great Wall of China.***



and Brunei-Darussalam, and others from APEC countries, discussing our cultural diversity and social, political and scientific differences.

Being able to display and present my project to people from all over

the world was extremely exciting. They were very interested in my project. I was asked many unique questions and received many interesting comments. Another very important scientific aspect of this event was a do-it-yourself (DIY) project in which students chose their own topic then wrote an essay and prepared an artistic performance. My group's topic was "Gene Therapy and Transgenic Plants & Animals".

We made a short film on transgenic plants and won 1st prize out of 44 groups. On top of all of this, I visited the Emperor's Summer Palace, the Temple of Heaven, Tiananmen Square, Forbidden City, and the Great Wall of China!

This was a very rewarding experience and would not have been possible without BASEF. BASEF was the catalyst for the once-in-a-lifetime experiences that I have enjoyed this year. I am very grateful for that.

A Beginner's Introduction to BASEF

The fair takes place over a period of four days in late March/early April of every year. On line student registration starts in February and closes approximately 3 weeks before the fair. This allows the fair organizers enough time to ensure that projects meet safety and ethical guidelines and are assigned to the correct division, the registration documents are complete and the Fair Program accurately reflects all exhibitor information.

Fair Schedule:

Project Set Up/Safety Checks: Wednesday- 4:00 pm – 8:00 pm

Judging without students present: Thursday- 8:00 am – noon

Judging with students present: Thursday- 1:00 pm – 4:00 pm

Activity Day: Friday- 8:00 am – 4:00 pm (free of charge)

Public Viewing: Saturday- 10:00 am - noon

Awards Ceremony: Saturday- 1:30-3:30 pm

Project Take Down: Saturday- 3:30 pm

(After the Awards Ceremony only!)

Levels and Divisions

Students compete for **Merit Awards** within 3 separate grade levels and in one of the six project divisions.

Levels (three):

Junior: Grades 7-8

Intermediate: 9-10

Senior: 11-12

Divisions (six):

Biotechnology; Earth &

Environmental Sciences;

Engineering & Computing Sciences;

Health Sciences (Human); Life

Sciences (Non human); Physical &

Mathematical Sciences

(A flow chart on the BASEF web site is designed to help you determine the division of your project.)

Teams:

Students may compete individually or as a two member maximum team.

Team members must be in the same level.

Merit Awards

Merit Awards recognize the tremendous amount of research and effort that has gone into the projects entered at BASEF. All projects are judged by a minimum of four independent judges. Gold, silver and bronze medals, and honourable mention certificates (along with cash awards) are awarded in **each** division of **each** level based on the following scoring:

Gold: over 90% and in top 7.5% of division

Silver: over 80% and in next 10% of division

Bronze: over 75% and next 12.5% of division

Honourable Mention: over 75% and not in the top 30% of division

At BASEF 2004, 6 projects won Gold, 32 Silver and 71 Bronze.

Special Awards

Special Awards are donated by organizations and groups to recognize deserving projects that deal with topics of interest to the donor. At BASEF 2004, over \$14,500 was awarded to 154 deserving students.

Grand Prize Trip Awards

Grand Awards are given to the top projects in the fair, based on merit award scores. The Grand Trip Awards are all expenses paid trips to the national and international science fairs. Chaperones from BASEF accompany our students and students advancing to these prestigious competitions are provided with additional mentoring. All students are eligible to win a place on Team BASEF and go on to compete at the Canada Wide Science Fair (CWSF). We have sent our maximum of twenty students for the past few years. High school students are eligible to win trips to the Intel International Science and Engineering Fair (ISEF), held in the United States. Our maximum number is three projects, consisting of two single projects and one team project.

Grand Prize Awards

Best-in-Fair Pinnacle awards are presented to the top three projects in the fair, based on Merit award scores. Each winner receives an engraved plaque and a trophy for display at their school.

Roy Middleton Award is given to the best Junior level project.

Pfizer Canada Award of Excellence is given to the top project in the fair that is advancing

to CWSF. The winner receives a medal of excellence and a plaque for display at their school.

Herb Gildea Trophy is awarded to the high school accumulating the most points from the number of entries and merit awards won.

BASEF Committee Trophy is awarded to the elementary school accumulating the most points.

Merit Award Judging Criteria

Projects are judged out of a total score of 100, broken down into five sections. The sections are weighted as follows:

Scientific Thought & Creativity: 45%

Project Display: 20%

Abstract: 5%

Notebook: 10%

Interview: 20%

The judging forms and criteria are available on the BASEF website at:

http://basef.ca/2004/judges/#judging_form

Our Gold medallists (scoring over 90%) enter projects that are well designed from inception to completion. The research and experimentation is complete, the work is well documented in their notebooks, and their displays are an attractive summary of their complete project. They are knowledgeable about their work and are able to enthusiastically explain it to judges because they practice their presentations and prepare for the interviews.

Project Resources

The "Science Success!" student and teacher materials are available for download at www.basef.ca and include an extensive reference list.

Consider Projects Related to These Special Awards

Over \$14,500 in Special Awards were awarded to students at BASEF 2004.

Halton Regional Chairman's Award for Student Excellence

Prizes: \$300 and certificates to each of three projects. Criteria: Deserving projects by Halton students, any category, any level.

City of Hamilton Mayor's Awards

Prizes: 1st: \$500, 2nd: \$300, 3rd: \$200. Criteria: Deserving projects by Hamilton students in the Biotechnology category

Acquired Brain Injury Awards**

Prizes: 1st: \$75, 2nd: \$25. Criteria: Two projects relating to the brain, especially acquired brain injuries, their causes or therapies

Ambitious City Toastmaster Leadership and Communications Awards:

Prizes: \$25 to each of two projects. Criteria: Leadership in innovative research and communication clarity.

Artistically Inspired Display Award:

Prize: \$200. Criteria: Most creative display

Bell Canada Computer and Communication Awards:

Prizes: 1st: \$1000, 2nd: \$500. Criteria: Projects regarding communication between people, machines, or between people and machines, any level.

Canadian Finishing Systems Award:

Prize: \$250. Criteria: Best project in Earth and Environmental, any level.

Canadian Institute of Mining & Metallurgy Hamilton Branch Awards:

Prizes: 1st: \$100, 2nd: \$50, 3rd: \$25. Criteria: Projects relating to mining and metallurgy, any level.

Canadian Nuclear Society Awards:

Prizes: Two \$150 each for intermediate or senior levels and two \$ 50 each for junior level
Criteria: Projects relating to nuclear, energy or climate sciences.

Cancer Assistance Program Awards:

Prizes: \$50, \$35, \$30. Criteria: Outstanding projects related to cancer prevention.

Chemical Institute of Canada, Hamilton, Awards:

Prizes: Three \$100 awards. Criteria: Projects related to chemistry, chemical engineering or chemical technology

Dr. Colin J.L. Lock Chemistry Award:

Prize: \$75. Criteria: Project demonstrating the best application of chemistry.

The DaVinci Awards:

Prizes: One \$200 prizes. Criteria: Best demonstration of the use of the scientific method.

Dr. M. Doyle Award:

Prize: A trophy for the winner's school, a plaque and \$100 to the winner. Criteria: Best biology project.

Dofasco Awards:

Prizes: Fifteen \$100 awards. Criteria: deserving projects any level related to engineering, process automation, information technology, innovation and creativity, by products utilization, market development, research development.

Eastman Kodak Photography Award:

Prize: Camera. Criteria: Project best demonstrating the use of photographic or digital imaging to gather data, solve a problem or explain the essence of a science project.

Electrical Construction Association of Hamilton Award:

Prize: \$150. Criteria: Project creatively displaying the best, safest use of electricity.

Hamilton Amateur Astronomers Award:

Prize: Book and one year membership.
Criteria: Project demonstrating understanding of an astronomy topic

Hamilton Utilities Corporation/Community Energy Award:

Prize: \$300. Criteria: Project that best demonstrates "green source" electricity production or efficient electrical energy use.

Hamilton-Wentworth Occasional Teachers:

Prizes: Three prizes of \$50. Criteria: Junior projects related to healthy lifestyles, environmental education and best project display/presentation.

IEEE Hamilton Section Award:

Prize: \$100. Criteria: Best use of electronics.

Intel Excellence Awards:

Prizes: \$200 US to each of two projects.
Criteria: Top computer science project and top Environmental Science project, intermediate or senior level only.

Prizes: Certificates. Criteria: Intermediate and senior projects in materials science, meteorology, geoscience, optical science, corrosion, engineering, physics or chemistry.

Investigative Science Award:

Prize: \$100. Criteria: Project best demonstrating problem solving, any level.

Keep Hamilton Clean Award:

Prize: \$100. Criteria: Deserving project related to waste reduction/recycling

McMaster Chemistry Award:

Prize: \$100. Criteria: Outstanding intermediate or senior chemistry project.

McMaster Engineering Society Award:

Prize: \$250. Criteria: Best junior engineering project.

McMaster Nuclear Reactor Award:

Prize: \$250. Criteria: Deserving project related to radiation sciences.

McMaster Science & Engineering Tuition Awards:

Prizes: Five \$500 tuition awards on admission to Faculty of Science or Engineering. Criteria: Excellent science or engineering projects.

Mechanical Contractors Association of Hamilton Award:

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

Mohawk College Awards:

Prizes: Thirteen cash awards of \$50 to \$100. Criteria: civil engineering, transportation, building sciences, chemical and environmental engineering, computer application, industrial engineering, hydraulics, pneumatics, metal casting, mathematics, mechanical and industrial engineering.

National Science & Engineering Research Council (NSERC) Awards:

Prizes: \$200 to each of two projects. Criteria: Projects demonstrating innovative and creative research.

Nelson Steel Awards:

Prizes: Three \$50 awards. Criteria: Projects related to steel, environment or chemistry.

Nicola Simmons Award in Cognition Studies:

Prize: \$75. Criteria: Exemplary project in cognition.

Ontario Association of Medical Laboratories:

Prize: \$170. Criteria: Best medical laboratory science project.

Primary Fluid Systems Awards: **

Prizes: 18 cash prizes from \$50 - \$250.

Criteria: Top projects in engineering, earth and environmental and physical sciences.

Professional Engineers of Ontario (Hamilton Chapter) Awards:

Prizes: 1st: \$150, 2nd: \$125, 3rd: \$75. Criteria: Top projects using the application of engineering skills, any level.

Procor Awards:

Prizes: Junior: \$50, Intermediate: \$100, Senior: \$150. Criteria: Excellent engineering projects.

Ramanujan Mathematics Awards:**

Prizes: \$100 each for up to three projects.
Criteria: Projects demonstrating a strong mathematics base.

Royal Botanical Gardens Award:

Prize: \$100 gift certificate for the RBG shop and a one year family membership to RBG.
Criteria: Best project in botanical or environmental sciences.

Safety Management Systems Software Award:

Prize: \$100 and a plaque. Criteria: Project that incorporates the innovative integration of programming code to analyze data or operate a piece of equipment.

Science Teachers Assoc. of Ontario Awards:

Prizes: \$75 to each of two projects. Criteria: Projects best demonstrating the use of the scientific method, junior level.

Tinnerman Palnut Canada Corporation Award:

Prize: \$250. Criteria: Best engineering project.

Zonta Club of Hamilton:

Prizes: \$300 will be shared by a limited number of projects. Criteria: Outstanding projects by females, any category, any level.

All of these awards are made possible by our Special Award donors. If you know a company, foundation or individual who might be interested in encouraging our students by donating a special award, please contact us at basef.fundraising@basef.ca.

Awards confirmed for 2004 are indicated by **

Teachers

BASEF 2005 registration is scheduled to close at noon on Wednesday, March 2nd, 2005.

To avoid disappointment, register early. *Each elementary school may register a maximum of eight projects in the Junior Level and secondary schools, a maximum of eight projects in each of the Intermediate and Senior levels.* Only the first eight projects per school, per level will be registered.

Students start your projects now!!

Our successful BASEF alumni recommend that you get an early start on your project. This will provide you with enough time to complete the hands on work, thoroughly document your research, carefully prepare your display and practice for judging interviews. If your school has an in school science fair, you may only enter BASEF through your school.

If your school does not have a science fair, you may enter directly by completing the online registration. See you at the fair!

Online registration requires project information including an abstract that states the purpose, procedures and results.

This means that most of your research must be completed by registration.

SPONSORSHIP

In 2004, BASEF sent our maximum number of 20 students to St. John's, Newfoundland to compete in the Canada Wide Science Fair (CWSF) and our maximum number of 4 students to Portland, Oregon to compete at the Intel International Science & Engineering Fair (IISEF) as the result of the generosity and commitment of our sponsors. The host sites for 2005 are Vancouver, British Columbia for CWSF and Phoenix, Arizona for IISEF.

Our ability to make these tremendous opportunities available to our science and technology students can only be done through the generosity of sponsors.

To stage a first class fair, which our students so richly deserve, and to send the maximum students again, **WE NEED YOUR SUPPORT.** Do you know a company, foundation or individual who might be interested in supporting our bright young minds in science and technology?

If so please contact us at basef.fundraising@basef.ca.

BASEF also has a wide variety of in-kind service needs such as printing, meals, graphic design or office supplies (to name a few). There are many ways to help. Please contact us with your ideas or suggestions.

Cash donations are especially welcome, and tax receipts will be issued.

Who wants to go to the Internationals?



**Intel International Science and Engineering Fair
Phoenix, Arizona
May 8th -14th, 2005**

We will be looking for up to 4 talented students in grades 9 – 12 to represent BASEF in Phoenix, Arizona in May 2005. All high school BASEF entrants are eligible and the BASEF Intel International Science and Engineering team will consist of two outstanding individual project finalists and one exceptional team project.

Categories include: Behavioral & Social Sciences, Biochemistry, Botany, Chemistry, Computer Science, Earth & Space Science, Engineering, Environmental Sciences, Gerontology, Mathematics, Medicine & Health, Microbiology, Physics, and Zoology.

More than 600 individual student and team awards are presented. Cash awards are \$3000, \$1,500, \$1,000 and \$500 US in each of the 14 categories. In addition, the Intel Best of Category award of an additional \$5,000 scholarship and an Intel architecture-based mobile computer goes to the top-scoring student in each category. The top three finalists selected by Intel judges each receive a \$50,000 college scholarship and an Intel architecture-based mobile computer. Additional student awards worth more than \$1.5 million U.S include: scholarships, summer internships, scientific field trips and laboratory equipment. So, start working on your project ideas now! Be sure to check the BASEF website to complete the appropriate application and approval forms. Some paperwork needs to be completed before or near the beginning of your research. **Visit the Science Service Intel IISEF website at: www.sciserv.org/iisef/primer/index.asp**

Interesting IISEF Facts

- ◆ **Prizes can total up to \$5 million CAD**
- ◆ **Over 1200 students expected to participate in IISEF 2005**
- ◆ **IISEF is the world's only international science project competition for high school students**

BAY AREA SCIENCE AND ENGINEERING FAIR 2005

REGISTRATION MADE EASY!

FUN TO PARTICIPATE and REGISTRATION is FREE!!

The Bay Area Science And Engineering Fair 2005 is an experience that lasts a lifetime. This year BASEF 2005 will be held at Sheridan College in Oakville March 30th to April 2nd, 2005.

The 2005 Fair is open to students registered in grades 7 to 12 in schools within the regions of Hamilton, Halton, Brant, Haldimand and Norfolk including independent or private schools, as well as home schools. If your school conducts a science fair, you may only advance to BASEF through your school's fair. If your school does not conduct a science fair, you may enter into BASEF directly. We do require however that you still enter as a representative of your school and school board. All registrations from any source are subject to the "maximum number of projects" limits.

EASY TO ENTER

The BASEF attracts nearly 500 participants annually and is affiliated with the Canada Wide Science Fair (CWSF) and the Intel International Science and Engineering Fair (IISEF) Twenty two of the top projects from last year's BASEF were sent to compete at these events.

All students in grade 7 to 12 who live in Hamilton, Halton, Brant, Haldimand and Norfolk are invited to show off their great ideas and creative ingenuity by registering.

Registration application forms for the BASEF 2005 will be available on-line at <http://basef.ca> starting Monday February 7th, 2005. Go to the Registration Instruction page, which has links to all necessary forms and information. **Please read the instructions through before you begin.**

You will be required to give all details about your project. Be sure to check the Rules and Safety and Ethical Guidelines on the website to be certain that your project meets all requirements. You will also be asked to give other information on things like any food allergies you might have and whether you are planning to attend ACTIVITY DAY on Friday, April 1st. See the article in this newsletter for information about ACTIVITY DAY.

More details about registration will appear at <http://basef.ca>, so please check out our website for upcoming announcements.

DATES TO REMEMBER

- A. **On-line Registration**
Monday February 7, 2005 to Wednesday, March 2, 2005
- B. **Registration Deadline**
Noon Wednesday, March 2, 2005
- C. **BASEF 2005**
Sheridan College – March 30 – April 2, 2005

New and Improved!

Activity Day: Friday, April 1st

Activity Day was established as a reward for our hardworking, budding scientists and engineers. Students have the opportunity to relax after the stresses of judging day, meet other students interested in science and technology and take part in some fun and educational events.



The format of Activity Day has changed to better accommodate the growing number of participants. This year we will be offering one event for all students.

We have selected the Cinesphere IMAX education series at Ontario Place for Activity Day 2005. In addition to the big screen learning experience that Cinesphere provides, students will participate in a spectacular interactive science show, presented by Mad Science.

Activity Day is free and includes transportation and all admission and program fees. Funding permitting, we will also provide lunch. Sign up early! Attendance may be limited. Registration begins February 7, 2005.

BASEF is currently looking into busing arrangements to transport Hamilton students to both Judging and Activity Day in Oakville.
Further details will be available during registration.

Volunteers Needed!

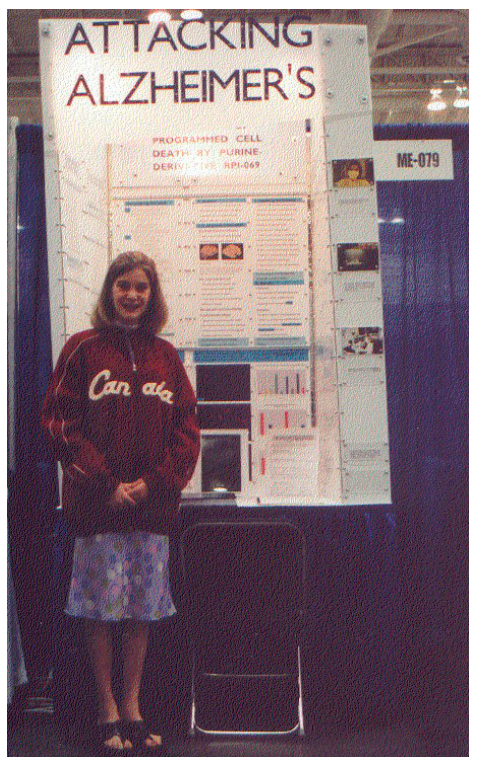
Volunteers make BASEF possible. We are in urgent need of chaperones for Activity Day. Please register on the BASEF website or via phone: 905-974-7975 in Hamilton or 905-693-7076 in Halton.

BASEF Alumni

BASEF 2002, Best in Fair winner Eva Vertes, went on to win numerous awards at the 2002 Intel International Science and Engineering Fair in Cleveland, Ohio. At 17 years of age and in grade 11, Eva won Best in Category for Medicine and Health, making her the #1 student in the world. Eva continued to excel and was profiled in the September 9th, 2002 issue of Maclean's magazine as one of "25 young Canadians who are already changing our world". Eva was offered a number of scholarships and chose to attend Princeton.

Eva's father recently provided us with this update on her accomplishments.

"She's continuing the BASEF project work in a lab at Princeton (where she's in second year), but she's also busy setting up a lab at the University of Miami for cancer research that's due to start in May 05. She spent last summer at Stanford in stem cell research, and just keeps piling on the knowledge . . . Besides which she's tutoring pediatric cancer patients, shadowing physicians on hospital rounds, organizing a bioethics and genetics conference, and she just got official Princeton funding for a university improv comedy troupe that she started a couple of months ago".



*Eva Vertes at the 2002 ISEF
Cleveland, Ohio*

"In short, she's on a path that BASEF was absolutely instrumental in making as exciting and promising as it seems to be".

***If you are an alumni of the fair and interested in sharing your experiences, and perhaps some pictures and other mementos, please contact Sandy Walker, via:
email at basef@basef.ca
or
voice mail at one of the telephone numbers listed below.***

Calling all alumni of BASEF and the Hamilton District Science and Engineering Fair.....

We are in the process of creating a retrospective display of 45 years of science fair in our community and would very much like to hear how science fair participation influenced your career choices and perhaps see your collection of fair memorabilia.

One of our alumni, Nicola Simmons, participated at the 15th annual fair in 1975 and won a trip to the Canada Wide Science Fair. She has generously lent us some fair programs from the 15th, 17th and 18th annual fairs and they make for very interesting reading. Nicola is also the talented author of our "Science Success!" publications.

The Hamilton District Science and Engineering Fair was established in 1960 as:

"A community project under the trusteeship of The Spectator, McMaster University and Mohawk College"

The fair was staged at McMaster University every year until 1975, when it was held at Mohawk College for the first time. The fair was open to high school students only until 1975. At this time, students from Grades 7-8 were welcomed in the new Junior Level.

BASEF Contact Information



Paper Mail:
BASEF
c/o McMaster University
JHE A214
1280 Main Street West,
Hamilton Ontario L8S 4K1

Voice Mail:
Hamilton:
905-974-7975
Oakville:
905-693-7076

Electronic Mail:
basef@basef.ca

Visit our website basef.ca for the most current information and project resources.