



Bay Area Science and Engineering Fair

Newsletter December 2005



BASEF 46th Annual Fair
March 29 - April 1, 2006
Mohawk College

Calling all students in grades 7 through 12 who live in Hamilton, Halton, Brant, Haldimand or Norfolk! It's time to start your projects and prepare to register for the 2006 Bay Area Science and Engineering Fair. Online project registration is tentatively scheduled from February 6 - March 1, 2006.

**Big ideas.
Infinite possibilities.**

For many students, the most difficult part of a science fair project is coming up with a topic or question that interests them.

Online assistance is available at one of the best science fair resource sites we've found:

www.sciencebuddies.org

The **"Topic Selection Wizard"** is a tool that will help students focus on an area of science that's best for them. Students will be spending a lot of time on their projects and it is ultimately far more enjoyable and rewarding to be working on an area of science that interests them. More than 200,000 students used the Topic Selection Wizard in 2004 to help them find a project idea.

This site offers a wealth of information on how to do a science project. If you already know the area of science you want to focus on, look at science project ideas and background information in the section:

Project Ideas & Info by Area of Science and Cutting Edge Science Projects

Science Success! student and teacher resource materials are available for download at: basef.ca
We are also offering workshops to assist you.

The Bay Area Science and Engineering Fair (BASEF)

presents free Science Success! Workshops on:

How to start and complete a science fair project

Wednesday, January 18, 2006, 6:30 pm - 8:30 pm
M.M. Robinson High School
2425 Upper Middle Road, Burlington, Ontario, L7P 3N9

or

Wednesday, January 25, 2006, 6:30 pm - 8:30 pm
Burlington Central High School
1433 Baldwin Street, Burlington, Ontario, L7S 1K4

The workshops are suitable for students, parents, adult mentors and teachers interested in learning how to use the **free** Science Success! resource materials to start and complete a science fair project. The financial and academic benefits of science fair participation will be addressed.



Get in touch with the scientist in you.

Workshop registration is free but spaces may be limited.

Visit www.basef.ca to register for a workshop.

Over \$212,000 in cash, awards, prizes and scholarships were shared by 375 students in science and technology at BASEF 2005.

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 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, 9:30 am - noon

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

**Project Take Down: Saturday, 3:30 pm
(After 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: Grades 9-10

Senior: Grades 11-12

Divisions (six):

Biotechnology,

Earth and 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. 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 in next 12.5%

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

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 2005, over \$24,000 in cash and scholarships were awarded.

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 provide additional mentoring to these students and accompany them on the trips. All students are eligible to win a place on Team BASEF and go on to compete at the Canada Wide Science Fair (CWSF). Only high school students are eligible to win trips to the Intel International Science and Engineering Fair (IISEF), held in the United States.

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.

Pfizer Canada Award of

Excellence is given to the top project in the fair that is advancing to CWSF.

Roy Middleton award is given to the top Junior level project.

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: 10%
Project Notebook: 20%
Abstract: 5%
Interview: 20%

The judging forms and criteria are available on the BASEF website in the Judges section.

Our Gold medalists (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 the judges because they practice their presentations and prepare for the interviews.

Project Resources

The free Science Success! student and teacher materials are available for download at www.basef.ca

Teachers

BASEF 2006 registration is scheduled to close at noon on Wednesday, March 1, 2006.

To avoid disappointment, make plans to register early.

In fairness to all of our participants, no exceptions will be made to the registration deadline.

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.

Parents

For many students, BASEF is the first time they are rewarded for their academic endeavours. Students gain considerable academic and life skills by researching, experimenting, displaying and presenting their projects. Make no mistake, all student participants are rewarded with an enriching experience and a certificate of participation, not to mention the “goodie” bags. Participation rewards at BASEF 2005 included over \$200 in gifts donated by our generous sponsors and we are anticipating a similar reward at BASEF 2006.

Many students and parents view science fair projects as a dreaded, compulsory school assignment and have no idea of the available rewards for successful science fair participants. **BASEF 2005 awarded over \$212,000 in cash, prizes and scholarships.**

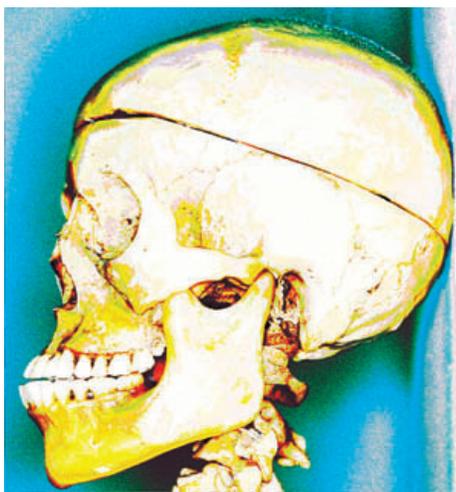
Visit the Parent section on our web site for helpful hints on supporting student science fair participation and “Project Basics for the Bewildered Parent...Help, I’m not a Scientist.”

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 and 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 a project summary that states the purpose, procedures and results. This means that most of your research must be completed by registration.

Please read the information regarding Scientific Review rules and regulations on the next page, BEFORE you start your project!



CSI...BASEF 2006?

Big ideas. Infinite possibilities.

Project Abstract for Judging

Project judging at BASEF includes 5 marks for a project abstract. By comparison, the display is worth 10 marks. Judges usually read the abstract first to get an idea of what the project is about. We suggest that you provide a readily visible, one page abstract, preferably in a sheet protector. The abstract should include the following:

Purpose of the Project

- An introductory statement of the reason for investigating the topic of the project.
- A statement of the problem or hypothesis being studied.

Procedures Used

- A summarization of the key points and an overview of how the investigation was conducted.
- An abstract does not give details about the materials used unless it greatly influenced the procedure or had to be developed to do the investigation.
- An abstract should only include procedures done by the student. Work done by a mentor (such as surgical procedures) or work done prior to student involvement must not be included.

Observation/Data/Results

- This section should provide key results that lead directly to the conclusions you have drawn.
- It should not give too many details about the results nor include tables or graphs.

Conclusions

- Conclusions from the investigation should be described briefly.
- The summary paragraph should reflect on the process and possibly state some applications and extensions of the investigation. An abstract does not include a bibliography or acknowledgements.

Scientific-Review Documents

What they are and why you need them

For many years now, BASEF, like all Regional Science Fairs in North America, has required some Scientific-Review (SR) documents as part of Registering a Project for the Science Fair. This always seems like an unneeded and complex requirement to those who are participating for the first time, but it is important to do, and to do correctly. We encourage everyone, students AND their parents and teachers, to read the BASEF Rules online carefully (see <http://basef.ca/2006/students/?page=rules>), and ensure that any and all needed Scientific-Review documents are completed, and included with your Project Registration.

We may not be able to accept your project into the fair without properly completed SR documents.

Project Safety Comes First — AND YOU MUST PROVE IT.

Scientific-Review documents are the paperwork that BASEF uses to decide whether or not your project has been done safely and in accordance to various rules and regulations that govern experimentation. We have a responsibility to ensure all the rules are followed, by everyone, so we must ask you to provide enough information ahead of time to satisfy us that this is true. The accuracy of filling out these documents can mean the difference between entry and rejection in a science fair. These documents are a method of ensuring that you as the experimenter, any other participants in your experiments, and the judges, volunteers and members of the public who view your experiments, are kept safe, and that you have complied with any Laws, Regulations and Rules that apply.

Before starting experimentation is the time to look through the Scientific-Review documents. The nature of your experiment will show which Scientific-Review documents that you need to fill out. The important thing is to read the documents and find the persons who **must** sign the documents. By finding these people, you will by default get the right person you need to assist you in your experimentation. For example, if you are planning to use chemicals which are considered dangerous and fall in the category of a designated substance, you will have to find a designated substance supervisor to supervise your use of these chemicals. For that person to sign the paper, they are required to **understand the risks**, approve and supervise the use of that chemical.

No Scientific-Review Documents Might Mean Project Rejection:

One of the biggest shortfalls we find in the submission of Scientific-Review documents are they are not submitted. We encourage all participants go to the BASEF site prior to experimentation and look up the required Scientific-Review documents, read the Rules and instructions carefully, and fill out the needed portions. Also if it is not clear you can contact BASEF through the web site to get clarifications.

Do the Paperwork BEFORE the Project!

Scientific-Review documents, dates and signatures are an important first step in experimentation.

These documents are in the system to keep you, the fair participant and everyone else involved in your project in any way, safe in the same way as lab scientists are kept safe in the process of experimentation. Do the paperwork, enjoy the experimenting and good luck on your science fair entries this year.

Dates are critical. Some Scientific-Review documents are required to be signed and dated prior to experimentation.

When filling out forms it is really important to read the required signing time.

It is important to have the right dates.

If you are experimenting now, there are some documents that already should be in your possession, signed and dated prior to experimentation.



Kayla Cornale "Meets the Press" at ISEF 2005, Phoenix, Arizona

Get in touch with the scientist in you.

Make plans to participate in BASEF 2006 TODAY!

Consider Projects Related to These Special Awards. Over \$24,000 awarded at BASEF 2005.

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: \$150, 2nd: \$100. 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.

Gowlings Innovation Award:

Prize: \$250. Criteria: Project that exploits multiple areas of intellectual property protection, namely trademarks, patents, industrial design.

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 application of analytical chemistry, 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.

Mechanical & Industrial Engineering Awards:

Prize: \$100. Criteria: Outstanding project related to mechanical or industrial engineering.

Microsoft Canada - Sheridan College Award:

Prize: \$2000 plus \$2000 scholarship. For the best proposal describing a new piece of software or technology that uses software intended for use by a charity.

Mohawk College Awards:

Prizes: Eight 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:

Prizes: \$100 to each of two projects. 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.

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.

University of Ottawa Scholarship:

Prize: \$1000 entrance scholarship. Criteria: To the top Senior Project in Science or Health Science.

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.

Big ideas. Infinite possibilities.

Activity Day Friday, March 31, 2006

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 Canada Marine Discovery Centre visit will include interactive exhibits and entertaining activities. Activity Day is free and includes transportation and all admission and program fees. Students will be required to provide their own lunch.

*Sign up when you register for the fair! Attendance may be limited.
Registration begins February 6, 2006.*

Canada Marine Discovery Centre



Sponsorship

In 2005, BASEF sent our then maximum number of 20 students to compete in the Canada Wide Science Fair (CWSF) and our maximum of 4 students to Phoenix, Arizona to compete at the Intel International Science and Engineering Fair (IISEF). This was a direct reflection on the generosity and commitment of our sponsors. The host sites for 2006 are Saquenay, Quebec for CWSF and Indianapolis, Indiana for IISEF.

To continue staging the best regional fair in Canada, we need your support. If you know a company, foundation or individual interested in sponsoring our students, please contact us at:
basef.fundraising@basef.ca

Volunteers Needed

Volunteers make BASEF possible. We are in urgent need of chaperones for Activity Day and other volunteer positions. Please register on the BASEF website or contact us via voice mail at the telephone numbers at the bottom of this page.



CWSF 2005, Vancouver, B.C.

BASEF 2006 Dates to Remember

- **Online Registration**
Monday, February 6, 2006 - Wednesday, March 1, 2006
- **Registration Deadline**
Noon, Wednesday, March 1, 2006 (NO exceptions)
- **BASEF 2006**
Mohawk College, Fennel Campus, March 29 - April 1, 2006

Get in touch with the scientist in you. BASEF Contact Information

Paper Mail:

BASEF
c/o McMaster University
JHE A214, 1280 Main St. West,
Hamilton, Ontario, L8S 4K1

Voice Mail

Hamilton & Area:
905- 974-7975
Oakville:
905-693-7076

Email:

basef@basef.ca



BASEF

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

BASEF is proud to be affiliated with



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