



Announcing
"The Scientific Journey: Pathways to Discovery"
2009-10 Essay Awards Program
Grades 9-12

An opportunity for science teachers to enhance their curriculum format, while developing students' literacy, both written and scientific,

and...

an opportunity for students to hone their research, analysis, and writing skills, with a chance to win some great prizes!

Dear Science Teacher,

We are pleased to announce the **2009-10 Secondary School Essay Contest**. The theme of the contest is **"The Scientific Journey: Pathways to Discovery."** *Essay Topics will be accepted on health and natural sciences; technology, engineering and mathematics.*

Essays, must be typewritten and limited to 1000 words in length, (a menu of suggested topics follows). Entries may be submitted by individual students, or by teams of up to five (5) students. Prize money for winning teams will be divided among its participants. Electronic entry submission forms are available at www.pirweb.org.

Essays will be adjudicated based on the **"KICA"** concept in the Ontario Curriculum Policy Documents, as follows: Knowledge (25%), Inquiry (25%), Communication (25%), and Application (25%). Deadline for submission is **April 30, 2010**.

We will be awarding **four (4) \$250 cash prizes** to winning students in each grade level (grades 9-12). A certificate of merit will be awarded for the top essays from each grade level.

In addition, students from each grade winning category will receive complimentary tickets to **"The Toronto Evening 2010" (date and place to be advised)** – a festive banquet and fundraising gala to be held in October 2010. At this event, the students will be publicly recognized and presented with their prizes.

The grand prize (overall) winner will be honoured with the **June Callwood Essay Award** (an engraved plaque, plus a cash prize of **\$250**) and the opportunity to be a **"Scientist for a Day."** This student will spend the day visiting research laboratories, touring the University of Toronto Anatomy museum, and having lunch with a Canadian scientist at the University of Toronto faculty club.

A **roving honour board** will also be presented to the school of the grand prize winner, where it will reside until the following year's essay competition.

For more information about essay contest entries, please contact Partners In Research at: info@pirweb.org.

About the Sponsors

Partners In Research (PIR) is a registered Canadian charity, established in 1988. Our expanded mandate is to facilitate educational content in health and natural sciences, technology, engineering and mathematics. PIR's historic emphasis on health research addresses the goals of finding controls and cures for disease, the history and value of past research, and the potential of today's health research. PIR's product is knowledge, and our primary focus is in Canadian schools, where we provide a range of free educational materials through print, video and digital formats. PIR's most recent educational offering is the VROC ("Virtual Researcher on Call") program, which links students grades 5-12 in real time with Canadian researchers, using advanced videoconferencing technology. See www.vroc.ca for details.

We sincerely hope that your students and staff will have an interest in being part of this academic adventure!

A handwritten signature in black ink, appearing to read 'Godfrey Chang', is centered on the page.

Godfrey Chang
University of Toronto
Co-Chair, PIR Essay Contest – GTA

THE SCIENTIFIC JOURNEY: PATHWAYS TO DISCOVERY

OFFICIAL RULES FOR THE ESSAY AWARDS PROGRAM

Essay submissions that comply with all official rules as set out in this document will be judged by a panel of external experts recruited by Partners In Research.

Preference will be given to students who use a **wide variety of source materials**, including printed texts. We encourage students NOT to rely solely on web-based sources.

1. All entries must be received (mail or electronic) by deadline date.
2. Each essay must be accompanied by an individual entry form.
3. All essays must be titled.
4. Essays should be engaging and comprehensible to the Lay reader.
5. Essays must contain a minimum of 700 words and no more than 1,000 words.
6. Manuscripts must be typed, double-spaced, on one side of 8½ x 11-inch white paper. Margins should be at least one inch wide on all sides of the paper.
7. All essays must be free of plagiarism, as defined below.
8. Each essay must include a bibliography at the end of the essay.
9. Two copies of each essay must be submitted.
10. All entry forms must be filled out completely. Note that all information should be typed or printed, **except for two items**: your signature and that of your teacher, under the statements confirming originality.
11. Do not include the name of the school or the name of the person(s) submitting the essay on the essay submission itself. This information should appear **only on the entry form**.
12. On the entry form accompanying the submission, students should indicate their home address, identify their school, its street and e-mail address, telephone number and appropriate contact person (e.g., science teacher, advisor and/or principal). Please refer to Item 9 above.
13. Essay submissions should be sent in a single envelope or packaged together with all other class entries being submitted by your teacher.
14. All entries become the property of Partners In Research and will not be returned. A list of essay contest winners will appear on the Partners In Research website, www.pirweb.org.

Item 5 - Plagiarism: *ALL sources used must be cited in the text of the essay. Do not use footnotes or endnote; APA format is required for all citations and references. ALL word-for-word information written by someone else must have quotations showing the quoted material, and the source must be cited.*

Examples of sources include (but are not limited to): [1] Internet sites, [2] Encyclopaedias (electronic or hardbound) [3] books, and [4] magazines. ALL summaries from other sources must be in the student's own words.

THE SCIENTIFIC JOURNEY: PATHWAYS TO DISCOVERY

Sample Essay Topics – Specific

- Path taken for the cure or treatment of a named medical affliction (your choice)
- Should biotech/pharmaceutical companies be allowed to patent genes?
- What are your views on genetic testing?
- Should the Canadian government allot more money for health research?
- At what point should drug trials move from animal studies to human studies?
- Discuss the pros and cons of learning activities involving dissection of animals in secondary school biology.
- Discuss long term effects of children's health on the family and community.
- How has research helped our understanding of the effects of good nutrition or lifestyle choices on our health?
- Discuss the ethical implications of using residual human tissues for the application of reproductive technologies to health research and/or therapies.
- What are the barriers to xenotransplantation? How can we best solve the problem of donor organ shortage in Canada?
- What is robotic surgery (CSTAR), and what may be its impact on Canadian medicine?
- How has historical animal-based research impacted on scientific discovery?
- Should all stocks of smallpox and other harmful pathogens be eradicated from the earth to prevent biological warfare, or should they be used to study pathogenesis?
- How has the process of cloning affected medical research, and how could cloning technologies benefit medical therapies?
- Explain some of the latest innovations in scientific research (e.g. RNA interference, proteomics, and nano-technology) and give examples of how they will facilitate medical discovery, disease diagnosis and therapy.
- Discuss the risks and benefits of the use of cough and cold remedies by both adults and children.
- How has health research changed the world of athletics?

Refer to page #5 for additional Topic/Theme considerations.

THE SCIENTIFIC JOURNEY: PATHWAYS TO DISCOVERY

Suggested Sample Essay Topics – General

Adolescent nutrition and lifestyle
Anaesthesia
Age related vision loss
Autoimmunity
Biochemistry
Bioinformatics
Biology
Biomaterials
Brain Mapping
Cancer - quality of life effects
Cardiovascular MRI
Climate change
Chemistry
Cognitive development / knowledge
Cryogenics
Diabetes
Diagnostic imaging (CT, MRI, nuclear imaging)
Diversity of living things
Earth and space science
Evolution
Exercise science
Fuel cells
Fatigue and Illness
Genetic analysis techniques
Genetics
Genetics: biotechnology
Global warming
Health effects of air pollution
Hereditary diseases
HIV/AIDS
HIV/AIDS research in Canada
Homeostasis
Taking on infectious disease
Immunology
Light and Optics
Lipid biochemistry
Bonding

Medical physics
Metabolic processes
Microbiology
Molecular biology, genetics
Molecular virology, biotechnology
Motor control and learning
Neurobiology
Nanotechnology
Neuroimaging
Neurology
Neuroscience
Nuclear power generation
Oncology
Origin of life
Ovarian cancer
Parkinson's
Pharmacology, toxicology
Physical activity and Health
Physiology of motion sickness
Physics
Plants (anatomy, growth and function)
Plate tectonics
Population dynamics
Radiation therapy for cancer
Reproductive biology
Re-educating the immune system
Robotics in medicine
Spinal cord
Spinal cord injuries
Stem cell research – ethics
Stroke: brain attacks
The aging brain
Surgery (robotic, endoscopic)
Transplantation
Veterinary medicine
Virology
Wildlife ecology

.... or any other topic of your choice as it relates to Health & Natural Science, Technology, Engineering and Mathematics.

PIR ESSAY AWARDS PROGRAM 2009-10: ENTRY FORM

Secondary school entries are due in, at Partners In Research's office no later than **April 30, 2010**.

Please print all information except for two items: your signature and your teacher's signature verifying that there is no evidence of plagiarism in your submission.

Name: **Grade:** **Age:**

Home Phone: **E-mail:**

Address:

City: **Ontario** **Postal Code:**

Name of Teacher:

Name of Principal:

Name of School:

Address of School:

.....

City: **Ontario** **Postal Code:**

School Phone: **School E-Mail:**

Title of Essay:

Approximate number of words: **Semester #:**

I hereby certify that this submission is my own creative work and not plagiarized (see official rules). I have read and fully understand all the essay rules.

Signature of Student(s):

Date:

.....

I am familiar with this student's writing. I have read this entry. I am satisfied that it is his or her own work, not plagiarized (see official rules), and represents his or her best efforts.

(Note: Guidance, constructive criticism, and grammar direction of a general nature provided by a teacher during classroom hours are acceptable under the contest rules.)

Signature of Teacher:

Date:

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(a) Mail entry form and 2 copies of the essay to: The Scientific Journey Essay Contest
Partners In Research
Box 37100, Centre Pt. Postal Outlet
Toronto, ON M2M 4J0

(b) E-mail to mitzi@pirweb.org