

Announcing  
**"The Scientific Journey: Pathways to Discovery"**  
**2009-10 Essay Contest**

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](http://www.pirweb.org).

Essays will be adjudicated based on the **"KICA"** concept in the Ontario Curriculum Policy Documents, as follows: Knowledge (45%), Inquiry (20%), Communication (20%), and Application (15%). Deadlines for submission is March 5, 2010.

We will be awarding a series of **cash prizes** to winning students in each grade level (grades 9-12). These prizes will consist of **Gold (\$150)**, **Silver (\$100)**, and **Bronze (\$50)**. 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 London Evening 2010"** – a festive banquet and fundraising gala to be held on Sunday April 11, 2010 at the Lamplighter Inn. At this event, the students will be publicly recognized and presented with their prizes.

The grand prize (overall) winner will be honoured with the **Andrew MacFarlane Prize** (an engraved plaque, plus a cash prize of **\$150**) and the opportunity to be a **"Scientist for a Day."** This student will spend the day visiting research laboratories and having lunch with a research scientist.

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.

**Eligibility:** The contest is open to all secondary-school students in The Thames Valley District School Board, London District Catholic School Board, and Regional Private Schools.

For more information about essay contest entries, please contact Partners In Research at: [info@pirweb.org](mailto: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 high school classrooms in real time with Canadian researchers, using advanced videoconferencing technology. See [www.vroc.ca](http://www.vroc.ca) for details.

**The Children's Health Research Institute** (CHRI) is a collaborative venture by the Children's Health Foundation, The University of Western Ontario's Department of Paediatrics, and the Children's Hospital of Western Ontario. The primary goal of the CHRI is to create and sustain an academic research centre that will improve children's health care by addressing relevant questions about the causes, cures and long-term effects of children's diseases and disabilities, and by evaluating new therapies for infants and children. The Children's Health Foundation is proud to fund the CHRI and to share in its mission.

**The University of Western Ontario** ranks among the top research-intensive universities in Canada. Western has been home to scholars and students since 1878 and is now the third largest university in Ontario.

For more information about our respective organizations and the nature of our work and educational outreach programs, we invite you to visit us online at: [www.pirweb.org](http://www.pirweb.org) (Partners In Research), [www.vroc.ca](http://www.vroc.ca) (Virtual Researcher on Call – an educational program offered by Partners In Research), [www.chri.org](http://www.chri.org) (Children's Health Research Institute), and [www.uwo.ca/research](http://www.uwo.ca/research) (The University of Western Ontario).

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



**Ronald G. Calhoun**  
Executive Director  
Partners In Research



**Dr. Victor K.M. Han**  
Scientific Director  
Children's Health Research  
Institute



**Dr. Ted Hewitt**  
Vice-President (Research and  
International Relations)  
The University of Western Ontario

## 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 dates.
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](http://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, 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

## Sample Essay Topics – General

Adolescent nutrition and lifestyle	Medical physics
Anaesthesia	Metabolic processes
Age related vision loss	Microbiology
Autoimmunity	Molecular biology, genetics
Biochemistry	Molecular virology, biotechnology
Bioinformatics	Motor control and learning
Biology	Neurobiology
Biomaterials	Nanotechnology
Brain Mapping	Neuroimaging
Cancer - quality of life effects	Neurology
Cardiovascular MRI	Neuroscience
Climate change	Nuclear power generation
Chemistry	Oncology
Cognitive development / knowledge	Origin of life
Cryogenics	Ovarian cancer
Diabetes	Parkinson's
Diagnostic imaging (CT, MRI, nuclear imaging)	Pharmacology, toxicology
Diversity of living things	Physical activity and Health
Earth and space science	Physiology of motion sickness
Evolution	Physics
Exercise science	Plants (anatomy, growth and function)
Fuel cells	Plate tectonics
Fatigue and Illness	Population dynamics
Genetic analysis techniques	Radiation therapy for cancer
Genetics	Reproductive biology
Genetics: biotechnology	Re-educating the immune system
Global warming	Robotics in medicine
Health effects of air pollution	Spinal cord
Hereditary diseases	Spinal cord injuries
HIV/AIDS	Stem cell research – ethics
HIV/AIDS research in Canada	Stroke: brain attacks
Homeostasis	The aging brain
Taking on infectious disease	Surgery (robotic, endoscopic)
Immunology	Transplantation
Light and Optics	Veterinary medicine
Lipid biochemistry	Virology
Bonding	Wildlife ecology

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

# PIR ESSAY CONTEST 2009-10: ENTRY FORM

Secondary school entries are due in, at Partners In Research's office no later than **March 5, 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  
700 York Street  
London, ON N5W 2S8

**(b) E-mail to [lorraine@pirweb.org](mailto:lorraine@pirweb.org)**