



INNOVATIS

UBC hosts 2005 Canada-Wide Science Fair

Manning Award winners share \$20,000 in prizes



Front Row, L-R, Spencer Hughes, Janet Frielich, Farhad Seif (Petro-Canada Representative), Chet Gervais, Patrick Danielson. Back Row, L-R, Hamza Bari, Arif Ali Awan, Anne-Sophie Blais, Donald Park (Executive Director, Manning Innovation Awards), Dick Wilson (Trustee, Manning Innovation Awards), Marie-France Laberge, Robin Miron, Keri Williams, Jennifer Wang

“There is no such thing as a failed experiment, only experiments with unexpected outcomes.”

– Buckminster Fuller

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The Canada-Wide Science Fair (CWSF) is a project of the Youth Science Foundation of Canada. The 2005 CWSF was held at the beautiful campus of the University of British Columbia (UBC) in Vancouver. The 478 finalists included representation from all ten provinces and two territories.

Of the 91 projects in the Senior Division, 57 projects with an innovation theme were self-nominated for the \$20,000 in prizes provided by the Manning Innovation Awards.

The Canada-Wide Science Fair is the annual culmination of science fairs held in 100 communities across Canada involving more than 25,000 students in Grades 7 to 12. This year's Fair, the largest to date, involved 478 students discussing 384 projects.

This is the 14th year that the Foundation has supported the Canada-Wide Science Fair. During that period, 74 Manning Young Canadian Innovation Award winners have been recognized.

Young Canadian Innovation Award Winners:



Keri Williams



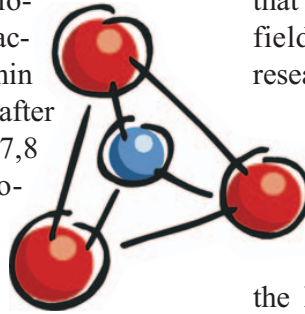
*Patrick Danielson, L,
and Robin Miron*

Targeting Toxins

This is the second year that Keri Williams is honoured for her continued cancer-related research.

The Grade 12 student from Merritt, BC, received a \$500 Manning Innovation Achievement Award last year.

Her continued work investigating the destructive biological chain of reaction that occurs within the human body after exposure to 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD) was rewarded with a \$4,500 Manning Young Canadian Innovation Award at the 2005 CWSF.



Keri's research determined that it is possible to inhibit the toxic biological effects induced by TCDD. She also developed proactive strategies focusing on diet, supplements and lifestyle choices to reduce or eliminate intake of dioxins and developed a manual that will help those in the medical field better understand, treat and research the impact of TCDD.

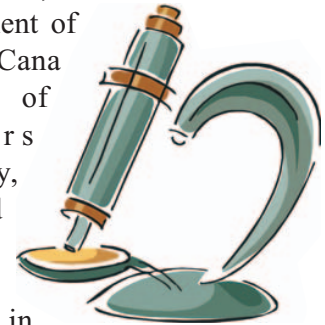
In addition to the \$4,500 Manning Young Canadian Innovation Award, Keri received Honourable Mention in the Biotechnology Division and the opportunity to spend one month in Israel at the Weizmann Institute summer camp.

Marine Sampling Technology

Patrick Danielson and Robin Miron, who attend Ecole Algonquin Catholique in North Bay, ON, also were named \$4,500 Young Canadian Innovation Award Winners for their creation of a new-to-science Marine sampling technology. It's a flow-through sampler that can quickly and efficiently collect micro-invertebrate samples from large water bodies, do it in real time, and provide data that can be used immediately or back at the lab, thereby increasing the qualitative value of, and more specific locations for, macro-invertebrate populations that are critical to marine research.

This team complemented its Manning Award with several other

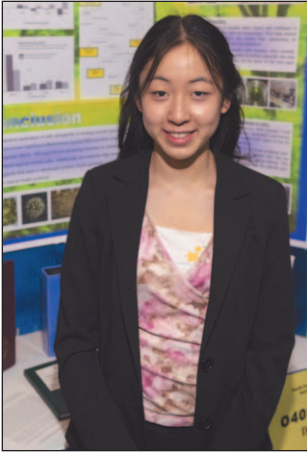
prizes: \$5,000 as recipient of the EnCana Best of Seniors category, the Gold Medal and \$1,500 in



their Engineering & Computing Sciences Division, and one of three finalists in the running to represent Canada at the prestigious Stockholm Junior Water Prize competition in August.

Rounding out their prize list are \$2,000 scholarships to the University of Western Ontario and the University of British Columbia.

Young Canadian Innovation Award Winners:



Jennifer Wang

Proud sponsor



Chet Gervais

Rooting for a Cure

Jennifer Wang is a Grade 11 student at Walter Murray Collegiate Institute in Saskatoon, SK. Jennifer’s project investigated the feasibility of developing extracts from the Wild Sarsaparilla plant. It has properties similar to ginseng, which contains ginsenosides, reputed to help fight cancer. The Wild Sarsaparilla plant is a perennial found in abundance in the boreal forests of northern Saskatchewan.



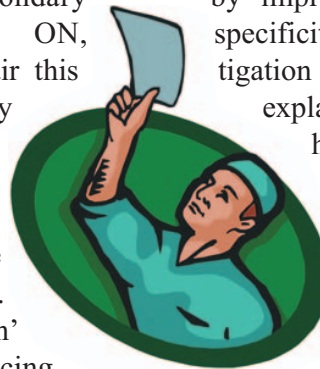
“My study reveals, for the first time, the therapeutic application of Wild Sarsaparilla in treating human cancer cells, as promising derivatives can be developed into

selective and effectual anti-cancer products without great side effects against normal cells. Additionally, the relatively high percentage of yield from the original plant suggests that such a developed product would generate a high economical return to benefit both the cancer patients and the market for alternative treatment products.”

She also received the Health Sciences Gold Medal and \$1,500; a \$200 Petro-Canada Peer Award; and \$2,000 scholarships at the University of Western Ontario and the University of British Columbia.

Matrix Probe Fusion

Chet Gervais, a Grade 11 student at Sandwich Secondary School, Amherstburg, ON, returned to the national fair this year with a completely revised medical diagnostic imaging approach that should enhance the quality of imaging in the detection of breast cancer. Chet’s Matrix Probe ‘Fusion’ System is capable of producing ‘full-field’ three-dimensional, high-resolution data block that incorporates the medical DICOM3 medical image standard for mammography and breast ultrasound images.



digital mammography images, thereby improving sensitivity and specificity of both during investigation of breast cancer,” Chet explained, adding that he has filed for a U.S. patent.

In addition to his \$4,500 cash award, Chet also won other awards, including \$300 and a Bronze Medal for the Health Sciences Division; a \$1,000 Quality of Life award from the Canadian Institute of Health Research (Musculoskeletal); \$400 from the Canadian Acoustical Association; and a \$2,000 scholarship from the University of Western Ontario.

“This new bio-medical engineering technology allows more precise correlation of multi-planar reconstructed 3D ultrasound images with advanced

\$500 Manning Innovation Achievement Award Winners

Manning Innovation Awards

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Arif Ali Awan and Hamza Bari, Grade 12 students at Montreal's Marianopolis College, were recognized for their research work in identifying mutations in protein kinases. Through molecular modeling, four kinases were identified as possible new oncogenes reported for brain cancer. The students believe their work on these kinases will provide researchers with potential targets for drug design to inhibit the mutated genes for therapeutic purposes.



*Arif Ali Awan, L,
and Hamza Bari*



*Marie-France
Laberge, L, and
Anne-Sophie Blais*

Anne-Sophie Blais and Marie-France Laberge, both Grade 11 students at Externat St-Jean-Etudes in Beauport, QC, received their award for their project "Band-Aid Biology" that addressed the feasibility of using Chitosan as a biodegradable coating to preserve fruits and vegetables. Chitosan is a substance derived from the shells of shrimp, crab and other crustaceans and has been popular as a fat-absorbing nutritional supplement.



Janet Frielich

Janet Frielich, a Grade 12 student at Sir Winston Churchill in Vancouver, demonstrated a correlation between chemiluminescence and the growth rate of cells. Chemiluminescence is produced as oxygen radicals are metabolized – emitting energy in the form of light. This research could lead to a method to better differentiate between cancer cells and normal cells, as well as to determine the effectiveness of drugs designed to affect the metabolic activity of cells.



Spencer Hughes

Spencer Hughes, Grade 12 student at Timmins High in Ontario, won the \$500 Achievement Award for his project demonstrating the possibility of transforming the residual thermo-ionic potential of nuclear waste in fulfilling a community's demand for environmentally responsible energy.