



# Innovatis

Ernest C. Manning Awards Foundation



**Awards Gala – October 14, 2011**  
(Shaw Conference Centre 6:00pm)

**Symposium – October 15, 2011**  
(University of Alberta 8:30am-4:00pm FREE)

2012  
CALL FOR  
NOMINATIONS

Deadline for submissions  
December 1, 2011

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**Ernest C. Manning Awards Foundation**

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**President** Executive Assistant  
David B. Mitchell Marsha Miller

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## Welcome 2011 Winners

We are proud to announce the  
2011 winners of the Manning Awards.

This year 10 outstanding winners join a distinguished group of extraordinary and inspiring Canadians who have demonstrated the imagination to innovate and the stamina to succeed. Winning innovations include:

- clean-burning natural gas in diesel engines;
- a social innovation in which a baby teaches children about parenting, neuroscience and caring for one another;
- a wipe-able computer keyboard that is easy-to disinfect, buttonless, and is touch-and tap sensitive;
- aerodynamic mud flaps that reduce spray and drag and improve airflow around vehicle wheels.

As well, we have six outstanding new recipients of Young Canadian Awards to tell you about.

Every year, the winners of the Manning Innovation Awards remind us why Canada is known internationally as a strong economic and social performer.

When David E. Mitchell established the Foundation, he was determined that *all* forms of innovation be recognized. He understood that a unique idea can emerge as easily from a research lab as a home basement. The inventor of a solution to sewage backup into homes and buildings should be celebrated alongside the doctor who pioneered the first total artificial knee replacement. That broad, inclusive view of ingenuity has always characterized the Manning Innovation Awards. And it has provided a unique glimpse into the extraordinary breadth of ingenuity percolating throughout Canada.

Creativity knows no professional, geographic or cultural boundaries. New ideas erupt everywhere. People of any age or walk of life, engaged in their personal and professional communities, generate world-changing ideas. But only those with the imagination to innovate and the stamina to succeed can bring them to life and make a difference.

See inside for profiles about the 2011 Manning Award winners.

# 2011 Winner Profiles

Sharing the imagination to innovate and the stamina to succeed.



**Innovation Award**

Randal (Randy) J. Marsden  
Edmonton, Alberta

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## Innovation Award: \$10,000

### CleanKeys

Randy Marsden wondered what was up when he spotted an invoice from his computer access solutions company, Madentec, for a hands-free computer-mouse alternative shipped to a dentist in France. It turned out that bringing computer technology into the treatment room had created new challenges in infection control: Every time the dentist needed to touch the mouse, he had to remove his gloves. An even stickier problem in health care environments, Marsden discovered, was the computer keyboard, which was among the most contaminated touched surfaces in hospitals.

*Marsden's solution?* An easy-to-disinfect, buttonless, touch- and tap-sensitive keyboard called Cleankeys.

Designed in response to the expressed needs of dentists, Cleankeys incorporates several innovations that rest on Marsden's 20 years' experience in designing computer access solutions for people with disabilities. The smooth, sealed keyboard is not only easy to clean, but allows users to rest their hands until activating the keys by typing, as if using a traditional keyboard.

Each year in Canada and the United States, hospital acquired infections kill some 100 thousand people—enough to fill two football stadiums—and infect about 1.7 million. Cleankeys is designed to help break the chain of infection transmission.

Since Cleankeys Inc.'s first quantity shipment of product in February 2008, thousands of units of the Alberta-made keyboard have been sold in 15 countries. Sales are expected to double in 2012 as Cleankeys technology continues to permeate an expanding \$6-billion global market.

## Innovation Award: \$10,000

### Vortex Splash Guards: Low Spray, Aerodynamic Smart Mud Flaps

Small business owner Mark Morin calls himself "an Average Joe," but his creativity to innovate and stamina to succeed couldn't be less ordinary. His patented aerodynamic Vortex Splash Guards, designed to not only improve road safety, but also fuel efficiency, are an elegant solution to sight-obscuring vehicle spray and fuel-guzzling drag.

A white-knuckle drive on a rainy day 26 years ago inspired Morin's late

stepfather, Albert, to create and patent the original splash guard design, which Mark Morin later helped to develop and commercialize for cars, pickup trucks, vans, SUVs and semi-trucks and trailers, at times working with friends and family out of his garage to put Vortex Splash Guards on store shelves.

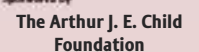
The innovative "mud flaps" have slat-like ports that channel air and water through the flaps so as to reduce spray and drag and to improve airflow around vehicle wheels, thus helping to reduce wear and tear on the breaks and tires. For vehicles legally required to have mud flaps, switching to aerodynamic splash guards could reduce fuel consumption by 0.5-1 percent—enough to save the average trucker hundreds of dollars a year while helping vehicle operators to meet increasingly strict standards for fuel-efficiency and greenhouse gas emissions.



**Innovation Award**

Mark J. Morin  
Restoule, Ontario

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Morin's efforts over the last decade to license Vortex splash-guard technology and forge partnerships with various manufacturers has led to the sale of over 15 thousand pairs of splash guards.

### David E. Mitchell Award



Mary P. Gordon  
Toronto, Ontario

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### David E. Mitchell Award of Distinction: \$25,000

#### Roots of Empathy: Evidence-Based Classroom Program to Build Caring, Peaceful and Civil Societies

Mary Gordon learned the significance of empathy from families in pain. An educator and parenting expert, her work with families struggling with domestic violence, child abuse and child neglect made it clear that the common denominator was an absence of empathy. Certain that "love grows brains," she created Roots of Empathy, in which a parent and young baby visit with an elementary class over the school year, the loving attachment relationship between parent and baby serving as the ideal model for empathy.

A trait now understood by neuroscientists to underpin children's healthy social and emotional development, empathy also lies at the heart of peaceful and civil societies. Described as "Canada's olive branch to the world," Gordon's evidence-based program has received high praise from the likes of former Governor General Michaëlle Jean, who awarded Gordon the Order of Canada in 2005; Dr. J. Fraser Mustard, Founding President of the Canadian Institute for Advanced Research; and His Holiness, the Dalai Lama, who expressed his belief that programs like Roots of Empathy will bring world peace.

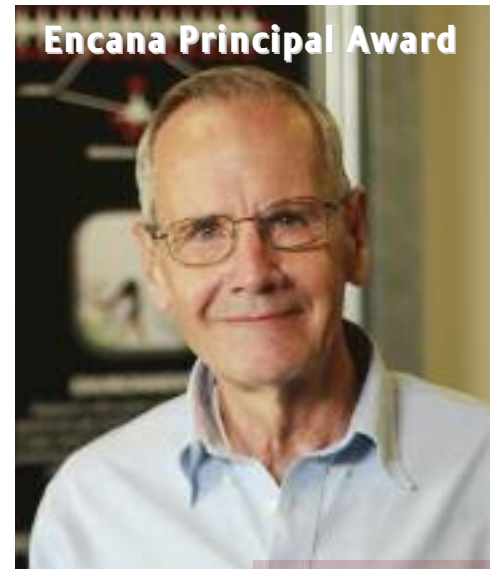
Since Gordon initiated Roots of Empathy in 1996, it has reached over 325,000 children, many in urban, rural and Aboriginal communities across Canada and New Zealand, others in the United States, the Republic of Ireland and the United Kingdom, including Northern Ireland.

### Encana Principal Award: \$100,000

#### High-Pressure Direct Injection (HPDI) of Natural Gas Into Diesel Engines

When Philip Hill graduated with a bachelor's degree in 1953, he wanted to research diesel engines but was told not to bother since the field was "completely developed." Today, Hill's revolutionary technology to run diesel engines on clean-burning natural gas, or methane, is in the marketplace and on the road powering transport and vocational trucks in North America and Australia, and is under development for other world markets.

Hill's innovation of high-pressure direct injection (HPDI) allows diesel engines—



Dr. Philip G. Hill  
Vancouver,  
British Columbia

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**encana.**  
natural gas

the world's workhorses of transportation—to operate with the same power and efficiency that they are known for, but with reduced emissions of smog-forming nitrogen oxides and particulate matter, and 21-27 percent fewer emissions of greenhouse gases. Engines running with HPDI technology test well below the US Environmental Protection Agency's standards for harmful emissions, and have impressed heavy-duty vehicle operator and original equipment manufacturers alike around the world. Hill conceived of HPDI and first developed the technology in the late 1980s in his research lab at the University of British Columbia's Department of Mechanical Engineering. His research group's work led to the founding in 1995 of Vancouver-based Westport Innovations Inc., now a company of over 650 employees whose technology portfolio includes over 200 patents, many of which stem from Hill's original series of inventions.

# 2011 Young Canadian Winner Profiles

Sharing the imagination to innovate and the stamina to succeed.



*Christopher Chopcain  
Sarnia Ontario*

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**Synocrude**



*Charlotte Donaldson  
and Megan Smith  
Chignecto West,  
Nova Scotia*

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## Innovation Award: \$4,000

### Computer Controlled Heart Assist Pump

Making a difference is important to Christopher Chopcain, which is why he used his Grade 11 science fair project to develop an innovation to help people with weak hearts. To this end, the Northern Collegiate Institute and Vocational School student developed a miniature computer-controlled heart assist pump that improves quality of life for people waiting for a heart transplant.

Chopcain designed, manufactured and tested the miniature device, which combines several technologies—both hardware and software—and is small enough to be installed in a patient's heart with minimally invasive surgery. The heart assist pump has the potential to be a commercial success and even be adapted for other medical uses, such as improving circulation in patients with diabetes.

## Innovation Award: \$4,000

### Extreme Immobilization

When lifeguards-in-training Charlotte Donaldson and Megan Smith saw a need for better aquatic-rescue spinal boards for children, they made it their mission to use their Grade 11 science fair project to come up with an innovative design.

The Hants East Rural High School students knew that in the case of neck or back injury, it is imperative to immobilize the spine during rescue to prevent further injury, or even paralysis. They noted, however, that smaller people tended to slide down standard rescue boards. After researching the spine's characteristics, surveying local first responders and closely examining existing products, the young innovators developed a new spinal board template and tested it—with impressive results. Their new board substantially improves immobilization, particularly for children. The two aim to obtain a Canadian patent on their design.

# 2011 Young Canadian Winner Profiles

Sharing the imagination to innovate and the stamina to succeed.



*Shayla Larson  
and Adam Noble  
Lakefield, Ontario*

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*David Pellerin  
Sherbrooke, Quebec*

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**The Jim McEwen  
Family**

## **Innovation Award: \$4,000**

### **The Hazards of Nanosilver Uncovered**

The germ-fighting powers of nanosilver have made it an increasingly common commercial and industrial antimicrobial agent. But what are the potential hazards associated with its widespread use? Two relative newcomers to science fairs, Adam Noble and Shayla Larson of Lakefield District Secondary School, addressed this important question in their science fair project, completed in their Grade 11 year.

The young scientists focussed on the effects of nanosilver on *Euglena*, a single-celled photosynthetic organism that may foretell the impact of nanosilver on other organisms in freshwater ecosystems. They found that the material was indeed toxic to *Euglena*, resulting in structural and functional changes and even cell death. They also noted that as a means of taking up nanosilver from watery surroundings, *Euglena* worked well.

## **Innovation Award: \$4,000**

### **Preference O-LED**

Shining an environmentally friendly light on organic light emitting diodes (OLEDs) has made David Pellerin from Québec's Eastern Townships an international science-fair winner. In contrast to conventional LEDs, which have often toxic metal components, OLEDs are much more environmentally friendly, yet offer similar performance and capabilities. However, current technology for blue OLEDs, in particular, leaves considerable room for improvement.

As a student at Séminaire de Sherbrooke, Pellerin worked in collaboration with the Séminaire Salésien and the local Zysman-Colman Laboratory at the University of Sherbrooke to develop luminescent components from organic polymer compounds. The young physicist and innovator made excellent progress in achieving a more effective blue light emitting diode, a technology considered the Nirvana of OLEDs.

# Foundation News

## Welcome new Trustees

Lisa Samson and John T. McLennan.

The Ernest C. Manning Awards Foundation is pleased to welcome two new trustees to the board: John T. McLennan and Lisa Samson.



Lisa Samson is the Managing Partner of StrategyCorp's Ottawa office. In this role, she brings over 16 years of experience as a strategic consultant, communications expert, and project manager to the clients of StrategyCorp Inc.

Lisa's extensive consulting experience has led to positive outcomes for clients in many sectors of the economy including: broadcasting and telecommunications; post-secondary education; energy and the environment; healthcare; and the retail sector.

Prior to joining StrategyCorp Ottawa six years ago, Lisa was the owner and Principal Consultant of Greystone Strategic, a boutique government relations consulting firm.



John T. McLennan, Chairman Emera Inc., is the former vice chair and CEO of Allstream Inc. (formerly AT&T Canada) and currently sits on the Boards of Chorus Aviation Inc. and Amdocs Ltd. John was chairman of the board of Nova Scotia Power Inc. from May 2006 to May 2009.

## A fond Farewell to Allan C. Shaw



The Trustees of the Ernest C. Manning Awards Foundation bid a fond farewell to **Allan C. Shaw, C.M.** Chairman, The Shaw Group Limited. Allan, one of Atlantic Canada's leading entrepreneurs, served as a Foundation

Trustee for 10 years. The trustees are grateful for Allan's outstanding leadership in championing the Foundation, building the Atlantic Chapter and supporting Atlantic Canada innovators.



## New Quebec Chapter Chair Welcome

The Foundation welcomes new Quebec Chapter Chair **Pierre Bourassa, B.Sc., G.D.A.S., MBA**, Manager of Natural Sciences and Engineering Research Council of Canada's Quebec Regional Office.

Pierre is a former Entrepreneur in corporate finance and the pharmaceutical industry and recipient of an award for his outstanding contribution to the industry from BIOQuébec, the Québec Industrial Life Science Association.

## Adieu to Serge Bourassa



The Trustees of the Ernest C. Manning Awards Foundation bid a fond farewell to **Serge Bourassa** who served as the Foundation's Quebec Chair for two years. The Trustees appreciate the leadership Serge provided in building the Quebec chapter of the Foundation.

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