

The Imagination to Innovate;
the Stamina to Succeed

Innovatis

Ernest C. Manning Awards Foundation

VOLUME 9, ISSUE 3, OCTOBER 2008

2008 National Awards Issue

CONTENTS

- 1 Our "Greatest Natural Resource"
- 2 EnCana Principal Award:
Professor Janusz Pawliszyn, PhD
Confronting Challenges:
The Environment
- 3 Dave Mitchell Award of Distinction:
Lee Danisch
They Chose Canada
- 4 Innovation Award:
Arnold Hennessy and Phil Hennessy
"Why Didn't I Think of That?"
- 5 Innovation Award: Bill Adams
Making a Better Society
- 6 The 2008 Manning Innovation
Awards Gala, Halifax
- 8 News from the Foundation



Ernest C. Manning Awards Foundation

38th floor, 421-7 Avenue SW,
Calgary, AB T2P 4K9
T: 403 645 8277
www.manningawards.ca

Executive Director

Mr. D. K. Bruce Fenwick, M.Sc., P. Geoph.

Executive Assistant

Ms. Marilyn Golding

Canadian Charitable Organization No.
13189 5930 RR0001

Our "Greatest Natural Resource" The Manning Innovation Award Winners

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 Mitchell established the Foundation, he was determined that ALL forms of innovation be recognized. He understood that a unique idea can as easily emerge from a research lab as a home basement. And 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.

This year, winning innovations ranged from precise lab-based scientific work transforming cumbersome, hazardous chemical testing processes into an efficient, environmentally friendly one; sensors that detect subtle underground movements before they turn into landslides – to an industrial invention that make home-based water conservation as simple as flushing your toilet and a social innovation that improves the health care outcomes of medical samples.

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.

Canada thinks of itself as a country rich in natural resources. And it is. But its greatest natural resource is its people. And that, quite simply, is the story of the Ernest C. Manning Awards Foundation.



President John K. Read welcomed guests to the 27th Annual National Awards Gala on October 3 in Halifax, Nova Scotia.

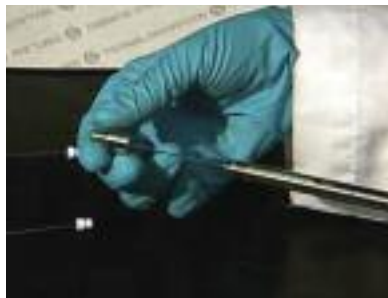
The Imagination to Innovate; the Stamina to Succeed

THE 2008 MANNING INNOVATION AWARD WINNERS

EnCana Principal Award: \$100,000

Professor Janusz Pawliszyn, PhD Waterloo, Ontario

Solid-Phase Microextraction [SPME]



A solvent-free method of testing for contaminants

Sponsored by



Testing for chemical contaminants has always had its own chemical downside – hazardous organic solvents. Janusz Pawliszyn’s Solid Phase Microextraction (SPME) changes that.

Solvent free, fast and precise, SPME uses a modified syringe to completely overturn the way chemical testing is conducted in a wide range of applications. Swiss fragrance and flavour company, Firmenich uses it to re-create natural tastes and smells. Investigators used it at Ground Zero after 9-11 to test for toxins.

Tailored to identify specific chemicals – toxins in drinking water, pesticides in fish, fire-starters in arson debris, flavour components in wine and coffee, even the chemicals that give flowers their fragrance – a miniature fibre “dipstick” captures the sample and stores it safely in the needle.

Before SPME, sampling picked up numerous chemicals – not just those of interest. Relatively large quantities of the material being tested were needed. Transported from field to lab for analysis, the process required solvents that were dangerous to work with and posed an environmental hazard. SPME not only eliminates the need for organic solvents, it reduces extraction time from about an hour to two minutes – allowing labs to run hundreds of additional tests every year.

Launched commercially in 1993, over 60 products in the Supelco SPME product line have generated over \$20 million US for Sigma-Aldrich-Supelco and \$1 million in royalties for the University of Waterloo.

For detailed background information and to see the video about Janusz and his work, visit www.manningawards.ca

CONFRONTING CHALLENGES: THE ENVIRONMENT

Innovations rarely erupt spontaneously: typically they are a response to a problem. Challenges provoke the imagination – and Canadians have long grappled with protecting the country’s ecology while growing its economy. While an advanced industrial nation, Canada is also heavily reliant on its natural resources. In addition to its other benefits, Janus Pawliszyn’s SPME virtually eradicated the environmental impact of an industrial process. Other Laureates have concentrated on reversing the effects of industrialization on the environment: not just in Canada, but around the world.

Environmental pioneer and world-renowned researcher **Dr. David Schindler** [1993], was recognized for establishing the environmental impact of phosphorous and acid rain on lake chemistry and organisms. His work led to restrictions in the phosphorous content in detergents and changes in air quality legislation in Canada, the United States, and the European Economic Community.

Access to clean water is a critical issue worldwide. **Dr. Pierre Côté** [2000], a civil engineer, developed a unique filtration membrane to filter and purify water: ZeeWeed®. Thin films containing billions of microscopic pores remove tiny particles such as clay, organic debris, metals, parasites, bacteria and viruses from water. Used to purify ground or surface water by municipalities for use as drinking water; as process water by industry and to treat municipal and industrial wastewater before it is discharged.

David Schindler, PhD
Award of
Distinction, 1993
Protecting the health of
freshwater lakes



Pierre Côté, PhD
Principal Award, 2000
Making clean water
accessible world-wide



THE 2008 MANNING INNOVATION AWARD WINNERS

Dave Mitchell Award of Distinction: \$25,000

Lee Danisch Fredericton, New Brunswick

ShapeAccelArray [SAA]



Threading the ShapeAccelArray into the ground

A one-time potter with a Master's degree from MIT in Electronic Engineering, specializing in brain research, Lee Danisch is the inaugural recipient of the Dave Mitchell Award of Distinction for the ShapeAccelArray.

A flexible tube embedded with hundreds of sensors, the ShapeAccelArray [SAA] detects subtle underground movements before they turn into landslides – or structural failures threatening construction sites, bridges, buildings. Resembling a garden hose, SAA is made up of about 100 rigid metal segments, 30 cm long, connected by flexible joints. Sensors in each segment “know” their position in two or three dimensions, and relay that information wirelessly. Every eighth segment contains a microprocessor, a digital temperature sensor and additional multiplexing electronics. The tilt and rotation of each segment allows the array’s movement to be calculated, revealing the very slight ground or structural movements that precede larger, disastrous events. Data, transmitted wirelessly, is available on the internet, in easy to read 3D graphics.

Lee lives in Fredericton, NB., in a geothermally heated home of his own design. Working in the space and biomedical sciences, including a stint as researcher at the Boston Medical Center, he left the US for New Brunswick in the early 1970s, setting up a pottery kiln and living off his art for 12 years before founding Measurand Inc., which markets the SAA.

The ShapeAccelArray is used throughout North America at major construction sites and at Japan’s National Research Institute for Earth Science and Disaster Prevention [NIED].

For detailed background information and to see the video about Lee and his work, visit www.manningawards.ca

Sponsored by

Friends and Laureates of the Foundation

THEY CHOSE CANADA

Social diversity correlates highly with strong economic growth and competitiveness. With one of every six residents born outside the country, Canada has an abundance of “creative capital”: a powerful pre-condition for thriving innovation.

US-born **Lee Danisch**, this year’s winner of the Dave Mitchell Award of Distinction, left a promising career at Boston University Medical Center and chose Canada. Numerous other Laureates similarly chose this country.

Molecular biologist and Nobel Prize winner **Dr. Michael Smith** [1994], whose site-directed mutagenesis, reprogramming segments of DNA, launched a new era in genetics research, was a native of Blackpool, England. He came to the University of British Columbia for post-doctoral studies. After a brief stint in Wisconsin, he returned to Canada, and undertook the work for which he would receive a Nobel Prize and a Manning Innovation Award.

Dr. En-hui Yang [2007], inventor of some of the world’s most widely used data compression technologies for digital communications, was born in China. He brought his skills to Waterloo, Ontario, where he co-founded SlipStream Data Inc., the global leader in its sector.

Michael Smith, PhD
Principal Award, 1994
A native of the United Kingdom



En-hui Yang, PhD
Award of Distinction, 2007
Born in China



The Imagination to Innovate; the Stamina to Succeed

THE 2008 MANNING INNOVATION AWARD WINNERS

Innovation Award: \$10,000

Arnold Hennessy and Phil Hennessy Toronto, Ontario

Flapperless Tip-Bucket Toilet



No leaking, no sweating, no waste

Sponsored by



Environment Canada reports that the average toilet wastes up to 200,000 litres of water a year. That was before the uncle / nephew team of Arnold and Phil Hennessy and their Flapperless Tip-Bucket Toilet.

Long before water conservation was a widespread concern, Arnold Hennessy was appalled by the unnecessary waste. A skilled, self-taught plumber, he set out to build a toilet back in 1975 that would use less than 4 litres of water per flush. He was too far ahead of his time. It was decades before low-flow toilet rebates and public service announcements about the need to conserve water changed public opinion. But Arnold persisted, and continued to improve his idea.

It's not unheard of for 40% of a household's water use to be the result of a leaking toilet. The culprit is the flapper valve. The Flapperless Tip-Bucket Toilet eliminates the flapper, holding the water in a trough inside the tank. Deflectors around the outlet to the toilet bowl channel the water for an effective flush, so that unlike many "low-flow" toilets, it doesn't take multiple flushes to wash away waste.

Joined by his nephew Phil in 1998, the first Flapperless toilets were field tested in 1999 in a public housing project in Toronto – with great success. With over 1 million toilets sold in Canada and the United States, Flapperless Inc. has revenues in excess of \$2 million from sales and international licenses, including Mexico, the Middle East and China.

For detailed background information and to see the video about Arnold, Phil and their work, visit www.manningawards.ca

"WHY DIDN'T I THINK OF THAT?"

Some of the best innovations seem, in retrospect, obvious. But seeing something old in a new way is difficult. And it's just the beginning. Inventing something new is rife with technical challenges. Once built, uncomprehending industries, resistant to change, have to be convinced. For the Hennessy's, the initial insight and the technical demands were minor compared to the tenacity – nearly 25 years – it took to convince the market.

Gabe Coscarella's [2005] Full-Port Backwater Valve was a deceptively simple idea. Rather than a number of valves scattered in the basement covered by walls and floors – any one of which could back up and lead to a flood – Gabe's Fullport Backwater Valve installs directly on the main sewer line coming into the house, in a normally open or "fullport" position. When the sewer starts to back up, water rises in the body of the valve and the flow of water pushes it into the closed position. One valve protects the entire building – and changed the National Plumbing Code of Canada.

Manitoba's **Bradley Caruk** [2006], an animator, was struck by a colleague's story of the sight of passengers in the Paris subway staring intently out the windows at dull, dirty subway tunnels. He turned subway tunnels into filmstrips on three continents with SideTrack™. Like a child's flipbook, a motion-sensitive lighting system illuminates pictures that passengers see as a moving picture. Not only does it give passengers something to look at, it opened up revenue generation opportunities for cash-strapped public transportation systems.

Gabe Coscarella
Innovation Award, 2005
No more flooded basements



Bradley Caruk
Innovation Award, 2006
Animating subway tunnels



The Imagination to Innovate; the Stamina to Succeed

THE 2008 MANNING INNOVATION AWARD WINNERS

Innovation Award: \$10,000

Bill Adams Halifax, Nova Scotia

SmartSample®



Medical sampling made simpler and safer

Sponsored by

Arthur J.E Child Foundation

Since the 1920s, pharmaceutical samples have been an important way for doctors and patients to evaluate drug therapies. The system hadn't changed much for nine decades – until Bill Adams came along.

A freshly minted MBA, Bill was an enthusiastic pharmaceutical company rep, distributing samples to doctors. He soon saw problems with the process: most medications must be stored at temperatures between 15 and 30° C. But on the road, samples were regularly exposed to anything from -30° in winter to +40°C in summer. Worse, an estimated 50% of sample medications disappear: unused, misused, forgotten.

SmartSample®, slightly larger than a regular credit card, solves these problems – and does more. Product information appears on one side of the card; a form on the other. Once authorized by a doctor, patients simply take the “prescription” to be filled. Gone are wasteful blister-packs and expired, unused medications that become hazardous waste. Bringing the pharmacist into the loop means adverse drug-drug interactions can also be identified.

Since its launch in 2002, most provincial pharmacy associations and regulatory bodies across Canada have endorsed it. Eight of the top ten pharmaceutical companies use SmartSample® for various products, including diabetes, cardiovascular diseases, depression, arthritis and contraceptives.

As electronic health records become the norm across Canada, SmartSample® provides the kind of documentation that will make better, more effective healthcare possible.

For detailed background information and to see the video about Bill and his work, visit www.manningawards.ca

MAKING A BETTER SOCIETY

Long before the phrase “social innovator” became widespread, the Ernest C. Manning Awards Foundation understood the importance of recognizing those spearheading novel ways to solve major social issues. Bill Adams' SmartSample® is just the latest example of an idea that made a massive change in the way we think.

In 1984, **Diane Dupuy** was recognized for her groundbreaking work with developmentally disadvantaged adults. Her Famous People Players, an internationally renowned black light theatre company, not only made people with physical and mental disabilities the stars of theatrical and visual arts performances, but gave them responsibility for the company's dinner theatre dining room management and arts administration.

His 27-month Man in Motion Tour took him through the United States, Britain, Europe, the Middle East, New Zealand, Australia, the Far East and Canada. **Rick Hansen** [1989], not only raised \$27 million for spinal cord research, far surpassing his \$10 million goal, he changed the way the world thought. His insight and determination demonstrated unequivocally that a spinal cord injury is an *injury*, not a *disability*.

Diane Dupuy
Award of Merit, 1984
A place for talent
to flourish



Rick Hansen
Award of
Distinction, 1989
Injured? Yes.
Disabled? No.



THE 2008 MANNING INNOVATION AWARDS GALA, HALIFAX

The Imagination to Innovate; the Stamina to Succeed



Dinner Chairman, Dr. David Wheeler, Dean of the Faculty of Management, Dalhousie University



Dr. Bob Fournier with Arnold Hennessy and Phil Hennessy, winners of a Manning Innovation Award



Lieutenant Governor of Nova Scotia, The Honourable Mayann E. Francis, O.N.S., Dhum
Anthony Brohan, Young Canadian Innovation Award winner



Above: David Mitchell, John K. Read and The Honourable Mayann E. Francis, O.N.S., Dhum

Linda Henshaw

Left: EnCana Principal Award winner, Professor Janusz Pawliszyn, PhD and John K. Read, President, Ernest C. Manning Awards Foundation

Wayd McNally, 2005 Award of Distinction winner

Allan Shaw, C.M., Trustee and past Chair, Atlantic Canada Chapter

Right: Marshall M. Williams, Trustee
Kathryn Davis and Bob VanDine, Health Consultant, Government of Nova Scotia
Rebecca Wolfe, Young Canadian Innovation Award winner



THE 2008 MANNING INNOVATION AWARDS GALA, HALIFAX

The Imagination to Innovate; the Stamina to Succeed

Right: David B. Mitchell, Trustee
 Rod Garossino, EnCana Corporation and
 Professor Janusz Pawliszyn, PhD, EnCana
 Principal Award winner
 Lee Danisch, winner of the Dave Mitchell
 Award of Distinction



Left: 1992 Principal Award Recipient
 Dr. Kelvin Ogilvie

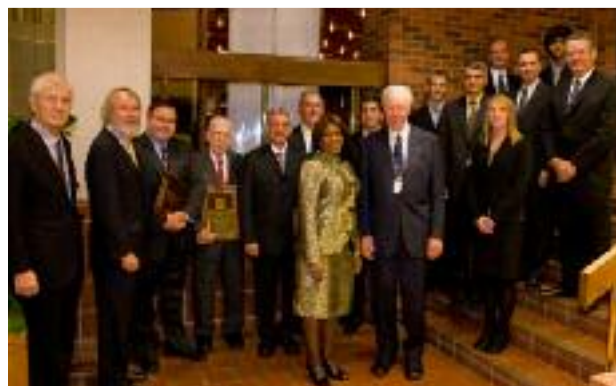
Dr. Sharon Wood-Dauphinee, Selection
 Committee and guests

Suzie Keténé, Atlantic Canada Chapter
 member.

Below: The 2008 Laureates with
 The Honourable Mayann E. Francis,
 O.N.S., Dhum

2004 Principal Award Winner and BC
 Chapter Chair Murray Goldberg

Petro-Canada's Bob Maloney congratulates
 Rebecca Wolfe



Left: Bill Adams, Manning Innovation
 Award winner

Helen Quinlan-Hainse, Scotiabank

Dr. James A. McEwen, 1997 Principal
 Award winner, Trustee and sponsor of the
 Young Canadian Innovation Award
 presented to Zamir Merali and Ryan
 Willick

The Imagination to Innovate; the Stamina to Succeed



Wayd McNally



Nancy Knowlton & David Martin



Dr. Stuart Foster



Drs. Lindsay Machan & William Hunter



Christopher McNamara



Scott Tanner [left] & Vladimir Baranov [right]



France Côté

NEWS FROM THE FOUNDATION

Laureate News

Wayd McNally [Award of Distinction, 2005, PE], Founder and CEO of Sensor Wireless Inc., has just completed the commercialization of a new Top Load measurement device, to be used in calibration and monitoring of capping forces in bottling lines.

Laureates **Nancy Knowlton** and **David Martin** [Innovation Award, 2002, AB] were featured in a Report on Business story in the *Globe and Mail* in August. In it, Nancy Knowlton, CEO, predicted SmartTechnologies ULC sales would top \$1 billion in annual sales over the next two to four years.

In April 2008, **Dr. Stuart Foster** [Award of Distinction, 2006, ON], professor of medical biophysics and Sunnybrook Health Sciences Centre won one of Ontario's most prestigious awards: the Premier's Discovery Award, worth \$500,000.

Earlier this month, **Drs. Lindsay Machan & William Hunter** [2006, EnCana Principal Award, BC] received FDA approval to market its second-generation TAXUS® Liberté® Paclitaxel-Eluting Coronary Stent System through its US partner, Boston Scientific.

Christopher McNamara [Innovation Award, 2007, NS] has successfully taken Siren ePCR to the Netherlands. In May 2008, the Regionale Ambulance Voorzieng Provincie Utrecht, the Netherlands' largest ambulance agency, began rolling out Siren ePCR to its fleet of more than 60 vehicles.

There they go again...

Scott Tanner and **Vladimir Baranov** [Award of Distinction, 2001, ON] established a new company, based on yet another new innovation: DVS Sciences. In July 2008, the Ontario Institute for Cancer Research sent them a strong signal of support with a \$500,000 investment in their technology, which improves the identification of biomarkers for the study and diagnosis of cancer.

A new Trustee and a new Chapter

John K. Read, President of the Ernest C. Manning Awards Foundation is delighted to announce that **France Côté**, a partner with Bereskin & Parr and head of their Montréal office, has joined the Board of Trustees and is establishing a Quebec Chapter. A patent agent, registered to act before the Canadian and US Patent Offices, her expertise is in biochemistry, biotechnology, molecular biology, proteins, genes, cloning, pharmaceuticals, PCR techniques and high throughput techniques,

More on France, and the Chapters in the next issue of *Innovatis*.

THANKS TO OUR PARTNERS



Arthur J. E. Child Foundation
The McEwen Family
The Dave Mitchell Family
Friends and Laureates of the Foundation

NOMINATIONS FOR 2009

The Stamina to Succeed

Who says Canadians can't commercialize? For nearly 30 years, the Manning Innovation Awards have celebrated Canadians with the imagination to innovate and the stamina to succeed. If that sounds like you, or someone you know, we want to hear from you.

Awards range from \$10,000 to \$100,000. Nominations close December 1.

Since 1982, the Ernest C. Manning Awards Foundation has celebrated the achievements of 207 exceptional individuals with awards totalling \$3.9 million. Drawn from the scientific, technological and social communities, the men and women who have been recognized have changed the way Canada competes.

www.manningawards.ca