Be immortalized!
Alberta is Changing the World

ALBERTA SCIENCE AND TECHNOLOGY LEADERSHIP FOUNDATION

Weiss, Dr. Samuel **World leader** in neural stem cell ▪ **Lachapelle, Dr. Gerard** First application of **geomatics to sport** Canadian Olypmic ski team ▪ **Clark, Dr. Karl A.** Inventor of **water extraction** process for **oil sands** ▪ **Beaulieu, Dr. Norman** World's leading **wireless communications** expert, inventor of coding tables ▪ **Currie, Dr. Philip** World leading **palaeontologist**, first to describe feathered dinosaurs, and first to lead joint NA-China project since 1920s ▪ **Sutherland, Dr. Garnette** World's first **MRI capable surgical robot** ▪ **Pilarski, Dr. Linda** Research results in innovative technology through tissue donations to understand, **detect and treat cancer** ▪ **Poynt Corporation** **World leader** in geo-location **smart phone** search ▪ **Micetich, Dr. Ronald G.** World leader in **drug discovery** and pharmaceutical research ▪ **Taylor, Dr. Richard E.** First UofA Alumni to receive a **Nobel prize** (1990, Physics)

ASTech Foundation

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FEATURING 2011 ASTech HONOUREES, PATRONS AND SPONSORS

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Be Immortalized! Alberta is Changing the World

Message from the Foundation

This year marks the 22nd year of the ASTECH awards, and over these years, the Alberta Science and Technology Leadership Foundation (ASTECH) has identified, celebrated and honoured outstanding achievements and innovations across Alberta. These achievements and innovations have impacted the lives of Albertans, Canadians, globally positioning Alberta as a national and global science and technology leader.

The innovation occurring in the province is the harvest of fruitful collaborations between government, academia and industry. It takes place in the research lab and in the field. It involves educators, researchers, students, community leaders, institutions and corporations. And its participants come from all of Alberta's major industries — energy, forestry, agriculture, technology, health and education.

The profiles of the honourees and lists of ongoing global impact examples contained in the booklet exemplifies how Albertan's are changing the world through their work. They are bringing groundbreaking technologies and scientific discoveries to their fields, improving the lives of individuals, making important contributions to society and enriching Alberta's economy.

The awards have grown to encompass more than a dozen distinct categories. The science and technology community contribute to the identification of these achievements by submitting nominations, from which a rigorous and independent adjudication process selects the honourees and winners. The foundation is a private, not-for-profit society supported by patron organizations from the private and public sectors. Patrons come from diverse industries and backgrounds that include business, government, research and education. All patrons share the same goal of promoting and honouring world-class innovation in science and technology. ASTECH is the premiere organization in Alberta that works to generate widespread public awareness for these worthy achievements.

Brent Allison
CHAIR , ASTECH FOUNDATION

Inspiring Innovation through Celebration of Excellence

2011 ASTECH Award Categories

Excellence in Science and Technology Public Awareness

This award recognizes that public awareness is an essential component of doing science. The winner, a group or organization that has contributed to public awareness, is chosen by a panel selected from the print and broadcast media and from the public relations community.

Leaders of Tomorrow

The Leaders of Tomorrow Award recognizes individuals under 30 who are seen as emerging leaders in their Alberta-related fields of work or study. This award is sponsored by Advanced Education & Technology.

Outstanding Achievement in Applied Technology and Innovation sponsored by SAIT Polytechnic

This Award is presented to an individual or team that has made a significant contribution through discovery or application of technology, based on criteria such as overall impact on industry or trade, economic and social impact, and results that change and advance current practice.

Innovation in Information and Communications Technology sponsored by TELUS

This Award is presented to an individual, team or organization that has demonstrated leadership and innovation leading to the successful development and/or commercialization of novel ICT technology with significant impact in enabling applications in any sector.

Innovation in Oil Sands Research sponsored by Syncrude Canada Ltd.

This award is presented to an individual or team who have demonstrated exceptional research ability or have developed a technology of significance to the Alberta Oil Sands sector.

Outstanding Achievement in Environmental Technology and Innovation sponsored by Agrium Inc.

The Outstanding Achievement in Environmental Technology and Innovation Award is presented to an individual, team or organization that has demonstrated leadership and innovation leading to the successful development and/or commercialization of novel technology or processes with significant environmental application and benefit.

Innovation in Agricultural Science sponsored by Dow AgroSciences

This award is given to an individual, team or company that has demonstrated exceptional innovation, or which has developed a technology of significance to Alberta's agriculture industry.

Outstanding Leadership in Alberta Technology

This award is presented to an individual or team that has led, or significantly contributed to, a technological innovation or breakthrough.

ASTECH Societal Impact Award

The ASTECH Societal Impact Award is presented to an Alberta based individual or team that has led, or significantly contributed to a technological innovation that has resulted in a positive impact on society.

Outstanding Leadership in Alberta Science

The Outstanding Leadership in Alberta Science Award is presented to an individual or team that has led, or significantly contributed to a scientific innovation or breakthrough.

Outstanding Commercial Achievement in Alberta Science and Technology

This award recognizes a company that has demonstrated outstanding entrepreneurial achievement with measurable results in a science and technology related business.

Outstanding Contribution to the Alberta Science and Technology Community

The Outstanding Contribution to the Alberta Science and Technology Community Award is ASTECH's most prestigious award and is presented to an individual who has made extensive and tangible contributions to the Alberta science and technology community in education, public awareness and/or ambassadorship and has facilitated its growth in areas such as infrastructure, finance and strategic partnering, and technology transfer.

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ASTech Foundation

Education & Awareness

Dr. Mary Anne Moser
Schulich School of Engineering
University of Calgary
Founder and Director, Science Communications Program at the Banff Centre

Dr. Mary Anne Moser

Creative communication, collaboration key to translating passion for science

Dr. Mary Anne Moser makes no apologies for science; instead her mission is to celebrate her passion for science and share that passion with as many people as she can. That's why in 2005 she founded the annual two-week Science Communications Program at the Banff Centre, for scientists and communicators.

"I want to engage the public by helping science communicators try new ways of talking about science," she explains. "It's way beyond using lay language. It's about using art and culture, like television, stage and poetry to think about science in creative ways. In a nutshell, we're building a community of creative science communicators through the program."

To date about 100 professionals from around the world have come through the program, which has a stellar faculty including award-winning television and radio producers and magazine editors. Dr. Moser is also Founder and Chair of Iron Science Teacher, a Canada-wide challenge to encourage innovation in science education.

She is in the midst of collaborating with several Calgary and Alberta institutions to organize an annual arts and engineering festival called Beakerhead, to be launched at the Calgary Stampede in 2012.

In all of her endeavours, she asks the question "Why should anyone care about this?" With this question informing her actions, Dr. Moser has become one of Alberta's most creative leaders in advancing science and engineering public awareness and has helped bring Alberta's science to the national and international stage.

Let's Talk Science at the University of Alberta

Alberta students connect with young researchers and learn about science

Thousands of young Albertans have a better understanding of science, its impact on their world and what science related career options exist for them because of the Let's Talk Science at the University of Alberta.

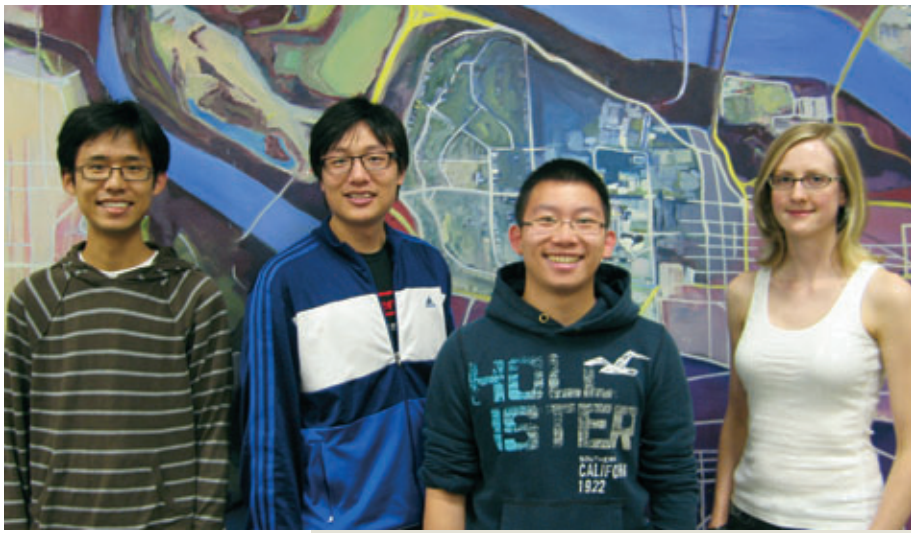
Let's Talk Science relies on graduate students to organize and deliver its programs, allowing it to have a huge impact for relatively little investment.

"It brings young Albertans into contact with actual science and engineering researchers who bring real world experience with leading-edge science and technology research into classrooms and community centres," says Eric Loo, Let's Talk Science Coordinator and PhD candidate.

"The U of A group has taken the national model, which started in 1993, and adapted it to support the Alberta educational curriculum and highlight Alberta's unique opportunities for science-related careers," explains Jeremy Bau, Let's Talk Science Coordinator and PhD candidate. The U of A group focuses on subjects like geology and nanoscience, both strengths of the university.

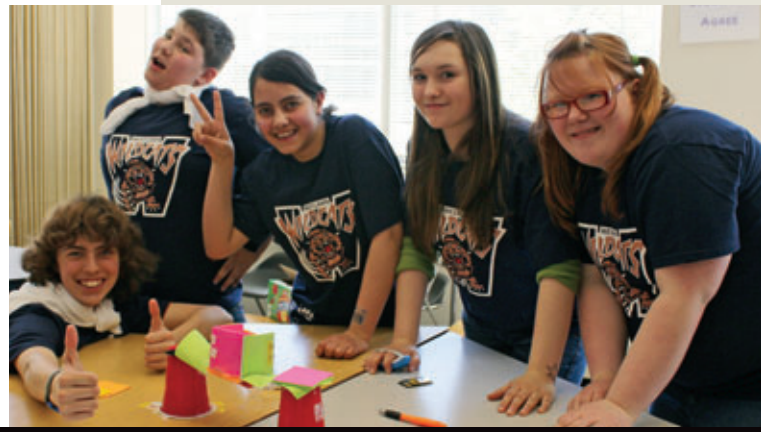
Participating in Let's Talk Science not only engages elementary and high school students in science, it has a positive impact on the volunteer graduate students who organize and present the activities. This year, the 65 U of A graduate student volunteers took the opportunity to improve their communication, teaching, organization and leadership skills.

The variety of learning opportunities, impact for money spent, and a willingness to provide creative programming to students from rural to inner-city Alberta make this an exemplary public awareness program.



l to r: Jeremy Bau, Eric Loo, Andrew Locke, Stefanie Vogt
Missing: Amy Nixon, Jennifer Zwicker, Jason Dyck

Let's Talk Science
Eric Loo
Let's Talk Science Coordinator



Team "Wild Cats" showing off their bridge at the All Science Challenge 2010 at the University of Alberta

I to r: Dan Gies - Artist; Emily Paige; Arlene Ponting - CEO; Larry Payne - Board Member; Linda Palladino - Board Chair; Brent Bawel - Project Manager; Barbara Conkie - Board Vice Chair

Do You Know What Nano Means?
Science Alberta Foundation

Do You Know What Nano Means?

Animated Online Video – Science Alberta Foundation

Alberta on red carpet internationally because of small organization's big vision

A small team at Science Alberta Foundation won big at an international competition with an animation about a very small-scale technology — nanotechnology. Do You Know What Nano Means? was chosen for the 15th Annual Webby Award, the leading international award for excellence on the web.

As a result of the organization's prestigious award, visits to the Alberta-based wonderville.ca website have increased, and Do You Know What Nano Means? has been viewed about 13,000 times by people from 114 countries.

The success of the animation has made it clear to Dr. Ponting and her colleagues that they've got a winning concept.

"In a world of sound bites and multi-tasking, these short animations are powerful learning pieces," she says. "I think we've hit the sweet spot of getting interesting science facts out there in a way that's embraced and loved." She adds that kids love to learn visually and adults, too, have responded enthusiastically to the animation.

Science Alberta Foundation consists of 15 individuals who, along with an extended team of creative talent, in 2009/2010 alone provided science programming to nearly 800,000 individuals, reaching 218 Alberta communities. The organization embodies the spirit of nano — "small is the new big." The win at the Webby's puts Alberta on the red carpet, while playing a vital role in increasing public awareness of the benefits of science and technology and enhancing the understanding of science and technology in the province and around the world.

Andrew Czarnietzki

3D Interactive Inc.
Don Hauck (not pictured)
Founder and President

3D Interactive Inc.

Alberta company innovates video game technology for industrial training

3D Interactive Inc. (3DI) of Edmonton, Alberta, is gaining a foothold in many industries internationally because of its creativity and innovative use of leading-edge game-based technologies for industrial training and visualization.

The world's largest industries, including mining, energy and construction are increasingly using simulation-based training for young workers entering these industries. These new workers grew up with video games and are naturally attracted to interactive computer-based systems, rather than text based learning.

"Alberta has one of the highest concentrations of heavy equipment in the world," explains 3DI Founder and President Don Hauck. He started the company in 1995. "Industry is recognizing the long-term advantages of having a workforce trained to operate large and dangerous equipment as efficiently and safely as possible."

3DI's technical team comprises engineers, industrial designers, programmers, 3D graphic artists, and artificial intelligence and gaming specialists. They design and create high-fidelity, physics-enabled digital versions of industrial equipment that looks, feels, and performs like the actual equipment.

At the core of 3DI's development platform is the Epic® Unreal™ Engine 3, one of the most advanced development platforms available, known for cutting-edge graphics and superior development tools.

3DI also developed its own pureLIGHT lighting system that has provided a significant advantage in fine tuning lighting and complex reflections within virtual industrial environments.

"We are raising the bar in terms of physical and training realism, to enhance safety in industrial settings," says Development Director Danielle Enns. "We want to make this kind of technology-based training pervasive in Alberta and worldwide."

Mary E. Hofstetter
President and CEO
The Banff Centre

Mary E. Hofstetter

Inspired leader creates international science and research hub at The Banff Centre

As president and CEO of The Banff Centre, Mary Hofstetter, is an effective advocate for Alberta science and technology.

She was instrumental in locating the Pacific Institute of Mathematical Sciences to The Banff Centre. The Banff International Research Station (BIRS) for Mathematical Innovation and Discovery, has brought together teams of leading mathematicians from around the globe to research, discuss and lecture.

For Ms. Hofstetter, who has been involved in arts and culture in post-secondary institutions throughout her career, BIRS reinforces her belief that artists and scientists are linked by their creativity.

"The Banff Centre is uniquely positioned to build bridges between the arts and sciences and encourage creative foment," she says. To assist that creative exchange Ms. Hofstetter implemented cross-disciplinary events and social opportunities for artists and scientists to mingle.

BIRS is moving into a building dedicated to the program, which will allow lectures, debates and dialogues to be live-streamed globally, taking the program and The Banff Centre to institutions around the world.

Among her many achievements, Ms. Hofstetter also established a separate Office of Research at The Banff Centre. As a result, a number of the Arts and Culture programs at the Banff Centre are now aligned with research activities and interests.

"We have become a catalyst for inquiry and creativity, and we've enriched the cultural, social and economic wellbeing of the province and the country," Ms. Hofstetter explains.

Exemplary Ambassadors make science accessible

Tim Griffin
President and CEO

Userful Corporation

Software company makes an impact by helping kids connect with the world

An Alberta-based software company is performing a sleight-of-hand — turning one computer into ten, and changing the lives of millions of children with installations in over 75,000 schools in 100 countries.

"Our software helps governments deploy two to three times more computers for the same budget dollars, giving a leg up in life to kids who wouldn't otherwise have access to a computer," says Userful Corporation's President and CEO Tim Griffin. "They now can have internet access and can learn anything that they are interested in. Improving the education of two to three times more kids has a huge and long lasting social impact."

Userful's multi-station platform allows up to 10 users to share a single computer, reducing hardware costs by up to 80 per cent, and required infrastructure — power plugs, cabling, energy costs, etc. — by a factor of 10 as compared to a traditional PC-per-seat solution.

Additionally expensive software costs are cut to zero because Userful includes the free Linux operating system and application software along with every seat sold. Governments globally are looking to move to Linux due to the massive long-term economic advantages gained by broad scale adoption of the open source operating system within their country.

Most of the company's products go to international markets. But with almost all of its sales income directed to hiring more staff, mostly in research and development, Userful has made a significant contribution to diversifying the Alberta economy.

Technology

Dr. Janet A. W. Elliott
Professor, University of Alberta

Dr. Janet A. W. Elliott

Groundbreaking researcher opens up new frontiers in science

Recognized for her contributions to the physical and life sciences — in addition to engineering — Dr. Janet Elliott is an unparalleled research leader at the University of Alberta, in Canada and internationally. She has created new paradigms for interdisciplinary and multidisciplinary research in physics, mathematics, biology and physical chemistry. She has applied these in diverse areas including fundamental fluid and surface science, medicine and industrial chemical engineering.

Her groundbreaking research involves the development and application of thermodynamics, which has opened up new frontiers in cryobiology, quantum statistical thermodynamics, interfacial transport, nanoscale materials and space physical sciences.

She is a world-recognized expert in interfacial phenomena in microgravity fluid science. She was one of the first 100 Canadians to fly on NASA's KC-135 parabolic flight aircraft.

Dr. Elliott's research, applied to the cryopreservation field, will be instrumental in making cartilage transplants more available in Canada. Currently transplants are limited by the short time frame the tissue is viable. Dr. Elliott works with what she describes as "a world-class cryopreservation group" at the U of A that includes medical biophysicists, surgeons, and engineers.

Creative collaborations open new frontiers

Dr. Janet Ronsky

Influential leader proud to contribute to Alberta science legacy

Dr. Janet Ronsky is a strong ambassador for Alberta and has helped to raise the profile of science and technology within Alberta, Canada and internationally.

From early in her career, the professor in the Department of Mechanical and Manufacturing Engineering in the Schulich School of Engineering at the University of Calgary, has had a passion for engaging individuals in science, engineering and technology. She has influenced many students through her teaching and mentoring.

Responding to student demand, Dr. Ronsky was instrumental in establishing the graduate biomedical engineering (BME) program in 1998 and the undergraduate BME specialization in 2003. She also created the Centre for Bioengineering Research and Education (CBRE) at the U of C, one of the first in Canada, and the model for numerous other programs in the country.

Dr. Ronsky promotes interdisciplinary research and development activities and plays an integral role in the U of C BME executive committee, developing planning and strategic documents and initiatives.

She is recognized for advancing discoveries in the areas of knee joint mechanics, combining medical imaging with numerical modeling and novel experimental methods to uncover mechanisms relating to joint degeneration — including reducing radiation in adolescents with spinal deformities.

Dr. Ronsky has served on several prestigious committees that drive research and innovation funding direction, policy and implementation.

"I'm proud to contribute to diversifying the Alberta economy through science and technology, so we continue to be known nationally and internationally as leaders in BME. That's a really important legacy," she says.

Dr. Janet Ronsky

Professor, Department of Mechanical and Manufacturing Engineering, Schulich School of Engineering with a joint appointment in the Faculty of Kinesiology

University of Calgary

Canada Research Chair in Biomedical Engineering (07/2001 – 07/2011)

Director, Biovantage Alberta Ingenuity Centre

Director, Zymetrix - the Bose Biomaterials and Tissue Engineering Technology Development Centre

Dr. Sheelagh Carpendale
Professor, Department of Computer Science, University of Calgary
Director, Computational Media Design
Canada Research Chair, Information Visualization
Industrial Research Chair, Interactive Technologies

Dr. Sheelagh Carpendale

Novel tabletop technologies place Alberta as interactive visualization research hub

Dr. Sheelagh Carpendale is an internationally renowned researcher in information visualization and multi-touch interaction. Her work draws upon her combined backgrounds in fine arts and in computer science.

"I saw visualization as a way of working with information that makes it more accessible to all people — from scientists and information analysts, to decision makers and the general public," says Dr. Carpendale, a professor in the University of Calgary's Department of Computer Science.

Her research combines fundamental advances in information visualization with innovative new interaction techniques. These approaches embed technology in people's work and social practices to aid information work and promote collaboration.

About five years ago, Dr. Carpendale brought her pioneering work on interaction models for tabletop displays to Calgary's SMART Technologies. SMART saw potential in tabletop technologies for educational, entertainment and business applications.

Her tabletop interaction research triggered SMART's early start in this direction, which has contributed to their current position as the leader in the interactive tabletop market.

Recently, Dr. Carpendale's research strengths and leadership have led researchers from the U.S. to suggest Alberta as the place to help the establishment of nation-wide interactive visualization research in Canada.

Dr. Carpendale's research is a significant part of the international revitalization of tabletop research, helping put Alberta on the map as a human-computer interaction research destination.

Kelly Goss

Leadership inspired by desire to make things better

Whatever Kelly Goss chooses to be involved with, she finds her way into a leadership role. She believes that the only way to affect any change is to get deeply involved with the process, and to make those changes from within. When the PhD candidate in Electrical Engineering at the University of Calgary sees something that is wrong or could be operating better, she gets involved.

Ms. Goss's leadership, entrepreneurship and initiative is exemplified by her implementation of the first U of C Graduate Student Research Conference. She began with the vision during her tenure as the Vice President Academic of the Graduate Student's Association (GSA). She was motivated to improve the graduate student experience. She saw graduate students working in isolation, with at most a few colleagues within their own specialization.

"One of the major needs of graduate students was a sense of academic community and specifically an interdisciplinary community," she says. "I envisioned creating a community built on our common area — research — to create a graduate research conference where we could learn about each other and build bridges with industry." About 500 students attended the successful conference.

In her other service pursuits Ms. Goss has been no less effective. She has worked on several initiatives, such as starting a university-wide process to have an academic ombudsman; and worked with the university administration to get another career advisor, among several other worthy initiatives.

Kelly Goss
PhD Candidate in Electrical Engineering
University of Calgary

Dr. Don Kjosness
President, CEO, Director, CapitalRoad Foundation
Director, Past Chair, TELUS World of Science — Calgary

Dr. Don Kjosness

Ambassador believes in contributing to the community

A lifelong interest in science has driven Dr. Don Kjosness to be an ambassador for the science and technology sector provincially, nationally and internationally in technology commercialization, education and public awareness.

During his term as Board Chair of TELUS World of Science — Calgary and as chair of the New Science Centre committee, Dr. Kjosness and his colleagues did critical fundraising and planning that led to the construction of this $160-million landmark in Calgary with the vision to provide science and technology awareness throughout southern Alberta.

Dr. Kjosness's work with the new science centre project will be a permanent legacy of the importance of innovation to our culture and provide ongoing education and public awareness of science and technology issues to youth.

"I believe in being involved in things that are important to the community," he says. "The science centre is lasting in terms of substance and sustainability. I like to feel I've contributed to that."

Dr. Kjosness's diligence, leadership and vision have led to the current successes of CapitalRoad, Canada's leading not-for-profit organizer of internationally important events such as Banff Venture Forum and the Canadian Financing Forum. He has been recognized nationally and internationally for his work in addressing the critical access to capital issue that plagues small and medium sized enterprises. And he has facilitated the growth of the Alberta science and technology community by providing the essential infrastructure necessary for the development of technology based businesses.

Mobile Office Initiative

Technology on-the-go provides results that benefit field workers and clients

Over the past 10 years, Sustainable Resource Development (SRD) — responsible for the management of Alberta's public land, forestry and fish and wildlife resources — has been faced with unprecedented demand for the use of Crown land and its natural resources. Staff were spending increasing amounts of time reconciling hard copy files with digital data files, leaving less time for completing critical approvals, field audits, inspections, surveys and enforcement.

The Mobile Office Initiative (MOI) combines hardware, technology and data into an efficient and effective solution. The MOI allows remote access to aggregated digital information via a ruggedized laptop with extraordinary capabilities.

"Access to mobile, accurate, timely information is a critical component in supporting the needs and expectations of SRD's field operations to provide better service and real benefits to clients," explains George Robertson, Land and Range Manager, Woodlands Area.

By moving decision-making to the field, resource managers are able to provide unparalleled service to clients resulting in enhanced productivity for both government and industry. Timely, responsive feedback on industry plans, approvals or compliance monitoring, results in improved, more environmentally sustainable access to resources. This translates into positive impacts to industry's economic and environmental performance.

"The Mobile Office Initiative demonstrates Alberta's commitment to our natural heritage through the use of innovative management tools," Mr. Robertson says. "An added bonus is that staff have greater job satisfaction from knowing they are doing a better job."

Dennis Marycz

Mobile Office Initiative
George Robertson (not pictured)
Land and Range Manager, Woodlands Area — Whitecourt
Sustainable Resource Development
Government of Alberta

Dr. Naser El-Sheimy, PEng, CRC
Professor and Canada Research Chair
Scientific Director, TECTERRA
CEO, Trusted Positioning Inc.
Department of Geomatics Engineering, University of Calgary
President, International Society for Photogrammetry and Remote Sensing (ISPRS) Commission I on Sensors and Platforms

Dr. Naser El-Sheimy

Professor makes major contributions to geomatics innovation

Dr. El-Sheimy is a professor in geomatics engineering in the Schulich School of Engineering at the University of Calgary and a Canada Research Chair in Mobile Multi-Sensor Geomatics. He leads a team of between 15 and 25 researchers and manages funds of $800,000 annually for research and development of geomatics systems for navigation, mapping and GIS (geographic information system) applications.

He led the establishment of TECTERRA, a nonprofit organization that invests in and supports development and commercialization of geomatics technology across Canada.

He is also CEO of Trusted Positioning Inc. (TPI), a start-up company from the University of Calgary. The company has developed an innovative technology platform called the Trusted Positioning Platform (TPP) that harnesses the potential of low-cost sensors. It provides enhanced navigation and positioning technology, products and services that improve on existing navigation and positioning products, and deliver reliable and accurate navigation and positioning indoors and outdoors, underground and undersea and while walking or driving.

Throughout his career, Dr. El-Sheimy has made major and sustained contributions to the development, dissemination and commercialization of mobile mapping and integrated navigation system technology in Canada and internationally. He hopes to further contribute to better manage the planet's natural resources by building observation systems to monitor forest fires, detect climate change and pollutions and track endangered species.

Energy & Environment

Dr. Kevin Moran

Technology reduces environmental impact and creates new Alberta industry

Dr. Kevin Moran has been a key player in developing a process that has the potential to reduce the environmental impact of oil sands tailings, while providing a positive economic benefit.

Dr. Moran is Vice President for Process Development at Titanium Corp. Inc. (TIC). His innovative technologies reduce the losses of hydrocarbon solvent used in the process and pays for itself by increasing the recovery of saleable bitumen and zircon from mineable oil sands.

The TIC technology will significantly reduce the volatile organic compounds in tailings impoundments and residual bitumen. Reducing these and other toxins in process-affected water will enable air quality improvements and large-scale water treatment for eventual release back into the open environment. This will allow more prompt reclamation of disturbed lands and reduce the long-term liability of earth dam structures holding elevated water inventories.

TIC has six patents or applications to protect the technologies, which are sophisticated takes on conventional operations. Dr. Moran's process will recover over 70 per cent of the bitumen lost in tailings and about 95 per cent of the contained solvent. TIC has invested over $30 million on the development of the process.

TIC estimates that combined revenue from the sale of products that can be recovered from oil sands froth treatment tailings ranges from $400 million to $600 million.

"This technology enables Alberta as a world-scale producer of zircon," says Dr. Moran. Canada doesn't currently produce zircon, so this represents a great opportunity for growth and diversification of the Alberta economy."

Dr. Kevin Moran
VP Process Development,
Titanium Corporation Inc.

University of Calgary Solar Team

Next generation of leaders use hands-on learning to promote alternative technology

The University of Calgary Solar Team (Solar Team) endeavours to advance and discover the potential of alternative energy technologies. The team's mission is to use their increased understanding from the construction and racing of the Schulich Axiom solar car to contribute to innovation and ingenuity in Alberta, while educating and captivating people in the community.

Founded in 2004, the Schulich Axiom Project is the third-generation solar car designed, built, operated and managed by a multi-faculty volunteer team of U of C students. The Solar Team has sponsorships from a variety of foundations and energy corporations. Most of the 40 Solar Team members are undergraduate students from an array of faculties.

"It's more than just the design, construction and testing of the Axiom," says Business Manager and Co-Chair Brandon Heenan. "Students run the business of the team, the logistics and the sponsorships. We are the future leaders in technology and innovation, so this is giving us a chance to work within a team to see how things work in the real world."

One of the key mandates of the solar car program is to encourage the next generation of scientists and engineers through school visits and appearances at public events. Twice monthly throughout the school year, the team visits elementary and junior high schools in the Calgary area. The focus of the visits is the solar car, but the real message is that science and technology are great career choices.

University of Calgary Solar Team
Brandon Heenan
Business Manager and Project Co-Chair

Alberta is changing global environmental stewardship

Dr. David Manz

Calgary engineer's innovative water filter saves lives in the developing world

Dr. David Manz
Adjunct Professor, Environmental Engineering, University of Calgary
VP Marketing and Product Development, Oasis Filter International Ltd.

According to the United Nations, more than one billion people worldwide do not have access to enough safe water for drinking, food preparation, personal hygiene, household hygiene and sanitation. Dr. David Manz, a former Alberta environmental engineering professor at the University of Calgary, invented the BioSand Water Filter technology, a slow sand filtration system to effectively and affordably treat available water supplies for human use at the household level.

"The worldwide success and sustainability of the BioSand Water Filter is a direct result of its effectiveness, low cost, ability to be constructed locally, ease of use and cultural acceptance," Dr. Manz says. "It is probable that today up to five million people are being served by the BioSand Water Filters technology and hundreds of the units are being constructed each day."

It has proven effective in removing waterborne pathogens and other disease-causing organisms and has reduced diarrhoeal diseases in communities in the Dominican Republic, Honduras, Ghana and Cambodia by 40 to 50 per cent. The BioSand Water Filter has gained positive international recognition by major multi-lateral organizations such as the World Health Organization and has become an invaluable tool for international relief agencies and technical institutes providing improved water quality in developing countries.

"I want this system to keep spreading until we don't have this water issue anymore," Dr. Manz says.

Dr. Wayne Brown

Entrepreneurial inventor helps heavy oil industry take a huge step forward

Dr. Wayne Brown
Co-Founder, CTO
ETX Systems Inc.

In his career in chemical engineering and biotechnology, Dr. Wayne Brown is driven by the creative process of finding elegant solutions that have eluded others.

The most recent achievement of Dr. Brown's, Chief Technical Officer of ETX Systems Inc., is the innovative ETX Cross-flow Coking technology. The IYQ process developed by ETX represents a huge step forward for heavy oil upgrading and promises to have a dramatic impact in the field of heavy oil upgrading and the Alberta economy.

Dr. Brown attributes the success of the project to the many public and private funders, industry, and public and individual support.

The IYQ Upgrading reactor design allows the gas and liquid phase dynamics to be tuned independently. Both yield and quality benefits translate into a reduced environmental footprint — 9 per cent less feedstock is required to produce a barrel of upgraded product in this production step, which has by far the largest environmental footprint of all the steps required to bring the liquids to market.

"Whatever solution you come up with has to be economical to be adopted," Dr. Brown explains. "Our invention doesn't compromise on any of the pillars needed to get the technology accepted. It efficiently produces energy, it's better for the environment and there's economic incentive for companies to want to adopt it. The biggest producers have called our invention revolutionary. This gives us confidence."

Sustainable Energy Technologies Inc.

Brent Harris
Founder and CTO

Innovative technology brings solar power to the mainstream

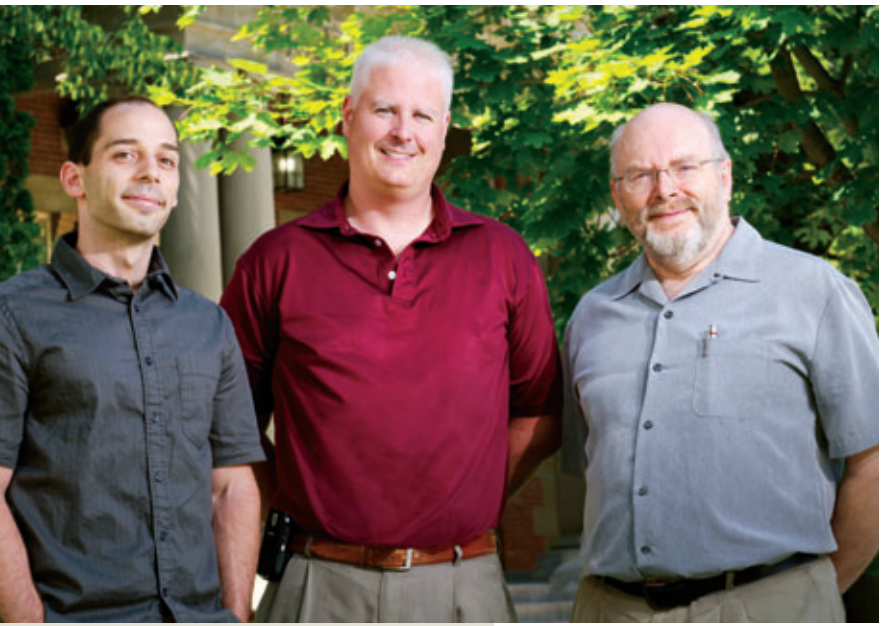
Under the leadership of co-founder and CTO Brent Harris, Sustainable Energy Technologies Inc.'s (SET) products and technologies have proven that solar electricity in rooftop and building integrated applications can be cost competitive with electricity from the power grid.

"Solar power has always been a very interesting energy alternative to non-renewable resources," Mr. Harris explains. "But there have been price challenges. In the last few years the cost of the technology has dropped substantially and now we are bringing solar to the mainstream as a viable and attractive renewable energy source." He stresses that SET's SUNERGY grid-tie photovoltaic (PV) inverter technology is not a specialty product. He calls it "an appliance" that is now accessible to the mainstream.

The beauty of SET's innovation is that each cell works independently of each other in what is known as a "massively parallel" system. SUNERGY inverters push the boundaries of what is known in the solar industry by removing the barriers created through traditional system design.

"As jurisdictions become interested in cutting energy costs, the demand for solar PV will continue to increase," Mr. Harris says. "Installers are looking for easy, affordable, simple systems whose components are perfectly matched with each other and have high performance under a variety of conditions."

SET is working with researchers at the University of Alberta to advance the technology and allow SET to manufacture the SUNERGY inverter at lower cost at a lower weight, without compromising on efficiency or performance.



I to r: Mr. Jae Ogilvie, University of New Brunswick; Dr. Barry White, Alberta Sustainable Resource Development; Dr. Paul Arp, University of New Brunswick.

Dr. Barry White
Forest Management Specialist
Alberta Sustainable Resource Development

Alberta's Wet Areas Mapping Initiative

Partnership produces innovation for improved environmental stewardship

Traditional mapping of water in landscapes results in capturing only major water bodies. But the unseen, near-surface wet areas — the water table and small water channels that can result in unexpected costs, delays or environmental damage — are not captured. The Wet Areas Mapping (WAM) initiative takes landscape data from LiDAR (light detection and ranging) derived digital elevation models of the earth's surface, at one-metre resolution. It produces datasets in a geographic information system (GIS) that reveal highly accurate hydrological features.

"Government and industry have a new technology platform," says Dr. Barry White, Forest Management Specialist at Alberta Sustainable Resource Development (ASRD). "It reduces industry costs in terms of land management, it allows the Alberta government to increase efficiencies and streamline policies and practices, and it provides an innovative platform that a wide variety of disciplines can build on."

The WAM initiative is a partnership led by Dr. White that took the hydrology science, being developed at the University of New Brunswick's Faculty of Forestry and Environmental Management by Professor Paul Arp and Research Associate Jae Ogilvie, and combined it with a convergence of technological capabilities.

"As a science-based ministry, ASRD recognizes the need to connect the dots from good science, to good policy, to good tools to support improved business practices within government and industry," Dr. White says. "It's not enough for government to establish regulations, it has to enable industries as diverse as construction, forestry and energy by providing a tool so they can be better stewards."

Bio Sciences

There's a Heifer in Your Tank

There's a Heifer in Your Tank

Dr. Frank Robinson, Vice-Provost and Dean of Students, University of Alberta

Dana Penrice, There's a Heifer in Your Tank Program Coordinator

Martin Zuidhof, Associate Professor, Poultry Science, University of Alberta

Program engages the community in agriculture through "edutainment"

'Edutainment' is how Dr. Frank Robinson describes "There's a Heifer in your Tank", a combination of education and entertainment that brings agriculture into the lives of people all over Alberta.

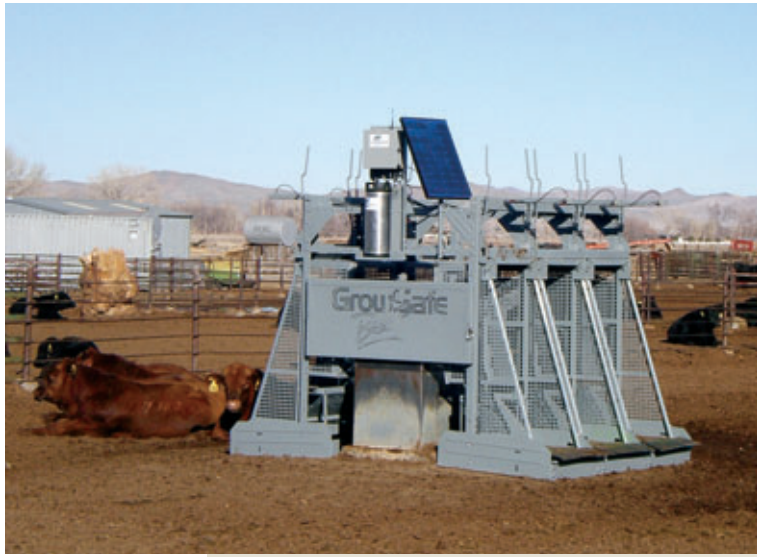
Under the leadership of Dr. Robinson, Vice Provost and Dean of Students at the University of Alberta, what began as one component of an undergraduate animal science course in 2004, has expanded beyond the walls of the university reaching diverse new audiences and addressing new themes. It has engaged thousands of school children and the general public in active learning about the science behind food production and processing while developing the communication skills of hundreds of undergraduate students. It has also developed a comprehensive social media component that reaches countless more people internationally.

The name "There's a Heifer in Your Tank" comes from the first question posed to students in the program: If your car burned methane, how far could you travel on the methane from one cow?

Audiences are engaged through fun skits, video enactments or poems to explain a concept. It is always entertaining, and humour is a prevailing factor. The result is that community members who participate in the program acquire a stronger connection to production and processing of their food and gain a deeper appreciation of animal science.

GrowSafe Systems Ltd.

Technology provides long-term solutions for sustainability in the livestock industry



GrowSafe Systems Ltd.
Camiel Huisma, CEO Founder
Alison Sunstrum, Co-CEO

GrowSafe Systems Ltd. has used true innovation, engineering excellence and an inspired vision for the future to allow Alberta's six-billion-dollar beef industry to address major market forces pressuring its profitability and sustainability. Worldwide, GrowSafe's data acquisition platform innovation is defining the standards by which livestock are measured, managed and treated.

The company's team of multi-disciplinary engineers and scientists — led by CEO and Founder Camiel Huisma — develop intelligent systems that automatically measure biometric and environmental inputs in livestock production, continuously monitoring individual animal health and performance status. Predictive algorithms identify sick and market-ready animals triggering mechanisms that visually identify and treat them without human intervention.

The company's patented technology offers a scientifically proven, unprecedented ability in real-time to enhance animal well-being and product safety; reduce labour, maximize profits, reduce risks; and minimize environmental impact through feed efficient strategies that reduce manure and methane.

"The discovery has been used to implement genetic selection for metabolic efficiency in cattle that will reduce feed input up to 12 per cent and greenhouse gas emissions and manure by as much as 40 per cent," says Co-CEO Alison Sunstrum.

The beef industry is under significant pressure from rising costs, animal disease, antimicrobial resistance, consumer perception about the safety of beef products, trade barriers and traceability requirements, and animal welfare. Until GrowSafe's innovation, no technology existed that could be employed to address these multiple issues confronting profitability of animal agriculture and the industry's very survival.

Leadership and vision contribute to positive changes

Dr. Randall Weselake

Professor and Tier I Canada Research Chair, Agricultural Lipid Biotechnology

Department of Agricultural, Food and Nutritional Science

University of Alberta

Dr. Randall Weselake

World-renowned plant scientist focused on tackling global food and energy demands

While best known for his research toward increasing seed oil content in canola, Dr. Weselake has made important contributions to lipid biochemistry in both plants and animals. He continues to demonstrate creativity and innovation in tackling some of the field's toughest biotechnological challenges.

The professor and Tier I Canada Research Chair in Agricultural Lipid Biotechnology in the Department of Agricultural, Food and Nutritional Science at the University of Alberta has an international reputation as one of Canada's leading lipid scientists.

Canada is a world leader in the production and export of oilseeds, and canola is a major driver of our economy. The seed oil is in demand globally as both an edible and industrial oil. Dr. Weselake's work in this area is of strategic importance to the entire oilseed industry.

"Increasing global population, rising incomes, and the demand for renewable liquid fuels have intensified pressure on the world vegetable oil market," says Dr. Weselake. "Understanding the mechanisms of lipid formation in plants has the potential to increase seed oil content in crops relevant to Alberta and Canada and may also lead to alternative strategies for meeting the food and energy demands of our growing population."

Above all, Dr. Weselake is an exceptional leader, respected around the world as a team-builder who brings together multidisciplinary expertise in large-scale initiatives focused on solving industry-relevant problems.

Dr. David Bressler

Researcher converts biomass for sustainable economy

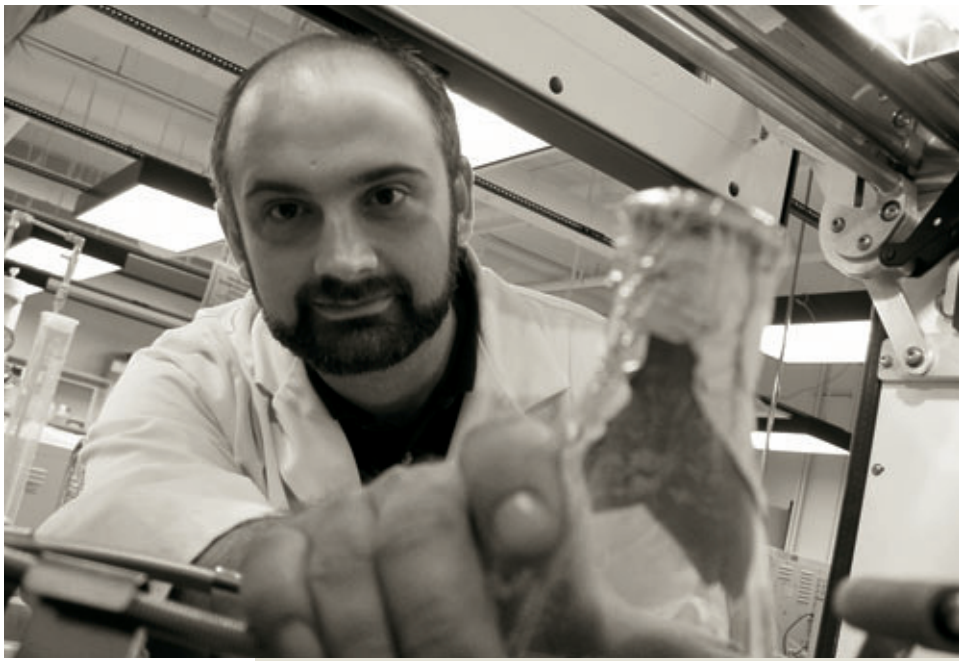
Dr. David Bressler pushes the envelope to utilize the full extent of his many talents to play a pivotal role in bringing Alberta to the forefront in the emerging global bio-industrial sector.

He combines traditional academic disciplines of microbiology, biotechnology and chemical engineering with his experience in government collaborations and policy, industrial development and partnerships. He is a leader in bio-industrial processing and bio-products within the Agricultural, Life & Environmental Sciences faculty at the University of Alberta and throughout Alberta.

He is a primary participant in the Alberta Biorefining Conversions Network (BCN), a major collaborative effort between industry, government and postsecondary institutions in Alberta to establish a multi-million-dollar technology investment in this field.

Dr. Bressler is also an acclaimed researcher. He focuses on innovations in converting biomass to next generation renewable fuels and chemicals to create value added products using thermal, chemical and microbial processing technologies. He has filed several successful patents.

Dr. Bressler believes Alberta needs to create a value-added economy in the province, not by replacing non-renewable energy, but by figuring out how to convert biomass into compatible resources.



Dr. David Bressler
Director, Biorefining Conversions Network
Associate Professor, Biorefining Conversions & Fermentations
Department of Agricultural, Food and Nutritional Sciences
Faculty of Agricultural, Life and Environmental Sciences
University of Alberta

Health

Dr. Patrick M. Boyle

Young leader uses communication to excel in his endeavours

As a recent PhD recipient in the Biomedical Engineering Graduate Program at the University of Calgary, Dr. Patrick Boyle excels in his field of computational physiology. He is also a respected leader among students. In both areas Dr. Boyle employs his exceptional communication skills to forward the causes he believes in and the projects he is involved in.

Dr. Boyle has received national scholarships for his M.Sc. and PhD studies from the Natural Sciences and Engineering Research Council of Canada (NSERC). He was recently awarded a postdoctoral fellowship to support a position at the prestigious Johns Hopkins University, where he will work in one of the leading labs in his field.

He is already contributing significantly to the field. He is the only PhD student whose contributions were accepted in the code base of the Cardiac Arrhythmia Research Package (CARP), the most advanced simulation environment worldwide for cardiac electrophysiology simulation. Dr. Boyle has made significant contributions to this sophisticated simulation tool and is able to communicate them to make a difference.

"I feel that I'm part of building relationships between people who provide healthcare," he explains. "Moving forward we can cross-pollinate ideas, create new knowledge and better solve problems to help patients."

Dr. Boyle is equally skilled at working with his fellow students. He was awarded an Alberta Graduate Citizenship Award in recognition of his outstanding service as a volunteer.

This is just the beginning of a successful career for this talented, dedicated and hard working individual.

Dr. Patrick M. Boyle
Biomedical Engineering Graduate Program
University of Calgary

Circle Cardiovascular Imaging Inc.

Cardiovascular imaging tool saves patients' lives and cardiologists' time

Circle Cardiovascular Imaging Inc.'s (Circle CVI) product suite — cvi42 — saves cardiologists time and patients' lives. It also improves efficiency of the healthcare system by eliminating the need for additional diagnostic procedures. The tools provide a range of functional viewing and measurement tools specialized to facilitate efficient qualitative and quantitative evaluation of cardiac imaging studies. They have been developed by experienced medical imaging professionals and are optimized for clinical workflow. The first software in the product suite, cmr42 was designed for use in Cardiovascular Magnetic Resonance (CMR).

Founded in 2007, the Calgary-based company develops analytical software to meet the needs of the cardiovascular imaging (CVI) community. Circle CVI's software suite — cmr42 —meets the highest industry standards, is based on a deep understanding of users' needs and features outstanding algorithms and functions within a remarkable user interface.

In just three years, the company has become a leader in the global CVI market. "What we are doing is the best in the world and it is being adopted by the best cardiac centres in world," CEO Greg Ogrodnick says. "We have created a tool that helps patients and improves efficiency in the healthcare system."

Circle CVI's products are being used at some of the top heart centers and medical universities in 18 countries worldwide. Back in Alberta, Circle CVI is contributing to diversifying the economy and helping to bring a robust technology sector to the province.

Rising to the healthcare challenge saves lives

Greg Ogrodnick
CEO

Dr. Gerald W. Zamponi

Dr. Gerald W. Zamponi, FRSC, FCAHS
Canada Research Chair
AHFMR Scientist
Professor and Head
Department of Physiology and Pharmacology
University of Calgary

Renowned researcher makes important contributions to science

Dr. Gerald Zamponi is an internationally renowned neuroscientist. His work in the University of Calgary's Department of Physiology and Pharmacology has provided valuable insights into the basis of electrical activity of brain and heart cells. Among many of his contributions is the discovery of a novel class of drug molecules for the treatment of pain that culminated in his cofounding of NeuroMed Pharmaceuticals (now Zalicus Inc.), one of Canada's premier biotechnology success stories.

His research focuses on the mechanisms that control the electrical activities of brain and heart cells, and how they are compromised in disorders such as epilepsy, pain and neurodegenerative disorders such as Alzheimer's disease.

His research programs have resulted in numerous important contributions to basic and applied science, and have been published in the best journals worldwide. For Dr. Zamponi, seeing his work published in prestigious journals is rewarding, but more so is translating the work he and his colleagues do in the lab into tangible benefits for society.

"Pain affects one-third of the population," he explains. "If we can alleviate pain, we help individuals, and we also make an impact on the economic burden that comes from people being in pain. That can make a tremendous difference."

Dr. Zamponi is head of the Department of Physiology and Pharmacology at U of C. He has also trained numerous graduate students and postdoctoral fellows, many of whom have gone on to successful careers in academia and the biotechnology.

Bruce Malkinson

Ian Main, President
Bruce Malkinson, COO

XSENSOR Technology Corporation

Tech company's intelligent sensors part of critical patient care

XSENSOR Technology Corporation is the leading innovator in the field of pressure imaging in the sleep, patient safety and automotive testing businesses.

In 1998 XSENSOR developed a pressure sensor specifically for wheelchairs. Since then the company has grown to provide world-leading pressure imaging technology to hospitals around the world.

"These systems provide vital information to aid health care practitioners to identify excessive pressures that can otherwise lead to skin breakdown and pressure ulcers," says COO Bruce Malkinson. "For individuals at risk, pressure imaging provides information for diagnosis, intervention and prevention that can ensure they maintain or quickly return to their active lifestyle."

XSENSOR's latest development, ForeSite PT Patient Turn Management, the first product using continuous measurement technology, will be used on hospital beds to monitor pressures on patient body surfaces to provide nurses with vital information to improve the effectiveness of patient turning strategies.

XSENSOR commits up to 20 per cent of revenues annually to research and development to advance its core competency — Intelligent and Invisible Sensing — sensors that become part of the environment they were intended to measure and are capable of helping make decisions relevant to the users' needs.

Over the past 15 years XSENSOR's revenue has grown steadily, with the health assessment, personal comfort and automotive engineering markets each contributing approximately one third. With over 30 employees and several key new products in development, XSENSOR is positioned for significant growth in revenue.

ASTech Awards Distinguished Patrons

Agrium is a leading agricultural retailer in the Americas and, a global producer and marketer of agricultural nutrients and industrial products. Agrium produces and markets three primary groups of nutrients: nitrogen, phosphate and potash, as well as controlled release and micronutrient fertilizers. Agrium is proud to note that ESN, their premiere controlled release product, was created here in Alberta. Agrium's strategy is to grow internationally through incremental expansions, acquisitions and, through the development and commercialization of new products and services.

Alberta Innovates is Alberta's aligned research and innovation system consisting of the Alberta Research and Innovation Authority and four publicly funded corporations: Alberta Innovates - Bio Solutions; Alberta Innovates - Energy and Environment Solutions; Alberta Innovates - Health Solutions and Alberta Innovates - Technology Futures. These five new dynamic agencies focus on taking outstanding research and ideas to the next level by creating products, services and processes that will address challenges faced by Albertans and people around the world.

With Alberta's largest technology and intellectual property practice, Bennett Jones LLP is an internationally recognized Canadian based international business law firm focused and founded on principles of professional excellence, integrity, respect and independent thought. Our firm's leadership position is reflected in the law we practice, the groundbreaking work we do, the client relationships we have and the quality of our people.

Bio Alberta is the central voice and the organizing hub for life sciences in Alberta. We are a private, not-for-profit industry association with activities focused on the following areas: advocacy; industry promotion and marketing; increasing access to human resources; business development; and networking opportunities. Alberta's life science industry is a broad field of endeavours encompassing biotechnology, environmental science, medical technology, industrial bioproducts, agriculture biotechnology, bioinformatics and natural health products.

This year marks the 25th anniversary of the Foundation, and since its creation in 1986, we have worked relentlessly to create a future without breast cancer. As the largest national volunteer based organization in Canada, the Canadian Breast Cancer Foundation is dedicated exclusively to working collaboratively to fund, support and advocate for relevant and innovative research, early diagnosis and effective treatment, meaningful education and awareness programs and a positive quality of life for those living with breast cancer.

At Conroy Ross Partners, we offer results-driven Business Advisory and Executive and Professional Search solutions. We act as growth partners for the long term of our clients, colleagues, candidates and the communities where we work. Through our offices in Calgary, Edmonton and Regina as well as a global reach through our partnership with IIC, we assist our clients in building better organizations and we deliver Leadership & Growth solutions to an expanding client base who rely on us as a continuing source of practical innovation that works in the real world.

Dow AgroSciences Canada is a research-based, agricultural sciences company with a diverse product portfolio in all major crops and agricultural segments. We invest in seeds and traits to transform agriculture globally in platforms including canola, soybean, corn, sunflowers and wheat. We are focused on a range of input production traits and value-added quality traits with established field research stations across Canada.

CMG Reservoir Simulation Foundation (Foundation CMG) supports professors and students in leading edge research in computer simulation and modelling flow of liquids and gases and bio-chemical reactions in the earth. Improving technology and reducing negative impacts: C02 sequestration, oil and gas production, in-situ recovery and other processes with advanced 4D dynamic visualization. Foundation CMG is an industry-endowed not-for-profit organization and sponsors researchers and students in universities in Alberta and around the world.

Fugro Data Solutions is part of the global Fugro group of companies and specializes in management of upstream oil and gas data. Fugro Data Solutions provides commercial software and consulting services for master data management systems, stores, copies, archives and outsources the management of petrotechnical data. Globally, Fugro provides the people, equipment, expertise and technology that support the exploration, development, production and transportation of the world's natural resources. Fugro's organizational structure is decentralized and client oriented, delivering a wide range of services in a variety of operating environments and conditions to clients in the oil and gas industry; construction industry; mining sector; and governments. Fugro delivers these services from a global network of offices and facilities with over 255 companies in 55 countries employing over 13,500 staff. Fugro strives to achieve strong market positions based on (in-house) developed technologies, high-value services and a strong international or regional presence and provides its clients with the technical data and information required to design, construct and maintain structures and infrastructure in a safe, reliable and efficient manner.

Government of Alberta The Government of Alberta works collaboratively to achieve its vision of an innovative and prosperous province where Albertans enjoy a high quality of life built on a healthy environment, a competitive economy and vibrant communities. The government is committed to making Alberta the most competitive jurisdiction in North America. Our ongoing support for science and technology will help Alberta maintain a leadership role in the global economy, and attract and develop exceptional researchers, learners, leaders and innovators. Through Alberta Innovates, our system for research and innovation that companies and researchers around the world agree is unique, and our world class post-secondary education system, Campus Alberta, we continue to transform our knowledge driven economy.

Hitachi Data Systems (HDS) provides best-in-class information technologies, services and solutions that deliver compelling customer ROI, unmatched return on assets (ROA) and demonstrable business impact. We help organizations transform raw data into valuable information by making data more accessible and simpler to manage. Our vision is that IT must be virtualized, automated, cloud-ready and sustainable. As the leader in storage virtualization, only Hitachi Data Systems offers a common, virtualized platform for all data and information. By focusing on the customer's perspective as we apply the best hardware, software and services from Hitachi and our partners, we uniquely satisfy our customers' business needs. We are trusted by the world's leading enterprises, including more than 70% of the Fortune 100 and more than 80% of the Fortune Global 100.

KPMG is well qualified to serve the needs of technology companies. We have the necessary resources and in-depth experience to help producers of technology products and services succeed in today's dynamic business environment. As an industry thought leader, we provide long-range vision, astute insights, and innovative professional service strategies to help leading companies stay at the top of their markets. Our role is to help businesses sustain their success by minimizing risk and transforming opportunities into clear and powerful results. KPMG LLP is the Canadian member firm of KPMG International, the coordinating entity for a global network of professional services firms, providing audit, tax, and advisory services, with an industry focus. The aim of KPMG International members' firms is to turn knowledge into value for the benefit of their clients, people, and the capital markets. With nearly 94,000 people worldwide, members firms provide audit, tax, and advisory services for 717 cities in 148 countries.

NAIT is one of the preeminent institutes of technology in Canada, with almost 80,000 registrations worldwide in business, advanced technologies and skilled trades. Known for real-world education and student success, NAIT also engages with business and industry in applied research and innovation and provides corporate training around the world. NAIT has more than 200 credit programs leading to degrees, applied degrees, diplomas and certificates, and is one of the largest apprenticeship trainers in Canada, offering 36 apprenticeship trades with the capacity to train more than 15,000 apprentices annually. The institute offers more than 1,400 continuing education courses in credit and non-credit programs and is home to two unique baccalaureate degrees: The Bachelor of Technology in

Technology Management – the only program of its kind in Alberta – and the Bachelor of Business Administration. The institute has more than 164,000 alumni in 85 countries.

When it comes to innovative technology training, SAIT Polytechnic is in a class of its own. With programming spanning eight broad disciplines, SAIT offers applied degrees, diplomas, certificates, apprenticeships, continuing education and corporate training to more than 77,000 registrants each year.

SAIT works closely with business and industry to ensure its programs are relevant with more than 1,000 industry professionals serving on program advisory committees. As a result of industry's involvement, graduating classes consistently have an employment rate of well over 90%.

SAIT is also a leader in applied research and innovation, providing expertise, with student involvement, in prototype design to commercialization.

It is active in emerging areas of research such as Green Building Technologies, Water Remediation, RFID Applications, Alternative Energy and SMART Grid Systems and Sports & Wellness Engineering.

Established in 1916, SAIT has embarked on the largest expansion in its history: construction of a $445 million Trades and Technology Complex that will add 3,600 fulltime training spaces. A member of Polytechnics Canada, SAIT was named one of Alberta's Top 50 Employers as well as one of Alberta's Best Workplaces for 2010.

Syncrude For 33 years, Syncrude has been responsibly producing crude oil from the oil sands of Alberta. And for 47 years, research and development have played a large role in shaping the company's success. Syncrude now produces enough crude oil to meet 15 per cent of Canada's needs, is a major contributor to Alberta's economy and is poised for further growth that is executed in a sustainable way. Syncrude operates the oil sands industry's only dedicated research and development centre, and, in the last five years alone, has spent more than $200 million to find new or improved ways to operate and reduce its impact on the environment. As well, Syncrude collaborates with many universities and research institutes, and is a founding member of the Canadian Oil Sands Network for Research and Development.

TELUS In support of our philosophy to give where we live, TELUS, our team members and retirees will, by year-end 2011, have contributed $245 million to charitable and not-for-profit organizations and volunteered 4.1 million hours of service to local communities since 2000. Ten TELUS Community Boards across Canada lead TELUS' local philanthropic initiatives. TELUS was honored to be named the most outstanding philanthropic corporation globally for 2010 by the Association of Fundraising Professionals, becoming the first Canadian company to receive this prestigious international recognition.

TRLabs TRLabs is Canada's largest and most industry-invested information and communications technology (ICT) R&D consortium. TRLabs fast tracks innovation to market by working with its industry partners to discover, develop and commercialize technology. TRLabs is also working closely with universities and colleges to transform its traditional R&D agenda toward a market driven commercialization process starting with a market need and including business and technology assessments, applied research, proof of concept, prototyping and technology transfer. TRLabs allows students and graduates from all ICT related disciplines to work with local and global industry players who are interested in innovation. Applied Research, Development and Commercialization activity focuses on three themes: Digital Media; eHealth; and Strategic Sectors. TRLabs also pursues more creative innovation vehicles, which has resulted in Javelin – a Tech Comm and Entrepreneurship program that combines market driven technology ideas, talented recent graduates, and industry mentors to create technology companies.

UNIVERSITY OF ALBERTA The University of Alberta is the largest research institution in the province, serving more than 38,000 students in more than 170 undergraduate and 120 graduate programs. As one of Canada's top five research-intensive universities, it received more than $536 million in sponsored research in 2010-11. The University's international reputation continues to grow with its leading-edge achievements such as the pioneering work of the National Institute for Nanotechnology; the creation of the Li Ka Shing Institute of Virology; and the continuing expansion of the Helmholtz-Alberta Initiative into new areas of collaboration, with interest in the HAI model now being shown by additional countries.

Since its inception in 2004 as a joint venture of the University of Alberta and Edmonton Economic Development Corporation, TEC Edmonton has built a strong reputation for accelerating growth of emerging

technology based companies through its people, networks and facilities. TEC Edmonton has an excellent track record of successfully working with spinoff companies. About 45% of TEC's clients are university spinoffs, and many of these would not have been created or would have survived without TEC's contributions. As of 2010-11, 78 University spinoffs were still operational: the Association of University Technology Managers (AUTM) ranks the University of Alberta 9th out of 561 institutions in North America. Of the 78 University spinoffs, 68 have retained their head offices in the Edmonton region.

Teaching and research excellence define the University of Alberta. The institution leads the country in the number of 3M Teaching Fellowships, which is Canada's top award for undergraduate university teaching, and received four Canada Excellence Research Chairs in 2010, twice as many as any other institution in the country.

UNIVERSITY OF CALGARY

As one of Canada's top research intensive universities, the University of Calgary reflects the community that created and supports it – dynamic, innovative, and energetic. The University of Calgary has significantly increased its research funding to $272 million, and actively participated in 12 Networks of Centres of Excellence. In 2009-2010 government and industry jointly supported more than 135 endowed chairs in total at the University of Calgary, with an allocation of $5.29 million. This keeps us firmly in the Top 10 in Canada.

University of Lethbridge

Since its founding in 1967, the University of Lethbridge has evolved from a small and very successful primarily undergraduate university to a research-intensive, comprehensive university with a focus on both undergraduate and graduate studies. Today the University of Lethbridge provides a personal, supportive learning environment for more than 8,500 students. The university offers relevant, progressive programs and more than 150 degree/program options through six Faculties and Schools: Arts & Science, Education, Fine Arts, Health Sciences, Management and Graduate Studies. Undergraduate and graduate students alike learn with inspired scholars who combine teaching, creativity and research. The strong tradition of research excellence at the University of Lethbridge has secured the institution's place as one of Alberta's primary research universities. The University of Lethbridge is the home of the Canadian Centre for Neuroscience (CCBN) and the inaugural Alberta Heritage Foundation for Medical Research (AHFMR) Polaris Award; the Prentice Institute for Global Population and Economy; the Water Institute for Sustainable Environments; and many of Canada's brightest minds and most accomplished researchers.

Western Economic Diversification Canada / Diversification de l'économie de l'Ouest Canada

Canada

Western Economic Diversification Canada (WD) invested more than $86 million towards 42 innovation projects across the West in 2010-11. This leveraged additional funding of more than $209 million from a variety of partners, including other federal departments and agencies, provincial and municipal governments, universities, research institutes, industry and not-for-profit organizations.

ASTech Awards Adjudication Panel

Technical

Dr. Don Back
Winnova Management

Dr. David Bailey
Genome Alberta

Dr. Murray Gray
University of Alberta

Dr. Hamid Habibi
University of Calgary

Ms. Heather Herring
TOTAL E&P Canada Ltd.

Dr. Alice Hontela
University of Lethbridge

Dr. H. James Hoover
University of Alberta

Mr. Derek Logan
Extreme Engineering

Ms. Myka Osinchuk
Alberta Cancer Foundation

Journalism Panel

Ms. Connie Bryson
Freelance Journalist

Ms. Ruth Kelly
Alberta Venture Magazine

Ms. Kathryn Warden
University of Saskatchewan

Promotional Partners

Alberta's Technology Industry Association

CapitalRoad - Proud operators of Canada's premier access to capital programs

THECIS

Science Alberta Foundation

ASTECH Awards Nominators

ASTECH greatly appreciates the time and effort of the nominators, without whom we would not be able to bring these outstanding stories of innovation and leadership forward.

Mr. Brent Allison
Ms. Janet Annesley
Mr. Rob Beamish
Mr. Peter Beaulieu
Ms. Miranda Beckie
Dr. Miodrag (Mike) Belosevic
Dr. David Bigam
Mrs. Daphne Cheel
Dr. Steven Dew
Ms. Carmella Duchscherer
Dr. Fraser Forbes
Mr. Brad Fournier
Mr. Tyler Groeneveld
Dr. Matthew Hopkins
Ms. Shannon Jones
Dr. Wilf Keller
Dr. Darwin Kiel
Mr. Martin P.J. Kratz
Ms. Shelley Kuipers
Dr. Ellen Macdonald
Ms. Jody MacPherson
Dr. Brian MacVicar
Mr. Aaron Manz
Dr. Jacob Masliyah
Mr. John Masters
Mr. Ken McDonald
Mrs. Ghada Nafie
Mr. John Oxenford
Ms. Ritu Singh
Dr. Susan Skone
Dr. Gregory Taylor
Mr. Steve Vossos
Dr. Carey Williamson
Dr. Moe Win
Mr. David Woynorowski
Dr. V. Wee Yong
Dr. Alex Zahavich

ASTECH Gala Committee

Ryan Radke, Chair
BioAlberta

Duke Anderson
Foundation CMG

Supported by:

Bev Jones, Executive Director, ASTECH Foundation

Joan Currie, Gala Producer, Currie Communications Ltd.

Monique Scott, Administrative Assistant, ASTECH Foundation

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Agrium Inc.

Kathleen Thurber
Alberta Innovates – Health Solutions

Randy Goebel
Alberta Innovates – Technology Futures

Martin Kratz
Bennett Jones LLP

Ryan Radke
BioAlberta

Trish Bronsch
Canadian Breast Cancer Foundation Prairies/NWT Region

Catherine Dyer
Conroy Ross Partners

Tyler Groeneveld
Dow AgroSciences Canada Inc.

Duke Anderson
Foundation CMG

Deryl Williams
Fugro Data Solutions Canada Inc.

Lisa Bowes
Government of Alberta

Robert Burns
HITACHI Data Systems

David Magdalinski
KPMG

Stuart Cullum
NAIT

Alex Zahavich
SAIT Polytechnic

Brenda Crickmore
Syncrude Canada Ltd.

Brent Allison
TELUS

Robert Tasker
TRLabs

Jason Cobb
University of Alberta

Glenn McMurray
University of Calgary

Chris Horbachewski
University of Lethbridge

Doug Maley
Western Economic Diversification Canada

General Representatives of the Science & Technology Community

Roger Pederson

Ed Knash
ATB Financial

John Masters
Innovate Calgary

Peter Kinash
Replicon

Lynn Sutherland

ASTech Awards Winners 1990-2010

Innovation in Industrial Research

1991 Axion Spatial Imaging Ltd.
1991 ITRES Research Limited
1992 Z.I. Probes Inc.
1992 SMART Technologies Inc.
1993 Russell Technologies Inc.
1993 Malibu Engineering Ltd.
1994 Harding Instrument Company Ltd.
1994 New Era Systems Services Ltd.
1995 Epsilon Chemicals
1995 Yellowbird Products Limited
1996 Madenta Communications Inc.
1996 Travis Chemicals Inc.
1997 AltaRex Corp.
1997 Intelligent Databases International Ltd.
1998 Cytovax Biotechnologies Inc.
1998 Canzyme Corporation
1999 Biotools Inc.
1999 Oncolytics Biotech Inc.
2000 SRW Technologies
2000 Mentor Engineering
2001 Russell N.D.E. Systems Inc.
2001 Alterna Technologies Group Inc.
2002 BigBangwidth Inc.
2002 SemBioSys Genetics Inc.
2003 Acrodex Inc.
2003 Spartek Systems Inc.
2004 Virexx Medical Corp.
2004 Canadian Bio-Systems Inc.
2005 XSENSOR Technology Corporation
2006 Quadrise Canada Fuel Systems

ASTech Foundation Special Award

1992 Dr. Richard E. Taylor
1993 Dr. Raymond U. Lemieux
1994 Dr. Lionel E. McLeod
1995 TRLabs
1996 Alberta Research Council
1998 Honorable Peter Lougheed
1999 Mr. Fred A. Stewart
2001 Dr. Robert J. Crawford
2003 Alastair Ross in memoriam
2005 Dr. Roger Butler
2005 Dr. Karl A. Clark
2006 Alvin Gerald Libin
2007 Dr. Margaret-Ann Armour
2008 Institute for Reconstructive Sciences in Medicine (iRSM)

Outstanding Commercial Achievement in Alberta Science and Technology

1990 B&W Technologies Ltd.
1991 INTERA

(< $25M)

1992 Biomira Inc.
1993 Valmet Automation (Canada) Ltd.
1994 Alta Genetics Inc.
1995 Merak Projects Ltd.
1996 Revolve Technologies
1997 SMART Technologies Inc.
1998 Wi-LAN Inc.
1999 EyeWire Inc.
2000 Matrikon
2001 BioWare Corp.
2002 Micalyne Inc.
2003 Upside Software Inc.
2004 Ceapro Inc.
2005 CV Technologies Inc.
2006 Replicon Inc.
2007 Extreme Engineering
2009 Gushor Inc.

(> $25M)

1992 Sherritt Gordon Limited, Metals and Coinage Products Marketing
1993 CS Resources Limited
1994 IDACOM Telecom Division
1995 NOWSCO Well Service Ltd.
1996 Tesco Corporation
1997 PanCanadian Petroleum Ltd.
1998 Syncrude Canada Ltd.
1999 QC Data International Inc.
2001 CSI Wireless Inc.
2002 SMART Technologies Inc.
2003 NOVA Chemicals Corporation
2004 NOVA Chemicals Corporation
2005 NovAtel Inc.
2007 Intuit Canada Ltd.
2008 Hemisphere GPS Inc.
2009 Computer Modelling Group Ltd.

Innovation in Agricultural Science

1999 Dr. Gary R. Stringam
2000 Dr. Prem Kharbanda
2001 Dr. James H. Helm
2002 Dr. Allen Good
2003 Dr. John O'Donovan
2004 Cold Regions Geoenvironmental Research Facility
2005 Dr. Thava Vasanthan and Dr. Feral Temelli
2006 Dr. George Clayton
2007 Dr. Maurice Moloney
2008 Dr. Ronald Howard
2009 Dr. Michael E. Stiles and Dr. Lynn M. McMullen
2010 Dr. Lloyd Dosdall

Innovation in Information and Communications Technology

2008 H. James Hoover and Antony G. Olekshy, University of Alberta and Avra Software Lab
2009 SMART Technologies ULC
2010 Poynt Corporation

Innovation in Oil Sands Research

1992 Dr. Roger Butler
1993 Dr. Jacob Masliyah
1994 Dr. Clifton Shook
1995 Dr. Norbert R. Morgenstern
1996 Dr. Otto P. Strausz
1997 Dr. Murray R. Gray
1998 Dr. Don Scott
1999 Waldemar Maciejewski
2000 Dr. Jan Czarnecki
2001 Dr. Donald Sheeran
2002 Dr. Keng H. Chung
2003 Paraffinic Froth Treatment Technology Commercialization Team
2004 Dr. Hassan Hamza
2005 Rodney Ridley and Patrick Dougan
2006 The In Situ Combustion Research Team
2007 AACI Research Team, ARC
2008 Dr. Hong Zhang
2009 COANDA Research & Development Corporation
2010 Dr. P.V. Jampana and Dr. S.L. Shah

Al-Pac/ASTech Innovation in Integrated Landscape Management

2001 Dr. Stan Boutin
2002 Dr. Brad Stelfox
2003 EMEND Project Partners

Excellence in Science and Technology Journalism:

General Public

1993 Michelle Renne Jones
1994 Mr. Arthur Heller
1996 Scott McKeen
1998 John Acorn
2002 Alberta Venture Magazine
2004 Ed Struzik

Specialized Publications

1992 Mark Lowey
1993 Rae Haaland
1994 Ms. Lois Hammond
1995 Dennis Urquhart
1999 Ms. Connie Bryson
2001 Tony Kryzanowksi
2005 Nickle's New Technology Magazine, Editorial Team
2006 Gregory Harris

Excellence in Science and Technology Public Awareness

1994 Science Alberta Foundation
1995 Praxis Society
1996 The Calgary Science Network
1996 WISEST
1997 Discover 'E' Science Camps
1998 Alberta Women's Science Network
1999 Dinosaur Country Science Camp
2000 Edmonton Space & Science Centre
2001 Operation Minerva
2002 Pi in the Sky
2003 U of A (FGSR) Outreach Program
2004 Biotechnology Training Centre Outreach
2005 Shad Valley
2006 Kananaskis Field Stations and G-8 Legacy Chair in Wildlife Ecology
2007 The Alta Project, Dr. James Pinfold, U of A
2008 The Rothney Astrophysical Observatory
2009 Discover E Engineering & Science Camps
2010 John Acorn

Leaders of Tomorrow

2000 Dr. Rita Aggarwala
2001 Dr. Jocelyn Grozic
2002 Dr. Michael S. Kallos
2002 Talib Rajwani
2003 Tim Poon
2004 Konrad Walus
2005 Ryan Schneider
2006 Sean Hum
2007 Jeeshan Chowdhury
2008 Travis Murdoch
2009 Dr. Shaheed Merani
2010 Peter Gill

Outstanding Achievement in Applied Technology and Innovation

2002 Saskatchewan Research Council - Pipe Flow Technology Centre
2003 Dr. Miodrag Belosevic
2004 Light Up The World Foundation
2005 IMUS Research Team
2007 Conematic Heating Systems Inc.
2008 DIRTT Environmental Solutions
2009 Airdar Inc.
2010 Iunctus Geomatics Corp.

Outstanding Achievement in Environmental Technology and Innovation

2008 Dr. Patrick Hettiaratchi
2009 Embedia Technologies
2010 Tailings Reduction Operations Team, Suncor

Outstanding Contribution to the Alberta Science and Technology Community

1990 Dr. Eric A. Geddes
1991 Dr. Clement Willis Bowman
1992 Dr. Robert Church
1993 Dr. Harry Emmet Gunning
1994 Dr. D. Robert Weir
1995 Dr. John S. Colter
1996 Dr. Thomas P. Keenan
1996 Dr. Martha C. Piper
1997 Mr. William D. Croft
1998 Dr. James W. Murray
1999 Mr. Eric P. Newell
2000 David Mitchell, Q.C.
2001 Dr. William Cochrane
2002 Andrew W. Gilliland
2003 Dr. Matt Spence
2004 Dr. David T. Lynch
2005 Dr. William Bridger
2006 Dr. Cyril M. Kay
2007 Dr. Eldon Smith
2008 Howard E. Tennant
2009 Dr. M. Elizabeth Cannon
2010 Stephen Lougheed
2010 Dr. Dennis Fitzpatrick

Outstanding Leadership in Alberta Science

1991 Dr. Leroy Cogger
1992 Dr. Leonard T. Bruton
1993 Dr. Benno Nigg
1993 Dr. D.L.J. Tyrrell
1994 Dr. Jerry H. Wang
1995 Dr. Robert S. Hodges
1996 Dr. Robert V. Moody
1997 Dr. Timothy R. Mosmann
1998 Dr. Richard E. Peter
1999 Dr. David W. Schindler
2000 The Islet Transplantation Group
2001 Dr. John L. Wallace
2002 Dr. Samuel Weiss
2003 Dr. Brian Sykes
2004 Dr. Bryan Kolb
2005 Dr. Paul Kubes
2006 Dr. Philip Currie
2007 Dr. David Bundle
2008 Tristram Chivers
2009 Dr. Ian Whishaw
2010 Dr. John Vederas

Outstanding Leadership in Alberta Science and Technology

1990 Dr. Ronald G. Micetich

Outstanding Leadership in Alberta Technology

1991 Dr. John Tulip
1992 Dr. Lawrence C.H. Wang
1993 Dr. Brian W. Unger
1994 Dr. Donald B. Robinson
1995 Dr. Karl T. Chuang
1996 Dr. Norman Dovichi
1997 Dr. Maurice M. Moloney
1997 Dr. Antoine A. Noujaim
1998 Dr. Leo A. Behie
1999 Dr. Wayne D. Grover
2000 Larry J. Comeau
2001 Dr. Terry Allen
2002 Dr. D. Jed Harrison
2003 Dr. Michael Brett
2004 Dr. Gerard Lachapelle
2005 Dr. Norman Beaulieu
2006 Alberta Ingenuity Centre for Machine Learning (AICML)
2007 Dr. Garnette Sutherland
2008 Jacob H. Masliyah
2009 Dr. Linda Pilarski
2010 Dr. Robert Edward Burrell

Societal Impact

2008 Madentec Limited
2009 Mustard Seed Street Ministry
2010 Oriented Structural Straw Board, AITF

Lemieux, Dr. Raymond U. First to **synthesize sucrose**, and leader in building carbohydrate chemistry at UofA ▪ **Tyrrell, Dr. D.L.J.** First oral treatment for **hepatitis B** ▪ **The Islet Transplantation Group** The team that perfected the **islet transplant technique** ▪ **Oriented Structural Straw Board, AITF** First developer of oriented strand straw board ▪ **Burrell, Dr. Robert Edward** Visionary transforms nanotechnology into **nanomedicine** ▪ **Sutton, Richard** World leader in reinforcement learning & **artificial intelligence** ▪ **Bruce McNaughton** World leader in neural instrumentation ▪ **Wolfgang Tittel** World leader in **quantum entanglement** for communication security ▪ **Ross Mitchell** World's first image-based biopsy for **brain cancer** ▪ **SMART Technologies Inc.** Invented an interactive **'smart board'** that facilitates collaboration around the world and resulted in being the 2nd largest technology USA IPO in 2010 ($660M) ▪ **Micralyne** World leader **MEMS** and **nano capillary foundry** ▪ **Bioware** World leader in **video gaming** development

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bio alberta — Association for Life Science Industries

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