

SCIENCE contours



UNIVERSITY OF
ALBERTA

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FACULTY OF SCIENCE ALUMNI MAGAZINE

Distinguished Alumni Honoured

The University of Alberta Alumni Association welcomed back more than 2,000 alumni and friends for Reunion 2005. To kick off the festivities, the Alumni Association honoured 34 outstanding alumni at its annual Alumni Recognition Awards.

Presented in four categories, the awards celebrate alumni accomplishments and the recognition they bring to the university. Two of this year's Distinguished Alumni Award recipients are graduates from the Faculty of Science.

Stuart Davis

'39 B.Sc.(Eng), '40 M.Sc.

Dr Stuart Davis, University of Alberta professor emeritus and one of Edmonton's most generous philanthropists, passed away on July 30, 2005 at the age of 88 before receiving his Distinguished Alumni Award. Recognized as a true philanthropist, he generously supported the arts, his community and the university.



Professor emeritus of chemistry at the University of Alberta, Davis earned his PhD at McGill University. In 1942, he was asked to come teach at the University of Alberta for an eight-month appointment. This was the start of what became a 40-year career, which saw him teach thousands of students and help build the university's internationally respected chemistry department. Beyond his academic duties, Davis was instrumental in the design of both the east and west wings of the campus complex now known as the Gunning/Lemieux Chemistry Centre.

Davis was known in the community for his exceptional philanthropy and was often referred to as Edmonton's patron saint of music. When the Francis Winspear Centre for Music outlined plans to purchase an organ, Davis generously gave a gift of \$2 million to help realize the dream.

A strong supporter of the U of A, Davis made a major gift to the Faculty of Science, earmarked to support the Centennial Centre for Interdisciplinary Science (CCIS), a world-class teaching and research facility. An outdoor courtyard, to be named Davis Plaza, will recognize his contribution to the university.

"He was truly one of the most big-hearted people I have ever met," said Gregory Taylor, Dean of the Faculty of Science. "He has been a fixture on campus, and he will surely be missed."

John Acorn

'80 B.Sc., '88 M.Sc.

Affectionately known around the world as the Nature Nut, John Acorn has shared his love for Alberta's entomology and natural history with the world.

He is an internationally known scientist, author and broadcaster whose career has been marked with creativity and a passion for science. The host and creative force behind the popular TV series **Acorn, the Nature Nut**, he has educated and entertained audiences worldwide. As a best-selling author, he has had a huge impact on amateur entomology, and his field guides have earned him numerous awards.

"The Distinguished Alumni Award means a great deal to me," he explains "as my connection to the U of A goes back to a visit I made with my father when I was five to the Strickland Museum."

Not a day has passed since then that he hasn't been directly or indirectly influenced by the assortment of mentors, students, colleagues, books, and specimens that make up "his" part of the U of A.

Acorn spends almost as much time on campus now as he did when he was a student. "I teach as a sessional lecturer in renewable resources, work in the E. H. Strickland Entomology Museum, attend seminars, visit col-



leagues, and meet with students," he comments. So I'd say between a third and a half of my average week is spent on campus."

He is currently working on a paleontological radio program, Deep Alberta, sponsored by the Royal Tyrrell Museum and broadcast on CKUA, with plans to make the scripts into a book. He is also working on a book about Alberta ladybugs and BC butterflies, and continues to travel the continent educating and promoting his passion for all things nature.

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Access to Science Education

As many of you know, the Government of Alberta has made it a priority to improve access to advanced education. Over the next three years, 15,000 new spaces will be added to the post-secondary system. In six years that will double to 30,000 new spaces and by 2020 a total of 60,000 new spaces will be created. The goal is to move Albertans to the highest rate of post-secondary education in the country, and the Faculty of Science can help achieve it.

Undergraduate enrolment in the Faculty has grown by approximately 20% over the past five years - the most dramatic increase of any faculty. This fall we welcomed just over 2,000 new science undergrad students to campus, bringing our overall total to just over 6,075. Our graduate student population climbed just over 1,000. By 2010, the Faculty of Science is expected to accommodate 22% of the University's overall enrolment

increase target of 7,000 students.

However, this pace of growth within the Faculty's current infrastructure is simply unsustainable, and the Centennial Centre for Interdisciplinary Science (CCIS) will provide the space to meet these needs.

Phase I of the CCIS is on schedule for completion in November. Meanwhile our planning for Phase 2 continues. The schematic design report for CCIS Phase II was unanimously approved by the University's Facilities Development Committee (FDC) in September. This report addressed the architectural, structural, mechanical, electrical and other design challenges that we have been facing, and proposes a concept to address those challenges.

It is worth emphasizing that the Schematic Design Report is not a financial plan, but rather an architectural roadmap. This concept will continue to evolve as we move through the design development phase and on to preparation of construction documents, a process that will take us into the new year.



Our fast track schedule for Phase II had us poised (funds permitting) to begin the earliest of construction activities this fall. It is now clear that we will not be able to obtain provincial funding in time to undertake these activities at this time. However, planning will continue with all due haste.

The project remains the University's top capital priority and we continue to hear positive messages from government. We still need to translate this support into a financial commitment before this vision can become reality.

Gregory Taylor
Dean of Science

Looking to the Future: Attracting Outstanding and Diverse Faculty Members to Science

In July of 2005, the Dean of Science appointed an Associate Dean of Science, Diversity. The incumbent, Dr Margaret-Ann Armour writes about the position and her plans, hopes and dreams for it.

'Diversity is Strength'. This phrase is often used to encourage institutions and industries to build teams which reflect the diversity of the community in which they are situated. Why is diversity important in the Faculty of Science at the University of Alberta? We know that to maintain our place as one of the top Canadian Universities and to foster further excellence, we must attract the best students, graduate and undergraduate, and outstanding faculty. Competition among post-secondary institutions is intense. We need to be proactive in attracting the best.

Where are the pools of highly qualified potential faculty and students and how can we access them? Until about 15 years

ago, we were not attracting enough bright young female students into our Faculty. This has changed dramatically, so that 51% of our undergraduates now are women, although the proportion is not evenly spread across the seven Departments that make up the Faculty of Science.

However, in spite of the equality amongst undergraduate numbers, and the increasing proportion of female graduate students, the percentage of women faculty has remained almost constant at about 14% for the past six years. This picture is repeated across North America and in Europe, and much research has been undertaken to uncover why this statistic is not changing.

We all want the 'best' person for the position. But how do we judge who is 'best'? There are many objective criteria in judging the 'best' candidate for an academic position in science, but some criteria are

subjective. For example, are a young man with two pre-school children and a young woman who has one child and is pregnant assessed equally? Is the gentler, less assured yet brilliant young woman at a disadvantage? All of us, women and men, have these biases - it is when we are aware of them and how they are affecting our judgment that we can make allowances for them.

A marked example of unintentional gender bias was described in an article in the *New Scientist*, October 2, 2004. Two researchers at the University of Gothenburg studied fellowship applications to the Swedish Research Council and found that to be judged of equal competence, the women applicants had to have published three more papers in journals such as *Nature* and *Science* than male applicants.

Why is it important to have a diverse faculty? I began with the phrase 'diversity is strength'. Some of our Science

HYRS offers students hands-on research experience

First day on the job, Ciera Darragh was already hard at work in Dr Chris Sturdy's lab, helping with daily lab tasks - like extracting brains.

The Grade 11 student worked in the psychology professor's lab this summer on a project investigating the neural pathways of the brain involved in songbird perception, specifically chickadees. By genetically mapping how the birds learn songs and calls, scientists may be better able to understand how human babies learn language.

Much of Darragh's work has involved preparing the brains of the birds for examination - but the Drayton Valley teen isn't squeamish.

"I learned how to do brain extractions on my first day. It was a little scary at the



Ciera Darragh

first time, but it's really cool," she said, noting that her work also entailed taking beak measurements, gonad measurements and keeping track of weather patterns in Alberta, to identify any correlation with the birds' vocalization

patterns.

While extracting brains and taking gonad measurements may not be everyone's cup of tea, this is an opportunity of a lifetime for the aspiring scientist. Darragh, who hopes to study pediatrics, is one of 20 Grade 11 students from across Northern Alberta who took part in this year's Heritage Youth Researcher Summer Program (HYRS) at the U of A.

The program is funded by the Alberta Heritage Foundation for Medical Research (AHFMR).

In its sixth year, HYRS places 45 bright students in the labs of researchers at the U of A, University of Calgary and the University of Lethbridge.

Departments are already the best in Canada: a reputation we all want to maintain. To do so, we need to attract the most outstanding faculty we can to replace retirees and to fill increasing faculty numbers we anticipate. Women are among these outstanding people and therefore we need to position ourselves to be able to attract and retain them in the Faculty of Science. Outstanding women have a plethora of choice among many of the top Universities around the world; we face tough competition.

As Associate Dean of Science, Diversity, I can work with each Department in the Faculty to look at the wording of advertisements and to help search out highly qualified women and proactively invite them to apply. A personal invitation can tip the balance. When we hire women, there needs to be an institutional climate that is welcoming, so they will stay. Supportive mentorship by senior faculty is a

powerful way to further their potential aspirations, and I am facilitating such a mentorship program that is already in place in our Faculty.

Longer term initiatives include activities to increase the number of female graduate students who aspire to faculty positions. Encouragement by their supervisors to consider an academic career and to help them find postdoctoral placements as a start on this career path can help increase the pool of potential faculty. I plan to arrange workshops for senior women graduate students and post-doctoral fellows to provide further encouragement.

In the May 2005 press release announcing the findings and recommendations of the Harvard Task Forces on Women one of



Dr Margaret-Ann Armour

the co-leaders of the Task Forces, Radcliffe Institute Dean Drew Gilpin Faust said "The Task Forces have produced recommendations that promise to transform not only opportunities for women and underrepresented minorities at Harvard, but the culture of the entire

University community" and President Summers of Harvard added "they [the recommendations] have the power to make Harvard not only more welcoming and diverse, but a stronger and more excellent university overall". If Harvard can do it, so can we at the University of Alberta, and I commit to work as effectively as I can with all of the Departments in the Faculty of Science to recruit and retain an outstanding and diverse faculty.

IBM invests \$10 million in WestGrid computing facilities

A \$10 million gift from IBM will help researchers from the U of A and across Western Canada combat viruses, cure cancer, develop new pharmaceuticals, understand the human mind and even better predict the weather.

The computer giant is donating 128 pSeries processors - worth \$10 million - to the U of A-based WestGrid system. The \$50-million collaborative project provides high-performance computing and multi-media resources to researchers and educators across Western Canada. IBM's gift will further enhance WestGrid's advanced computing resources at the U of A.

"What we are doing here in Canada matches any innovative project of this nature in the world," said Dr Jonathan Schaeffer, professor of computing science and a WestGrid co-principal investigator.

"We are building a grid of advanced computing tools for research with a very

leading edge approach to the way that researchers will be able to power their research."

Essentially, a computing grid is a network of geographically separated computers or computer clusters connected together to function as a single super-computer. They share applications, data, and computational resources. WestGrid helps researchers whose work requires a great deal of computation to complete their calculations much faster than they normally would. The system also provides computer resources to help researchers visually model their data, to better understand and communicate their research.

U of A President Dr Indira Samarasekera said IBM's donation will help the university maintain and expand its reputation as a centre of research excellence.

"The University of Alberta is pleased to offer our researchers access to the world-



class WestGrid computing facilities, which will enable them to maintain their leading role in the international research community," Samarasekera said.

WestGrid is primarily funded by the Canada Foundation for Innovation, the Alberta government, through the Alberta Science and Research Investments Program, the British Columbia Knowledge Development Fund. A number of western universities are partaking in the project, including the U of A, the University of Calgary, the University of Lethbridge and Simon Fraser University.

Canada to invest \$150 million in International Polar Year

The federal government's announcement was enough to warm even the most frost-bitten Arctic researcher: Canada will invest \$150 million over six years to carry out an innovative, interdisciplinary program for International Polar Year (IPY) along with its international partners.

Deputy Prime Minister Anne McLellan was at the University of Alberta, host institution for the Canadian IPY Secretariat, to announce funding that will provide leadership and support for Canada's participation in the upcoming International Polar Year in 2007-2008.

"This International Polar Year will mark the first time in 50 years that so many nations will focus their collective efforts on major questions of science in the Earth's polar regions," McLellan said. "This is our generation's opportunity to move the markers ahead on northern science and research and, as has been done in past International Polar Years, achieve those breakthroughs in knowledge that change forever the way we understand and consider our northern and

Arctic regions."

Dr David Hik, Professor of Biological Sciences and Executive Director of the Canadian IPY Secretariat, said the funding has secured Canada's leadership role in polar research and advanced this unparalleled opportunity for international interdisciplinary collaboration and unprecedented integration of academic, local and traditional knowledge.

"This is the most exciting day in the many years I've been working in the north," Hik said. "There are thousands of people who have been waiting for this, because over the past year there's been a concerted effort by these thousands of researchers across the country and around the world to build this program for IPY and to use this opportunity to enhance science, research and education in these regions."

IPY is an intensive international program of coordinated, interdisciplinary science, research and observation over a 24-month period that will involve more



(L to R): Dr David Hik, Hon. Ethel Blondin-Andrew; Deputy Prime Minister Anne McLellan, Duane Smith

than 30 countries and upwards of 20,000 individual participants from fields spanning the spectrum of earth, atmospheric, biological and social sciences. The most important challenges for Canada that will be investigated are climate change impacts and adaptation, and the health and sustainability of northern communities.

Duane Smith, president of the Inuit Circumpolar Conference, called the north "the bellweather" of climate change, adding that indigenous northern peoples are already experiencing the effects of climate change and that research from IPY could result in solutions to offset its negative impacts on their respective ways of life.

Single molecule transistor could revolutionize electronic miniaturization

Researchers at the University of Alberta have proven the potential for constructing electronic circuitry on a molecular scale, a breakthrough that could shatter the limitations of conventional transistor technology and pave the way for smaller, faster, cheaper microelectronic devices.

The report by National Research Council National Institute of Nanotechnology's Molecular Scale Development Group, led by U of A physics professor and iCORE Chair in Nanoscale Information and Communication Technologies Dr Robert Wolkow, was published in the June 2005 issue of the scientific journal *Nature*.

Wolkow said his team has proven that a single molecule can be controllably charged while all the surrounding molecules remain

neutral, causing it to act as a basic transistor. Transistors control the flow of current in most electronic devices and are combined to form integrated circuits used to make the microprocessors and memory chips that drive everything from computers and cell phones to household appliances.

But where conventional transistors might use a million electrons to switch a current, Wolkow's team was able to control the current through a hydrocarbon molecule using a single atom.

Wolkow emphasized that, while the concept his team tested is a long way from practical application, it undoubtedly fits the



Dr Robert Wolkow

definition of a transistor, which has three terminals - an 'in,' and 'out,' and a control outlet.

While practical nanoscale transistors may be decades away, this concept could circumvent the limits of conventional transistor technology and permit miniaturization on a nanometric scale, said Wolkow.

"Better...faster...cheaper - that's the promise of molecular electronics. In our case, we also have a potentially powerful green technology because of its minimal power and material requirements, and the biodegradable nature of the device."

Wolkow said the lead author of the study, U of A postdoctoral fellow Dr Paul Piva, deserves special mention for championing the research and mustering the expertise of the his collaborators to design the concept and test it "in every way imaginable."

Researchers first in the world to discover the age of oil

University of Alberta geologists have become the first in the world to find a means of accurately determining the age of oil, providing critical information about its formation which will ultimately aid in a better understanding of oil deposits.

Dr David Selby and Dr Robert Creaser from the Department of Earth and Atmospheric Sciences published a paper in the highly-regarded journal *Science* which states that the giant oil sand deposits in Alberta formed 112 million years ago - not 60 million years ago, as previously thought.

The isotope geochemists have used the isotopes of two elements found in trace amounts in oil - rhenium and osmium - to accurately pinpoint when oil formed in the western Canada sedimentary basin, which contains much of the world's oil sands.

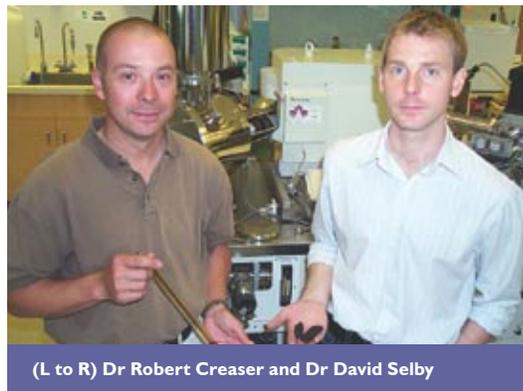
"This is the first time that anyone has ever directly determined an age from oil," explained Creaser, who heads up the U of A's Radiogenic Isotope Facility and is funded by a discovery grant from Science and Engineering Research Canada (NSERC).

"Previously, the time at which oil was

produced from a rock and migrated as a fluid could be deduced from looking at the geologic relationships, looking at the overall history of that sedimentary basin and things like that. But this is the first time there's actually been a direct determination using any isotopic method to try to figure out how old it is."

Isotopes - versions of elements with different atomic masses - can be used to determine the age of substances. The isotopic method used by Selby and Creaser, for instance, is comparable to carbon-dating, in which the rate of decay of a carbon isotope is used to determine the age of organic matter. Using a mass spectrometer, which analyzes the molecular composition of a sample, the researchers spent nearly an entire year examining rhenium and osmium isotopes in large volumes of oil - a meticulous process, says Creaser.

Both researchers emphasized that the research findings will change the way geologists understand the evolution of the basin, which runs from Fort McMurray and



(L to R) Dr Robert Creaser and Dr David Selby

surrounding area through to Peace River. But while the discovery has drawn much media attention, they stress that the discovery will not immediately help geologists find new sources of oil.

Selby, the paper's lead author, emphasized that the finding answers one question, but that many others remain.

"It's part of the puzzle. We need to study the sedimentary basins in detail from a lot of different angles. But this is one angle that we've never been able to assess before, and now we can - so, it's a pretty big step forward in that regard," said Selby, an Alberta Ingenuity Fund Postdoctoral Fellow, who is funded also by the American Chemical Society.

The Alberta Science and Technology Leadership Awards (ASTech) recognize and honour individuals, businesses and institutions that have made significant contributions to the science and technology community. Once again, the Faculty of Science had an outstanding showing of finalists who were selected for their outstanding achievement, innovation and leadership in science and technology.

Outstanding Leadership in Alberta Science Award

This award is presented to an individual or team that has played a leadership role in a scientific innovation or breakthrough.

Finalist: **Dr Robert Wolkow, Department of Physics**
 Principle Investigator, NRC National Institute for Nanotechnology, iCORE Chair

Dr Wolkow has demonstrated a new concept for a transistor made of a single molecule the size of a nanometer (one billionth of a metre) with its conductivity turned on and off by a single electron. Dr Robert Wolkow's groundbreaking discoveries point the way to the creation of smaller, faster and cheaper micro-electronic devices that run everything from traffic lights to cell phones and washing machines.



Dr Robert Wolkow

Outstanding Leadership in Alberta Technology Award

This award is presented to an individual or team that has played a leadership role in a technological innovation or breakthrough.

Finalist: **Alberta Ingenuity Centre for Machine Learning**
 Department of Computing Science

Established in 2002 as one of the first Alberta Ingenuity Research Centres, AICML uses artificial intelligence, computer science and mathematics to solve one of the most pressing problems of the information age: how to distil useful information from the huge volume of data captured by computers. Machine learning provides the tools to extract useful patterns from a sea of data in areas ranging from robot control to web mining.



(L to R): Dr's Dale Schuurmans, Jonathan Schaeffer, Michael Bowling, Rich Sutton, Robert Holte, Russ Greiner

Leaders of Tomorrow

This award is presented to an individual under the age of 30 who has demonstrated qualities, such as leadership potential in science and technology teaching, research or entrepreneurship, that could make him or her a future leader in Alberta's science and technology community.



Dr Michael Bowling

Finalist: **Dr Michael Bowling**
 Department of Computing Science

Dr Bowling has already made his mark in the field of artificial intelligence and machine learning, which involves creating complex sets of instructions by which machines can "learn" or automatically improve their performance through experience. Most practical applications of robotics involve interactions with humans and other robots. This involves incorporating a variety of technologies to give robots abilities such as memory, sensing, communication and ultimately coordinated team behaviour.

Physicist appointed to \$3-million cancer research chair

A physicist appointed to the new Allard Research Chair in Oncology believes there is an "epoch-making scientific revolution" going on in biology and that his basic science skills can be employed in unorthodox ways to battle cancer.



Dr Jack Tuszynski

Trained as a basic scientist with expertise in one of the most fundamental disciplines, physics, Dr Jack Tuszynski finds himself fascinated and engaged in one of the most applied fields - finding ways to combat cancer.

Tuszynski will bring his knowledge of spectroscopy, condensed matter physics, non-linear physics, statistical physics and biophysics to the task of trying to reduce the numbers of lives claimed by cancer. For more than a decade, the physics professor has been exploring, at a fundamental level, protein modeling and pharmacokinetics. Specifically, he's conducted research on tubulin, a protein indispensable for cell division, whose specific variants are over-expressed in cancer.

With detailed knowledge of tubulin's structure at the level of individual atoms, Tuszynski and his team are using computational power to design drugs to combat cancer with reduced side-effects to healthy cells. His team has designed several new chemical structures intended for chemotherapy and is developing new treatment methods in his lab with on-going efforts to refine them.

"I'd like to be able to focus on protein expression in specific types of cancers with a keen eye on understanding the molecular mechanisms behind the development of drug resistance during chemotherapy," he said.

That work will be assisted enormously due to the existence of the extensive tumour bank at the Cross Cancer Institute, he points out, as well as a number of state-of-the-art labs located in the Division of Experimental Oncology.

University

- **Jillian Buriak** (*Chemistry*)
Martha Cook Piper Research Prize
- **Liang Li** (*Chemistry*)
Killam Annual Professorship
- **George Pemberton** (*Earth & Atmospheric Sciences*)
Killam Annual Professorship

National

- **Jillian Buriak** (*Chemistry*)
Rutherford Memorial Medal (Chemistry)
(Royal Society of Canada)
- **Ted Evans** (*Physics*)
J Tuzo Wilson Medal (Canadian
Geophysical Union)
- **Charles Stelck** (*Earth & Atmospheric
Sciences*)
Canadian Petroleum Hall of Fame

International

- **David Bundle** (*Chemistry*)
Claude S. Hudson Award in
Carbohydrate Chemistry (American
Chemical Society)
- **Jillian Buriak** (*Chemistry*)
Fellow of the Royal Society of
Chemistry (UK)

Chemistry prof no stranger to recognition

It has been quite a year for Dr Jillian Buriak. The professor, Canada Research Chair and senior research officer at the National Research Council's National Institute for Nanotechnology received three major accolades all recognizing her outstanding research in the field of nanotechnology.

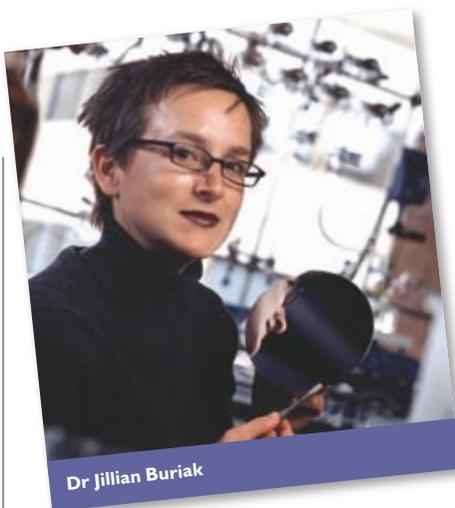
The Royal Society of Canada Rutherford Memorial Medal in Chemistry, named for Lord Rutherford of Nelson in memory of his contribution to nuclear research, is considered the most prestigious award for Canadian chemists. Preference is given to candidates under the age of 40 in recognition of Lord Rutherford's research at a relatively young age, and Buriak is only the second woman in the 25-year history of the award to receive such an honour.

"This was very unexpected for me. I know I was nominated, but I didn't expect to win," said Buriak. "This is a very old award and the award recipient list is filled with distinguished names. It is a shock to be listed next to them."

Dr Martin Cowie, chair of the Department of Chemistry, is equally excited about Buriak's award.

"This is a very prestigious award and is only the second Rutherford Medal ever given out to a U of A researcher. It is a very difficult award to win," said Cowie. Dr Liang Li was the U of A's first Rutherford Medal recipient in 2003.

In less than 10 years, Buriak has become a world leader in nanoscience, materials



Dr Jillian Buriak

research, and catalysis research. She and her team have become internationally recognized for their work in the chemistry of semiconductor surface chemistry, and nanolithography, and for breaking new ground in the development of new classes of soluble metal catalysts for organic synthesis. In addition, they have established themselves as leaders in the domain of silicon and germanium wet surface chemistry and they are extending this work down to the nanoscale.

She also received the U of A's Martha Cook Research Prize, recognizing faculty members who are at an early stage of their careers, enjoy a reputation for original research, and show outstanding promise as researchers.

Most recently, Buriak became a Fellow of the Royal Society of Chemistry (UK), the largest organisation in Europe for advancing the chemical sciences.

Oil pioneer inducted into hall of fame

If the oil industry in Alberta were attributable to a single person, that person might be Dr Charles Stelck. The University of Alberta emeritus professor of geology has been inducted into the Canadian Petroleum Hall of Fame, which honours Canadian oil and gas leaders, pioneers and innovators.



Dr Charles Stelck

Dr Stelck's pioneering research of fossils and stratigraphy in Western Canada's sedimentary basin has proved to be of immeasurable value in the search for oil and gas. As a researcher, he provided numerous oil companies with the ability to achieve a sound basis for exploration and established the geological setting of some of the most important oil fields in Alberta.

His legacy can be seen in the hundreds of University of Alberta geology students who went on to discover much of Alberta's massive oil reserves - a list that reads like a who's who of the petroleum industry.

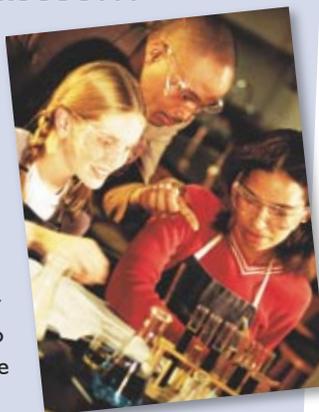
Doug Layer, for instance, was instrumental in the discovery of oil in Devon (Leduc No. 1) a half-century ago, sparking Alberta's oil rush. Later, Dr Stelck's former students Arne Nielsen and Tony Mason discovered the Pembina oil field - the largest pool of oil in Canada. Mr. Nielsen later went on to become president of Mobil Oil.

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Scholarships and Bursaries... making a difference

Did you know that for \$1,000 – (that's less than \$20 a week), you could **create** a named scholarship to honour a friend, colleague or loved one while becoming a hero to one of our students?



Scholarships and bursaries are key to our ability to attract and retain outstanding students, who in turn contribute to the proud tradition of the University of Alberta.

Our **Faculty of Science Entrance Scholarship** provides every first year student with entrance marks of 90% or better with a \$1,000 scholarship, helping to relieve some of the financial burden of earning an advanced education. In 2004 alone, we awarded over 350 of these scholarships.

The Faculty of Science is committed to increasing the number and value of scholarships available each year. We want to assist even more students– and your support can make it possible.

For more information on how you can support our students with scholarships and bursaries, contact Claudia Wood at 492-6662 or claudia.wood@ualberta.ca.

Help us support our future scientific leaders.



Science Contours is published twice a year by the Faculty of Science Office to provide current information on the many activities of the Faculty. The newsletter is distributed to alumni and friends of the Faculty.

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