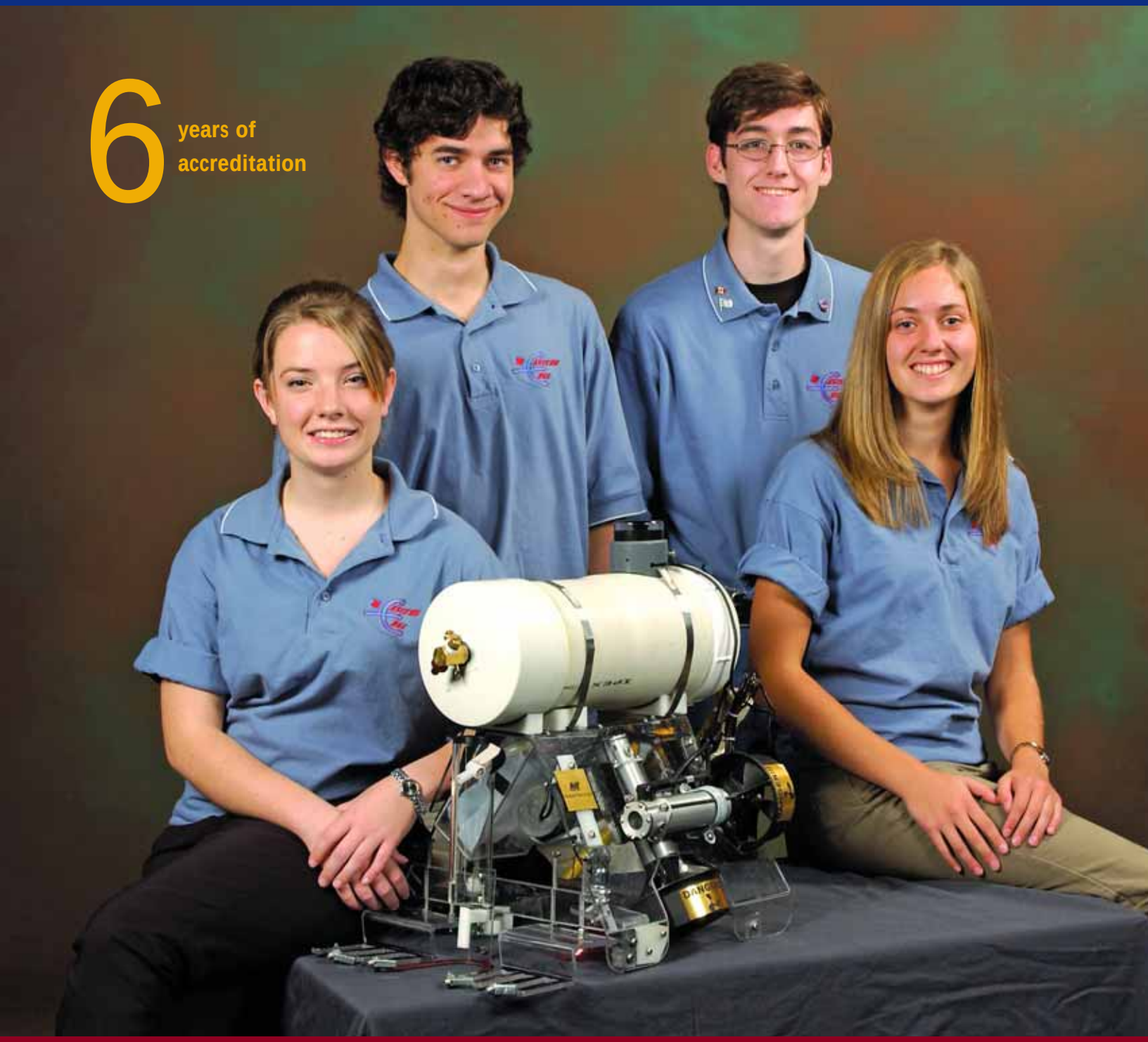
Benchmarks

Faculty of Engineering and Applied Science Fall/Winter 2005



Memorial
University of Newfoundland

The Dean's *message*

Welcome to our latest edition of *Benchmarks*, a publication of the Faculty of Engineering and Applied Science at Memorial, which provides you with a glimpse into some of the exciting activities ongoing in our faculty. In this issue you will read about the wonderful accomplishments and contributions of our students, the diverse achievements of our alumni and their companies, and the leading-edge research activities of some of our faculty and graduate students.

This past year has been very busy for our faculty and staff as we had an accreditation visit from the Canadian Engineering Accreditation Board (CEAB). I am very pleased to report that the all five of our undergraduate degree programs received a six year accreditation decision from the CEAB. This decision is a very significant endorsement of the quality of engineering education at Memorial and places our undergraduate programs among the very best in Canada. Our students and alumni, their employers, and our faculty and staff have very good reason to be proud of the accreditation decision, and I would like to thank everyone involved in the work that goes into offering such high quality programs. You can read more about our accreditation success in this issue of *Benchmarks*.

It is a time of very exciting changes in the Faculty of Engineering and Applied Science, with tremendous growth in research and graduate studies. Our research funding exceeded $8M in 2004/05, and we now have over 250 graduate students in the faculty. In addition to our strength in undergraduate engineering education, the faculty is now a significant force in research and development at Memorial and in the province. During the past year we launched two new course-based graduate programs in Computer Engineering and Environmental Systems Engineering and Management, and we expect to launch new graduate programs in Engineering Management (in collaboration with the Faculty of Business) and Oil and Gas Engineering in 2006/07. Through our academic programs, our research and outreach activities, and our support of young innovators and entrepreneurs, the Faculty of Engineering and Applied Science is a very positive influence on the economic development of our province.

One of the driving forces behind our success comes from our very close relationship with the Professional Engineers and Geoscientists of Newfoundland and Labrador (PEG-NL), including representation of PEG-NL on our faculty council and involvement of volunteers from the PEG-NL membership who assist us in the evaluation of our co-op engineering students. Also, the Faculty of Engineering and Applied Science benefits from formal advice about our operations from the Engineering and Applied Science Advisory Council (EASAC), which includes individuals who hold senior positions in the industry, research organizations and government. The valuable input of these dedicated volunteers is essential to ensuring that the faculty maintains a close link with the engineering profession and with industry.

It is very exciting to have the opportunity to be the dean at a time when we are experiencing significant growth and evolving as a faculty. As I travel outside the province, I get an opportunity to learn more about the excellent reputation of our faculty, particularly among the employers of our co-op students and our graduates. This is particularly satisfying. I am continually impressed with our faculty and with the individuals who are dedicated to building upon this reputation and to ensuring that excellence continues to be a defining feature of engineering at Memorial.

I hope that you enjoy this issue of *Benchmarks*. Please don't hesitate to get in touch with me (*rgosine@engr.mun.ca* or 709-737-8810) if there is anything you feel I can add to the next issue of *Benchmarks* or on any other matter that relates to the Faculty of Engineering and Applied Science. We also encourage our alumni to send any updates about themselves to *alumni@engr.mun.ca* so we can keep in touch and share any successes with your fellow alumni.

Dr. Ray Gosine, P. Eng.
Class of '86

Research on ice loads aims to improve the design of offshore structures

Dr. Ian Jordaan recently received grants worth $300,000 for experimental fracture testing of ice. The funding for the research project, entitled "Experimental Study of Ice Failure Processes for Design Load Estimation", is coming from Petroleum Research Atlantic Canada and National Research Council Canada, which have both contributed $50,000 each year for three years. The project is aimed at exploring more cost-effective designs of offshore structures for ice loads and will be done in collaboration with the National Research Council of Canada's Institute for Ocean Technology (IOT) and industry partners. The project builds on a related undertaking "Ice Data Analysis and Mechanics for Design Load Estimation" funded by industry (Husky Energy, Petro-Canada, and Chevron Canada Resources), National Research Council Canada, and Natural Sciences and Engineering Research Council of Canada.

Dr. Jordaan, who is the principal researcher collaborating with Dr. A. Derradji-Aouat of IOT, says this research is very much industry driven and will have a great deal of significance for the oil and gas industry. The main objective is to reduce uncertainty in the knowledge of ice loads through an innovative experimental program designed to study ice behaviour during ice structure interactions with a focus on fracture and damage processes for fixed and floating offshore structures. "Design for ice loads is one of the most important factors in the Northern waters of Atlantic Canada. It is seen as a significant environmental factor and often the driver behind design. With this research, we're hoping to achieve cost effective design methods, by reducing uncertainties in ice loads." Dr. Jordaan adds that the results will also benefit oil and gas exploration in Norway, Russia, China, Alaska, the Arctic and Labrador as well as strengthen St. John's' status as an international leader in ice load design and engineering.

Researchers receive grant for offshore environmental research

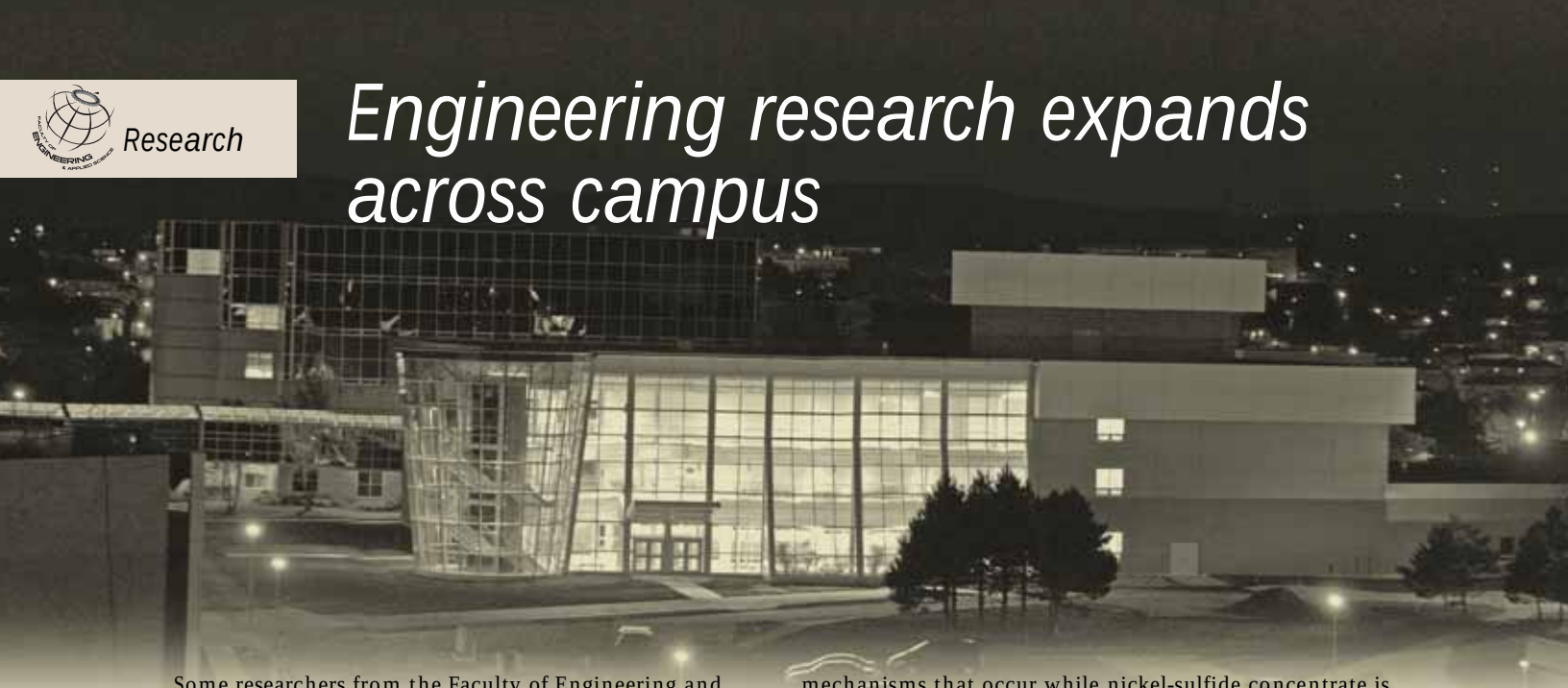
Dr. Tahir Husain, interim chair of Civil Engineering, has received more than $600,000 over three years. Dr. Husain and his team, which includes Drs. Neil Bose, Kelly Hawboldt, and Brian Veitch, also from the faculty, will develop improved modelling tools to monitor and assess risk of the environmental impact of discharged produced water from offshore platforms.

This research, titled "Produced Water Monitoring and Risk of Environmental Impact from Discharges in the Offshore Oil and Gas Industry", could have a significant positive effect on environment management in the offshore. Produced water, which is extracted during oil and gas production, includes formation water, injected water, small volumes of condensed water, and any chemical added down hole or during the oil/water separation process. Produced water is the highest volume waste generated in offshore oil and gas production. It contains toxic metals and a certain amount of naturally occurring radioactive materials, which are difficult to remove before discharge. This makes the assessment of their effects on human health and the environment an important concern to the oil and gas industry. This innovative project will use a new ocean going autonomous underwater vehicle (AUV) available at Memorial University to collect data from the water column to validate and calibrate ocean environmental monitoring and modeling tools which researchers have developed; develop leading edge hydrodynamic models of discharge plumes; and develop a risk management tool for environmental assessment of the impacts of produced water discharges.

Dr. Husain's grant includes $382,000 in cash and $295,000 in-kind support from Petroleum Research Atlantic Canada, Natural Sciences and Engineering Research Council of Canada, SNC-Lavelin and Fisheries and Oceans Canada. Also collaborating on the project are the Bedford Institute of Oceanography and the National Research Council Canada.

Research

Engineering research expands across campus



Some researchers from the Faculty of Engineering and Applied Science are part of a new state of the art research facility at Memorial University. Unlike the brick, traditionally academic buildings which scatter the campus, the Inco Innovation Centre (IIC) is a very open, shiny piece of modern architecture. It is dedicated to innovation in research and teaching for the benefit of both industry and the community.

On Sept. 20, representatives of Memorial University, the provincial and federal governments and Inco Ltd. officially opened the $17.3 million facility. The overall scope of research in the IIC is to conduct research and development for the innovative exploration and exploitation of mineral deposits. Particular emphasis has been placed on the development of process engineering and the process simulation and control systems required for hydro-metallurgical mineral processing.

Drs. Kelly Hawboldt, Faisal Khan, John Shirokoff, George Mann, Siu O'Young, and Yuri Muzychka from the Faculty of Engineering will be among the many researchers with laboratories in the IIC. Containing some 9,000 square metres, research related to process engineering and the Voisey's Bay mineral deposit will be concentrated on the first floor of the building. The building is also designed to house a small scale model of a hydrometallurgical plant. Laboratories include:

Health and Safety Laboratory

To study the safe operation and design of processing facilities, and prevent or minimize their environmental and health impacts as well as developing new models and methodologies in risk analysis and probabilistic risk assessment.

Corrosion and Sample Reduction Laboratory

This laboratory will initially be used to develop an improved understanding of the corrosion processes and mechanisms that occur while nickel-sulfide concentrate is subjected to hydrometallurgical treatments. Scientists hope this knowledge will help reduce maintenance costs associated with corrosion and decrease production downtime.

Process Modelling and Simulation Laboratory

To develop simulation capability for optimizing a wide range of applications related to process engineering.

Process Engineering Hydrometallurgy Laboratory and Pilot Plant

Here, research and development of hydrometallurgical processes will take place as scientists study process improvements, innovations in processes, seek enhancement in the performance of materials and solution chemistry, and find efficiencies in process engineering.

Process Control and Automation Laboratory

Advanced process control techniques will be developed in this laboratory. Initially, the focus of research will be Inco's hydrometallurgy plant; developing new control techniques for unit operations and plant-wide process control methodologies.

Other engineering research

RAVEN is the Remote Aerial Vehicle for ENvironmental-monitoring (RAVEN) group developing ground breaking technology for maritime surveillance using an unmanned aerial vehicle (UAV). The project is headed by engineering professor Dr. Siu O'Young. Also set up in the IIC, Cathexis Innovations Inc. is a global provider of RFID technology and a company formed by engineering alumni. Cathexis' offerings include wireless, mobile RFID readers, advanced integration software and RFID application models built on its proprietary RFID Engine™ architecture. RFID, like barcodes, is a form of automated identification and data capture technology.

Helping rural economies: Researchers work together to improve conditions for shellfish workers

Over the past few decades, as ground fish stocks have declined or disappeared across Atlantic Canada, and shellfish harvests have expanded, an increasing number of workers in coastal communities have become dependent on work in shellfish processing plants. These jobs however, are increasingly unstable, as work becomes more seasonal, as work processes become increasingly mechanized, and as shellfish supplies fluctuate, the excess of processing capacity over resource supply puts jobs, plants, and the economic future of whole communities in jeopardy.

Work and income are significant health determinants and in the case of shellfish processing, a third important health determinant is the work environment. These workers experience a broad range of health risks, including occupational asthma and allergies, cumulative trauma disorders, envenomation, and other types of injuries. Older workers, particularly female workers, are often most at risk. These diseases tend to be poorly understood and are less likely than injuries to be compensated for. They also tend to be associated with serious challenges related to diagnosis and accessing effective treatment. These challenges are particularly great in rural and remote communities.

Dr. John Molgaard of the Faculty of Engineering and Applied Science is a core member of a team, led by Dr. Barbara Neis, co-director of SafetyNet and with other collaborators in the Faculties of Medicine, Sociology, Human Kinetics and Recreation, and Nursing, which has received a grant from Health Canada to apply the knowledge generated by research on health, safety and employment for shellfish processing workers. The total grant, over four years, from the Population Health Fund of the Public Health Agency of Canada is $106,537 with income from other sources, much of it in kind, for a total of $204,537.

"Health, Safety and Employment for Shellfish Processing Workers; Community-Based Approach to Policy Innovation" was developed out of a current SafetyNet program, in which Dr. Molgaard is a principle investigator on cumulative trauma disorders in crab processing. That research also involves Diane Durnford, an engineering graduate student.

The grant from the Public Heath Agency will be used to develop and pilot a community-based approach to the prevention of injury, disease, disability and loss of employment and income in shellfish processing across the Atlantic region. They hope to increase the access of current and former workers to policy makers and to engage a broad range of community representatives in a collaborative program to promote prevention and to support injured and ill workers.


Dr. John Molgaard with student

"The project has the potential to improve existing policies and contribute to the development of new policies relevant not only to shellfish processing workers and their communities, but also to other workers vulnerable to occupational disease and injury," said Dr. Molgaard. "Workers, former workers, their families, managers, company owners, community leaders, health professionals, and government will be encouraged to work together to find ways to monitor and minimize occupational risks, improve diagnosis and treatment of affected workers, and improve income support and employment alternatives at the plant, in the community and the region for those who lose their jobs." Some of the communities with processing plants Dr. Molgaard and his colleagues will be working with are located in coastal Labrador, Cape Breton and northern New Brunswick.

Alumni NEWS

Top 50 CEOs include two engineering alumni

Two engineering alumni have been named in the Top 50 CEOs by Atlantic Business magazine. Jerry Byrne, president and CEO, D.F. Barnes Ltd. (B.Eng.'77) and Neil Chaulk, president and CEO, ICAN (B.Eng.'89).The awards were presented at a gala dinner at the Westin Hotel in Halifax in May. Winners were also profiled in the May/June issue of Atlantic Business.

Since 1999, Atlantic Business magazine's Top 50 CEOs recognition program has saluted the region's management talent. Nominations come from Atlantic Business readers and are judged by a select panel of business executives. Judging criteria include: the size and growth of the individual's organization; his or her proven managerial acumen; plus, demonstrated community and industry leadership. Dr. Axel Meisen, president of Memorial University was also named as one of the Top 50 CEOs.

Cathexis Innovations wins Best Business award

(left to right) Mark Gillingham (vice president sales), Mark Simms (vice president research and development), Steve Taylor (CEO) and Colin Power (vice president product delivery)

Cathexis Innovations Inc. has been named in the top 10 young Canadian Entrepreneurs of the Year by the Canadian Youth Business Foundation. The company, founded by engineering graduates Mark Gillingham, Mark Simms, Steve Taylor and Colin Power, has won the Best Business Award for Newfoundland and Labrador. The annual CYBF awards program is designed to celebrate the successful young entrepreneurs CYBF has assisted and the dedicated volunteers who help deliver CYBF's programs across Canada.

Officially incorporated in March 2001, Cathexis is a global provider of RFID technology. Cathexis' offerings include wireless, mobile RFID readers, advanced integration software and RFID application models built on its proprietary RFID Engine™ architecture. RFID, like barcodes, is a form of automated identification and data capture technology.

Alumni updates

Eric Jerrett, Dip.Eng. (1961), has been appointed Chair of the Dr. H. Bliss Murphy Cancer Care Foundation, and member of Historic Sites and Monuments Board of Canada. Mr. Jerrett is now retired after a career as an engineer, licensed architect, land surveyor and notary public. He was also the recipient of Memorial University's 2002 Alumni Award for Lifetime Achievement and was awarded the Order of Canada in 1998.

Dr. Umesh Dayal, PhD (1974), is project supervisor with Paul C. Rizzo Associates, Inc. He is currently living in Plum, Pennsylvania. Dr. Dayal was a faculty member for more than 25 years at I.I.T. Kanpur, India until he retired in 2004.

Dean King, B.Eng. (1990), is a member of the Exxon Mobil Production Company, Central Engineering Organization and, as an engineering specialist, provides technical support to worldwide operations. He is married to Gerarda and they have one daughter, Marylou. They have been living in Houston for the past five years.

John Kearsey, B.Eng. (1994), has been accepted into the Energy Management MBA program at HEC Montreal (Université de Montreal). The program is one year and he will graduate in September 2006, at which time he hopes to return to Calgary.

Kimberly Pardy, B.Eng. (1995), is working with MDS Nordion as a project engineer in nuclear medicine. She is an accomplished artist and owner of two Labrador retrievers. She resides in Kanata, Ontario with her partner, Jeff and daughters, Alexandra and Victoria.

Dr. Keng Yap, B.Eng. (1995), married Lauren Sum, also a former student of MUN, after graduation. He received a PhD in mechanical engineering from the University of Houston in 2000, with specialty in damage detection of aerospace structures. He recently moved back to Houston to work for Boeing on NASA's Space Shuttle Program and is technical lead in the Shuttle's Wing Leading Edge Impact Detection

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Local company gives back to the faculty

A company that got its start at Memorial is now partnering with the university to help students with real-world research in software and electronics. INSTRUMAR Limited emerged from the Centre for Cold Ocean Research and Engineering (C-CORE) in 1979. Almost three decades later, the Faculty of Engineering and Applied Science and INSTRUMAR have established a joint Industrial Research Initiative (IRI).

Sensor Unit from the Attalus Fiber System

Dave Bonnell is a master's student in electrical engineering. "With the support of the IRI, I've been able to take time out of my career to pursue relevant academic research," he said. "The IRI provides guidance, as well as an immediate purpose: research is targeted at real-world problems." Mr. Bonnell says he feels that both MUN and INSTRUMAR will provide important resources to researchers.

Through the IRI, the collaboration between MUN and INSTRUMAR will enhance INSTRUMAR's sensor based Attalus Fibre System. This system provides real-time information about production quality and process problems for synthetic fibre producers. Synthetic fibres are used in an array of products including seat belts, airbags, tires, clothing, carpets and furniture.

Current research under the IRI is focused in three areas: improving sensor performance and reducing costs through the application of digital signal processing techniques; automating detection of new kinds of faults through novelty detection schemes; and automating software testing using design documentation. Early results from this work were presented at the Newfoundland Electrical and Computer Engineering Conference (NECEC) in early November.

Dr. Axel Meisen, president of Memorial University, says, "This opportunity provided through INSTRUMAR, Atlantic Canada Opportunities Agency (ACOA) and Atlantic Innovation Fund (AIF) enriches the offering at Memorial University by providing our students with industry specific research that can be used to further their education."

"We have hired many MUN graduates over the years and this program strengthens our relationship with the university even further and allows us to work closely with students in accomplishing mutually rewarding industry based research," says Dr. Stuart Inkpen, president and CEO of INSTRUMAR.

The IRI was established with initial funding of $300,000 over three years contributed by INSTRUMAR and ACOA through AIF. INSTRUMAR is an integrated supplier of real-time information systems. The company provides end-to-end solutions supplying the intelligent sensor technologies, software, and the services required to integrate these technologies to effectively utilize real-time data. Using its patented technology, INSTRUMAR has introduced innovative solutions to obtain real-time data in both the polymer fibre industry and the aerospace industry. Located in St. John's, Newfoundland, INSTRUMAR currently employs 58 people, with 28 employees concentrated in research and product development. For further information about INSTRUMAR, please view the company's Web site at ***www.instrumar.com***.

Alumni updates

ALUMNI UPDATES con't from page 6

System that successfully detected debris impacts during the recent STS-114 Discovery flight. He and Lauren have two daughters, Shannon and Shirley, and are expecting another child. They would love to reacquaint with old friends at MUN. You can write to them at *kyap@myway.com*.

Dr. Prasad Mangalaramanan, PhD (1997), is lead CAE specialist with Dana Corporation. He is married to Bama Srinivasan and they have one son Narayanan S. Aiyer. Dr. Mangalaramanan was recently featured in *Marquis Who's Who* of outstanding professionals for 21st century, 2002 edition and he currently has two patents filed.

Kathy Brett, B.Eng. (1998), has been working overseas with Schlumberger on drilling projects in Southeast Asia, Africa, Russia, and the United States since graduating in 1998. She married a Scot, Andrew Williams, in St. John's in August 2004.

Thank you to everyone who sent us your updated information. If you'd like to share something with your fellow alumni, e-mail us at *alumni@engr.mun.ca*.

Full steam ahead for Mad Rock Solutions

Jason Dawe, Mad Rock's COO with the RocLoc 6

Employees at Mad Rock Marine Solutions are in selling mode. The company has recently obtained type approval process through Det Norske Veritas (DNV) for the RocLoc 6 lifeboat release mechanism. Translation: Mad Rock has gone from research and product development to sales mode.

Dean Pelley is Mad Rock's president and CEO. He and Jason Dawe, who are both faculty alumni, started the business in 2002. Since then, they've had a few ups and downs including March, 2004 when they ran out of development funds. With no finished product and no official patent on their product, they almost threw in the towel. "Then out of the blue comes this investment group looking to invest in Newfoundland marine technology development," says Mr. Pelley. They were in business again and have not given up since.

Mad Rock was started as a technology development company committed to improving safety with a focus on marine evacuation systems. They knew they would have to concentrate on real problems that were feasible business ideas and had real potential for profit. The lifeboat release mechanism is a prime example of this. The company was asked by offshore oil industry operators to solve the problems associated with launching a twin falls davit lifeboat. Mad Rock did some research and discovered that the pre-mature release of lifeboat hooks were indeed a huge problem. In fact, it had been the cause of many accidents causing serious injury and death. But Mr. Pelley says the RocLoc 6 solves many of those problems. "The new challenge is to convince the international marketplace that our product is a safer and more reliable alternative to existing hooks. I compare it to having an empty fire extinguisher in your home. A regulation may say you have to have one but does not stipulate whether it has to be empty or full. A company sells empty ones at a much cheaper price, and as a customer you figure you will probably never need to use it. So you buy the cheaper, empty fire extinguisher."

They initially thought Europe would be their first sales market, but it looks like their first customers will come from Newfoundland. They have two major companies interested in the RocLoc 6. And they're already looking at other products, like a wave timer and harsh environment lifeboats. "We're still refining our business model but we'd like to be known as the company that industry comes to for new products and solving problems and if we make a product that saves one life, the past three years will all be worth it. It's been a huge learning experience. I keep saying 'What I've learned over the last three months is nothing compared to what I'm learning now'."

Mad Rock consists of Dean Pelley, who has joined the Canadian delegation of the International Maritime Organization as an industry advisory, Jason Dawe, Ken Bruce and Dwayne Hopkins who are all alumni from the Faculty of Engineering and Applied Science. Others also involved with Mad Rock are Robert Murakami, and MUN alumni Lisa Sullivan and Cindy Hann.

For more information, visit ***www.madrock.ca.***

Alumni and entrepreneur uses local expertise to save lives

Randy Billard is doing everything he can to keep people in this province. Aside from designing safety and training equipment that could save people's lives, Mr. Billard started his own business to keep as many Newfoundlanders and Labradorians in their home province as possible.

(l-r) Randy Billiard, Hong Ngee Tay, Michael Winter, Patrick Linehan and Brad Eddy

Lifeboat simulator

Virtual Marine Technology Inc. (VMT) is a platform technology provider specializing in marine based simulation solutions. Mr. Billard started VMT along with faculty member Dr. Brian Veitch in October of 2004. Mr. Billard, a 26 year old from Isle aux Morts, Newfoundland, was completing a Master's of Ocean and Naval Architectural Engineering at Memorial and developing mathematical models for real time simulation before becoming the president of a company specializing in simulation technologies. For the past two years he has managed a project team of co-operative engineering students working on the development of the Lifeboat Training Simulator.

The Lifeboat Training Simulator, a collaborative effort of VMT, the Centre for Marine Simulation - Marine Institute, Memorial University and Mad Rock Marine Solutions Inc., brings simulation technology to clients who don't want the risk or the cost of real boat training. Most companies currently use live boat training, but as Mr. Billard explains, that's not possible if waves are more than one or two metres high because launches can't be performed safely in such severe weather. The VMT training simulator however can make the environment pretty harsh. It can be dark, snowy, rainy, whatever real life conditions could throw at you while you're operating a vessel.

VMT is working on offering different types of simulators: Web-based, desktop, full mission simulator and full mission simulator with motion simulation. As part of their Web-based training, they're working on a product line of Part Task Trainers, where specific components of a simulator can be downloaded from the Web for training purposes. They plan to work with manufacturers in building simulators around their products.

Mr. Billard says the support from the faculty has been invaluable. "I was terrified when I first came here as an entrepreneur until I realized all of the resources at my disposal. Every question I had was addressed. They let me learn for a while on my own, but every time I ventured off the path, I was put back in place. They kept me focused." Mr. Billard also credits Captain Anthony Patterson and Dr. Veitch with his success so far. "Tony and Brian introduced me not only to the industry, but to different learning experiences. I was encouraged to go to business seminars, trade shows and conferences whenever possible and that helped me grow as an entrepreneur and a person," said Mr. Billard.

VMT currently calls the Enthuzium Centre in the S. J. Carew Building home and they've just signed their first contract with the Canadian Coast Guard Auxiliary to build a Fast Rescue Craft Training Simulator. The team has grown and has recently hired two recent graduates of the engineering program and they're hoping to hire many more. "In two years I'd like to be doing exactly what I'm doing now," says Mr. Billard, "But with more people and more products. I'm a big fan of MUN and of Newfoundland. The more brains I can keep here in Newfoundland, the happier I will be. There's so much potential here, we need to keep them here."

For more information about Virtual Marine Technologies, visit ***http://virtualmarinetechnology.com/***.

Spot **LIGHT**

Engineering students and their team mates win gold at international competition

(left to right) Engineering students Renée Hodder, Andrew Osmond, Scott Follette and Sarah Howse with their ROV, Galileo

The Eastern Edge Robotics Team is already talking about the 2006 competition, and even 2007. They are bright, focused and given their recent victories, are likely destined for a very successful future. Four MUN engineering students as part of a team of 33, won gold recently at an international underwater robotics competition held in the astronaut training facility, Johnson Space Centre in Houston, Texas. With students from MUN engineering and high schools in the Eastern School District, the Eastern Edge Underwater Robotics Team competed against 40 other teams, including some very prestigious engineering schools. Their awards included:

Gold: 1st place overall, 2005 Remotely Operated Vehicle Competition

Gold: 1st place Robot Performance

Gold: 1st place Engineering Panel Presentation

Gold: 1st place Engineering Display

1st place: Teamwork and Professionalism

1st place: Tether Management

The four Memorial engineering students on the team are students Scott Follett, Sarah Howse, Renée Hodder, all from Mount Pearl and Andrew Osmond from St. John's. The Newfoundland team's remotely operated vehicle (ROV), which they have affectionately named Galileo, is a miniature version of the robots used for industrial and research tasks in underwater and space environments. According to team coordinator Clar Button, the judges described the Newfoundland and Labrador robot as a "fabulous piece of engineering, which was close in design and fabrication to the prototypes currently used in industry and leading-edge research."

But the team hasn't been sitting back, taking it easy and admiring their awards. Since the competition, they have given several presentations both locally and internationally. Some of these appearances included the Canadian Association of School Administrators and the IEEE Oceans Conference, which was held in Washington, just to name a few. And if presentations weren't keeping them busy enough, the scope for the 2006 Marine Advanced Technology Education (MATE) competition was released in November and starting in December the team reconvened to start the design for that competition. The theme this year is Ocean Observatories and each student will again likely put several hundred hours into the next robot. In addition, mentors for the team are looking at holding a regional high school ROV competition next spring.

Eastern Edge Robotics Team at the Johnson Space Centre

2005 was the fourth annual robotics competition offered by the MATE Centre and the Marine Technology Society, headquartered in Monterey, CA. The competition was held at NASA's Neutral Buoyancy Lab, the facility used to train astronauts to conduct missions in space in a simulated zero gravity environment. NASA's interest in the competition is to examine new ideas in robotics, emerging from the brightest students, which might be used in the next generation of space missions to the Moon and Mars.

Faculty of Engineering and Applied Science gets top rating

"Full accreditation for all of the faculty's engineering programs is an outstanding accomplishment, an accomplishment rarely achieved."

All five programs in the Faculty of Engineering and Applied Science at Memorial University were granted a full six-year accreditation, the maximum accreditation period possible for engineering degree programs in Canada, after a review by the Canadian Engineering Accreditation Board (CEAB). All engineering degree programs in Canada undergo rigorous assessments by the CEAB, on behalf of the engineering profession in Canada to ensure that Canadian engineering graduates are among the best in the world.

"This decision by the Canadian Engineering Accreditation Board is a very strong endorsement of the quality of the engineering degree programs in the faculty and it places our programs among the very best in Canada," said Dr. Ray Gosine, dean of engineering. "Our graduates, students, faculty and staff should be very proud of this achievement. It reflects an outstanding commitment to engineering education."

Steve McLean, executive director of Professional Engineers and Geoscientists of Newfoundland and Labrador (PEG-NL), says the PEG-NL Council was extremely pleased to hear of the accreditation but the news of the CEAB's decision didn't really come as a surprise. "We have heard only very positive comments from employers about the quality of engineering students and grads from Memorial. This accreditation is a strong indicator of the high standard of the programs there. Our congratulations go to Dean Gosine and the faculty and staff at the engineering faculty."

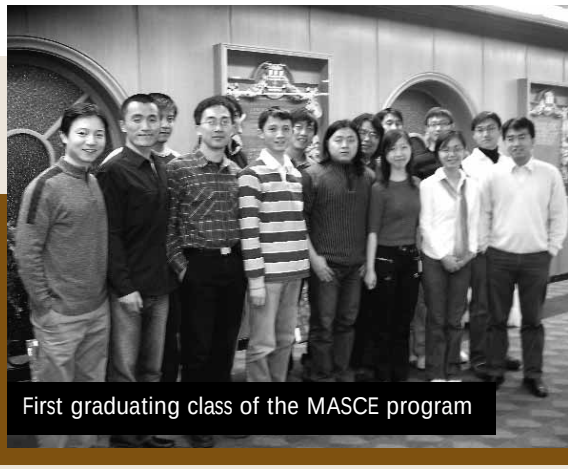
"Full accreditation for all of the faculty's engineering programs is an outstanding accomplishment, an accomplishment rarely achieved," said Dr. Axel Meisen, president of Memorial University. "As a former chair of the Canadian Engineering Accreditation Board, I know how hard it is to meet the exacting standards of the CEAB. This result attests to the quality of our faculty and positions our graduates well for their professional careers."

Accredited engineering programs must contain not only adequate mathematics, science and engineering, but they must also develop communication skills and an understanding of the environmental, cultural, economic and social impacts of engineering on society and of the concept of sustainable development. Accreditation also ensures and reinforces a commitment to educating engineers who are adaptive, creative, resourceful and responsive while fostering innovation in undergraduate students.

"Engineering is a rewarding career choice for individuals who are creative and who want to create a better world through the application of scientific principles to address challenges such as improving the quality of our lives and the health of our economy," adds Dr. Gosine. "There is no better choice than Memorial's engineering co-op programs for an excellent university education which opens up outstanding career opportunities through a combination of academic study and co-op work terms in industry."

NEWS

Students travel around the globe for new engineering graduate programs



First graduating class of the MASCE program

In November the first cohort of students came to Memorial for the master's in environmental systems engineering and management (MESEM). It's the second such program in the faculty, which has been heavily promoted in places like China, where professional engineers are looking for something to give them an advantage in a growing marketplace. In August 2004, 25 Chinese students travelled around the globe to Memorial to take part in the 18 month, master's of applied science in computer engineering (MASCE) program. Those students completed their program in December.

Dr. Ramachandran Venkatesan, engineering professor and associate dean of undergraduate studies for the faculty, says the idea of coming to Canada for higher education seems to be popular in China. "There is rapid growth of the engineering industry in China and the presence of huge multi-national firms requiring highly educated personnel." The programs that are promoted are carefully chosen and, he adds, computer engineering appears to work because of companies like IBM, Motorola, Cisco, Intel, Microsoft, HP, and others looking for people with leading-edge knowledge in addition to good English skills and international experience.

Dr. Venkatesan says another important reason marketing to China has been successful is related to culture and affordability. "Rapid growth of a high middle class in China is the new-found affluence. Students are funded solely by the career savings of their parents, sometimes supplemented by their own and/or relatives' support because for nearly two generations, China has been following a one-child-per-couple policy. Thus parents are able to invest their life savings in their child's education."

The MESEM program will cover topics such as environmental law and management, human health and ecological risk assessment to find cost-effective engineering solutions to these complex issues. The 14-month program, which consists of 30 credits, includes an initial eight-week English language module for international students.

Four new Chairs announced for faculty

- The Faculty of Engineering and Applied Science and the School of Music at Memorial University of Newfoundland are establishing a **Tier II (NSERC) Canada Research Chair in the area of Music Technology**. The Chair will develop a world-class research program focusing on technology needed to support applications in music such as digital audio and video processing, networked multimedia communications, human-computer interaction or acoustics. The search for a Chair holder is ongoing.
- In partnership with Aliant Telecom and Consilient Technologies, the faculty is searching for a **Senior Industrial Research Chair in Mobile and Wireless Computing**. The Chair will build a research program, in collaboration with industrial partners, focusing on applied research in the area of mobile computing and wireless communications including mobile computing applications, mobile computing middleware, and wireless communication technologies applicable to low-power mobile computing devices.
- The faculty is also establishing an **Industrial Research Chair in Machine Vision**, in partnership with Baader-Canpolar Incorporated. The Chair will build a research program, in collaboration with the industrial partner, focusing on computer vision based research in the context of automated inspection and quality control in food processing. Possible research areas for the Chair may include, but are not limited to, robotic vision, image processing and analysis, pattern recognition and classification, and high-speed and multi-spectral imaging.
- Applications are invited for a **Senior Industrial Research Chair in Process Simulation**, to be established in the faculty, in partnership with Honeywell Inc. and other partners of Memorial's Inco Innovation Centre. The Chair will focus on applied research in the area of simulation and optimization of mining and other chemical or metallurgical industrial processes.

Faculty opens Asset Integrity Management Unit

This past summer, the Faculty of Engineering and Applied Science officially opened the Asset Integrity Management Unit. It's vision? "Memorial University of Newfoundland will be an internationally recognized centre of excellence in Asset Integrity Management, with special emphasis on the oil and gas sector, in the areas of education, R & D and industry outreach."

Researchers in the unit, which is home to Dr. R. Seshadri, Memorial's Canada Research Chair in Asset Integrity Management, investigate industry related integrity assessment issues such as new generations of methods for evaluating thermal hot spots in pressure vessels and piping systems, robust simplified methods for evaluating internal as well as external corrosion in pressurized equipment, fitness-for-service evaluations of cracked components and structures for pressure vessel materials, and stress-categorization advances for failure avoidance. The research work has already been recognized through best paper awards.

Graduate students and faculty members in the asset integrity group, and industry partners, like the National Research Council of Canada's Institute for Ocean Technology are using the unit, which is providing access to selected finite element software. Dr. Seshadri says they are also encouraging local industry to use the facility for research studies as well as undergraduate students whose projects involve asset integrity evaluation.

New program manager for co-operative education


Anil Raheja

The Faculty of Engineering and Applied Science's co-operative education office has a new program manager. Anil Raheja has a MBA degree from Memorial University specializing in marketing, finance and small business management, and a B.Eng. (mechanical) from R.V. College of Engineering, Bangalore, India. He has been a co-operative education co-ordinator in the faculty since 1997, where he has helped thousands of students find successful work term placements and conducted several professional development seminars for students over the years. Mr. Raheja has also acted as chair of the Co-op Academic Review Committee for the faculty as well as chair of the university wide Ad-Hoc committee on transcript notations for co-operative work terms. Prior to joining the faculty, Mr. Raheja was an entrepreneur of Fresh Air Popcorn (Newfoundland) and was, for six years prior to that, a research facilities and laboratory manager for the Department of Earth Sciences at Memorial.

Continuing Engineering Education update

Continuing Engineering Education (CEE) has a new director. Dr. Leonard Lye, who is a professor of Civil Engineering, has been with Memorial since 1988. He was chair of Civil Engineering from 1995-2001, and has been involved with Continuing Engineering Education for many years. He has taught several CEE courses at MUN and at various organizations in Canada, as well as in Saudi Arabia, Malaysia, Hong Kong, and Indonesia. Dr. Lye is also the founder of the local chapter of two national charities. They are the Tetra Society of North America, a charity dedicated to helping people with disabilities achieve fuller and more independent lives and the Taoist Tai Chi Society which is dedicated to the health improvement aspect of Tai Chi Chuan. Over the next few months, Dr. Lye will be reviewing the role of CEE and how it can better serve industry and the engineering community.

CSCE annual conference coming to Newfoundland

The Newfoundland and Labrador Chapter of the Canadian Society for Civil Engineering will be hosting the 2009 annual conference in St. John's, Newfoundland. The conference is tentatively scheduled to take place from June 3 to June 5, 2009. The last CSCE annual conference held in Newfoundland took place in 1989. A local organizing committee will be formed in the coming year.

Girl Quest Open House

(left to right) Chelsey Healey, Emily Walsh, Taylor Fewer, Emily O'Dea, Katherine Bowes, Lindsay Garland, Niamh Molloy, and Emma Walsh

Fifty girls, who participated in the Girl Quest program this year, displayed their projects at an open house this summer. More than 100 people attended the event to see projects such as hot air balloons, working model lighthouses, steam powered race boats, catapults and trebuchets, aqueducts (water-transporting pipelines), water filtration, and more. The girls and their families also competed in a timed event called "The Tallest Tower in Ten" where each team had 10 minutes to build the tallest free-standing tower with provided materials. Guest speakers at the event included Roxanne Gleason, a civil engineer with Petro-Canada and Steve McLean, executive director of Professional Engineers and Geoscientists of Newfoundland and Labrador.

Since Girl Quest began, young girls have been having fun learning about science and engineering. Girl Quest is a Future SET program – an award-winning science and engineering education program designed with fun, interactive and educational projects to boost girls' confidence and interest in science. Future SET is a non-profit organization, founded by PEG-NL, which promotes science, engineering, and technology education for children. Future SET also operates summer camps in July and August, along with in-class school workshops.

New aspects of Future SET 2005 included:

- The addition of a third TECS camp (Technology, Engineering and Computer Science specialized science camps for kids aged 10-14). Two were offered in 2004 and due to high demand an additional week was added, with much success. The TECS camps remained very much in demand and kids completed sophisticated activities such as designing animated movies, constructing an "Electri-city", and making their own "Operation"-style board games.
- The new Future SET recruit volunteer program for high school students was a great success. Students have the opportunity to volunteer at our camps and senior students also have the option of being mentored by a faculty or staff member of MUN in the science field they are most interested in. This year, six high school students joined the Future SET staff as volunteers and were recognized at the open house for their efforts.

At the open house, Future SET recognized Petro-Canada, the major financial sponsor of Future SET, for its continuing support and generous contribution to the program. A plaque was presented from Future SET and was received by Mr. Bill Fleming, the East Coast vice president of Petro-Canada. This year, Future SET reached over 2000 children. Over 200 took part in the camps, 50 in Girl Quest, over 1600 in school workshops, and over 200 through community events.

For more information about Future SET, visit ***www.futureset.ca/***.

Speaking of Engineering: Distinguished lecture series continues

About 70 people from the community and from industry came out on January 19 to hear Professor Dag Friis talk about how engineering can help make fish harvesting safer. Professor Friis talked about his research on the current trends in fishing vessel proportions and arrangements and how they are creating a number of safety, energy efficiency, and quality and profitability issues. In *Redesigning fishing vessels for today's changing fishery*, Professor Friis gave some examples of how he and his colleagues are helping create safer work-places in our fishery.

On November 17, Dr. Ken Snelgrove spoke to a very interested audience about the ability to predict and forecast the rate of river rise. Dr. Snelgrove gave a fascinating presentation on floods, drought, the quantities of stream flow necessary for pollution abatement, water supply, transportation and recreation and about research currently underway at Memorial incorporating stream flow within weather prediction models and climate forecasts, translating the impact of tomorrows thunder storm into flood warnings and global climate change into effective management of our future water resources.

On September 22 an audience of more than 60 people was captivated by Professor Adrian Bejan's theories on the connections between engineering and nature in our first Speaking of Engineering event of the semester. *Shape and Structure, from Engineering to Nature* was a renowned success as Professor Bejan, the J. A. Jones Distinguished Professor of Mechanical Engineering at Duke University, explained the shape that links engineering and nature and answered many questions from the audience. Among other things, he discussed the new guiding principle – that nature develops its architecture along the path of least resistance in his constructal theory of nature.

Please visit our web site to find out about our next *Speaking of Engineering*: ***www.engr.mun.ca***

Local conference offers something new to bring academics and industry together

Organizers of this year's Newfoundland Electrical and Computer Engineering Conference (NECEC) attracted more industry involvement this year. In the past, NECEC had offered paper submissions only, but for 2005, organizers invited local industry representatives to take part in a poster session. Dr. Cheng Li of the Faculty of Engineering and Applied Science is the communications chair for NECEC. He says most industrial authors do not have time to write a paper. "It's a community event so by offering this option, we brought the local community together so academics and industry could exchange ideas. Meanwhile the industry representatives could take part in the IEEE workshops and everyone else could get to know what's happing in industry."

NECEC 2005, the 15th such conference for the province, took place on Nov. 8. It was a forum where professionals in electrical, electronic and computer engineering as well as information technologies could present their work to the growing technical community within the province. The conference focused on technical concepts, innovations and implementations. Proceeds from the event and past conferences are used to sponsor IEEE scholarships, which are awarded to students in Terms 3 and 6 of the Electrical Engineering or Computer Engineering program at Memorial. The conference chair for NECEC 2005 was Faculty of Engineering alum Byron Dawe from Rutter Technologies Inc. and the technical committee was chaired by Dr. Eric Gill, an associate professor in the faculty.

For more information on NECEC, visit their Web site at ***http://necec.engr.mun.ca*** or contact Cheng Li at ***licheng@engr.mun.ca*** or (709) 737-8972.

News **BRIEFS**

Faculty gives a helping hand to a new company headed by high school students

The Faculty of Engineering and Applied Science is lending a helping hand to high school students creating their own company. The faculty is partnering with Junior Achievement Newfoundland and Labrador (JANL) and the Genesis Centre to sponsor some young entrepreneurs in the after school *Company Program*. The faculty and the Genesis Centre are each contributing $1,250 towards the *Company Program*, allowing 20-25 high school students the benefit of designing and running their own business in a safe, risk-free environment.

The newly formed company, Good Times Unlimited, are producing and selling CD clocks. Scott McIsaac is the company's president. "The sponsorship from the Faculty of Engineering, along with assistance from the Genesis Centre, means so much to our company. The faculty provides us with a meeting place, state of the art equipment, and an engineer as an adviser to help with any challenges we face." Mr. McIsaac says he's hoping to get some valuable business experience from the *Company Program*. "Our business must do everything a real business would do, including apply for incorporation, sell shares, elect an executive, set up a bank account, keep company records, liquidate the companies assets and close the business. New challenges come up every week." In addition to financial support, engineering professor Dr. Andy Fisher is volunteering his time as a mentor for the students, giving the students connections within the business world and sharing knowledge students would not get in a classroom.

JANL is a not-for-profit, charitable organization providing business and leadership education to elementary, junior high and high school students. There are currently about 400 students involved in the *Company Program – A Student Ventures* across the province. For more information about Junior Achievement, visit ***www.janl.org***.

PROFILES

Partner profile: London Offshore Consultants

For 15 years now, Ocean and Naval Architectural Engineering students from Memorial have been enjoying one of the world's most exciting cities while learning a great deal about maritime life as co-op students at London Offshore Consultants (LOC). But according to officials at LOC, the company has been the lucky one in this partnership. Andrew Squire is the company's group deputy CEO. He says LOC's affiliation with Memorial University first started in the 1990's when they were preparing to carry out work on the Hibernia project. LOC was acting as marine consultants to the development company and providing Marine Insurance Warranty Surveyor services. So, they established an office in St. John's and started participating in the Faculty of Engineering's co-op program.

"The first student to join us was Andrew Case, who was with us for two work terms and then finally joined the staff of our Singapore office when he graduated. Andrew has subsequently moved on to form his own company and is a well respected naval architect working in Singapore."

Mr. Squires notes that since then they have "enjoyed the presence of engineering students" every year for at least two work terms. "This has been a most rewarding experience for us as an organization and, we believe, for the students who have spent some time with us. Our offices are in the centre of the City of London, steeped in history and the experience of working in this location is, I am sure, something which will remain in the memories of those students who have spent time with us." He adds that, in addition to the bustling business environment, the various other cultural activities, including night clubs as well as the proximity and low cost travel to various European destinations has also been popular with co-op students.

Memorial's students have undertaken a large variety of assignments at LOC. The consultancy services provided by LOC involve the safe transportation and handling of high-value goods at sea. Ocean and Naval Architectural students have taken part in assessing the risks of various designs and activities, and in advising on how to minimize those risks. They have also simulated the manoeuvring of ships to assist in establishing the cause of collisions, prepared computer models to simulate ships sinking, carried out studies to evaluate the cause of the loss overboard of containers from barge container ships and assisted generally in the forensic analysis of ship casualties.

LOC employs around 80 professional maritime experts in London and has 10 offices around the world.

engineers without borders
ingénieurs sans frontières
Canada

Engineers Without Borders comes to Memorial

The Faculty of Engineering has joined 22 other university chapters across Canada in the fight against poverty. Engineers Without Borders Canada (EWB) is a leading charitable organization dedicated to reducing world poverty by promoting human development through access to technology. Their slogan: *Because technology can drive extraordinary change*. Term 6 mechanical engineering student Ed Martin is leading the Memorial chapter of EWB as a work term. He says they have 300 members signed up so far. "There is a strong international development movement in this country right now, and Newfoundlanders want to get involved but until now haven't had the proper conduit. Well, here it is and once people understand what Engineers Without Borders does and the great things that are happening in international development in this country, we hope to see that interest develop into action." He adds that he got involved in EWB because of what the organization was doing and he wants students at MUN to be exposed to that. "Nobody wants poverty but Engineers Without Borders is actually doing something about it. Now we can do our part and by doing so we will enrich the student environment at our university."

Members of EWB are passionate about helping people gain access to the technology they need to improve their lives by contributing their knowledge, financial resources, volunteer time, skills, and collective voice to help communities around the world. In the past four years EWB has sent over 70 young Canadian engineers to work on 35 projects in 20 countries. Closer to home, their 6,000 members across the country strive to make Canada the most development-friendly and sustainable country in the world.

The Memorial chapter is already busy raising funds to send two students on overseas development related work placements next summer. Mr. Martin says the majority of placements are in Africa. Last summer saw students sent to East Timor, Ghana, Zambia, Tanzania, Lesotho, Senegal, Guinea Bissau, Benin, Cambodia, Madagascar, Cameroon, Nepal, Indonesia and the Philippines. Mr. Martin says the biggest challenge they face is showing people that they can make a difference. "Most people agree with the cause and ideals that Engineers Without Borders is based upon and recognize that there are serious poverty-related problems in this world, but they don't feel like they can do anything about it…It's our job to let people know that they can be a big part of doing great things by getting involved with Engineers Without Borders."

STUDENT NEWS cont'd on page 18

For more information visit the national Web site at ***www.ewb.ca*** or the local chapter Web site at ***www.mun.ewb.ca*** or send them an e-mail at ***mun@ewb.ca***.

(left to right) Jeremiah McCarthy, Jordan Blackwood, Paul Magee of VOCM, Nicole Lynch and Tommy O'Dell

Student Society raises thousands for charity

The Engineering Student Society 'B' handed over a cheque worth $2,500 to the Janeway Children's Foundation recently. The students raised the money during their first annual Pi Throw. During the event, someone could buy a pie for $10 and have it delivered to anyone in St. John's and Mount Pearl. If you received a pie from someone you could take the pie in the face, buy the pie for $20, redirect the pie for $10, or choose not to participate.

"Most people who were 'pied' thought it was very funny and paid to buy the pie or had it redirected to someone else. One of my locations was Husky Energy and I made more than $200 there. I was there for about an hour and a half because people kept redirecting pies to their co-workers. I got 10 redirections on just one pie! It was a lot of fun." Ms. Lynch says she's hoping next year's students will keep this going and make it an annual event. Although, she says, a different charity will likely be chosen every year.

STUDENT NEWS con't from page 17

Graduate student only Canadian to win ASME award

Faculty of Engineering and Applied Science PhD student, Mohamed Awad, is one of nine students who won 2005-2006 college scholarships from the American Society of Mechanical Engineers International Petroleum Technology Institute, Petroleum Division. The objective of the petroleum division's student scholarship program is to promote student interest in engineering in the petroleum industry. The awards are based on recommendations from faculty advisers and GPA standing. The ASME petroleum division distributes $22,000 annually in scholarships. Mr. Awad's research focuses on two phase flow pressure drop modelling, which has a variety of applications including applications in the petroleum industry.

Faculty NEWS

New developments


Susan Tobin

As the new development officer for the Faculties of Engineering and Applied Science and Business Administration, my role is to work with the Office of Alumni Affairs and Development and support fund development for both faculties.

The Faculty of Engineering and Applied Science has been providing excellence in engineering education for over 70 years. Alumni of the Faculty of Engineering and Applied Science are helping communities around the globe, are outstanding entrepreneurs, and are winning awards for their contributions to society. Support from alumni and the community for the many initiatives of the faculty is a valuable component in the provision of a first class education for our students. Your assistance provides greater access to education for numerous students and provides a broader scope of student activities that greatly enhance their engineering experience. These services include: scholarships and fellowships; teaching resources; research and development; engineering outreach and interchange; student participation in competitions; and the publication of *Benchmarks*. Through your support, students are provided with opportunities that enrich their learning experience at Memorial.

Enhancing and complimenting the student experience adds tremendously to the education that our engineering graduates receive. Support of alumni and friends is key to providing this enrichment, and we hope we can count on your continued support in the future. In the upcoming years we will see a great deal of growth within the Faculty of Engineering and Applied Science. We hope you can join us as we move forward to meet the needs of our students, alumni, the engineering community and the province.

Susan Tobin
Development Officer

Research professor invited into the Canadian Academy of Engineering

University research professor Dr. Ian Jordaan has been invited to become a Fellow of the Canadian Academy of Engineering in "recognition of [his] notable achievements". The Canadian Academy of Engineering is an independent, self-governing and non-profit organization that was established in 1987 to serve the nation in matters of engineering concern. The Fellows of the Academy are professional engineers from all disciplines and are elected on the basis of their distinguished service and contribution to society, to the country and to the profession. The mission of the Canadian Academy of Engineering is to enhance, through the application and adaptation of science and engineering principles, the promotion of well-being and the creation of wealth in Canada. There are approximately 260 members.

Dr. Jordaan gives keynote address

At Port and Ocean under Arctic Conditions 2005 (POAC) conference in Potsdam, New York in June, Dr. Ian Jordaan gave a keynote address on *Decisions under Uncertainty* and presented two other papers, "Mechanisms of Ice Softening Under High Pressure and Shear" and "Principles for Local and Global Ice Design Using Pressure-Area Relationships". Dr. Jordaan also co-authored two other papers, which were presented by others.

Faculty **NEWS**

Professor and student recognized by the American Society of Mechanical Engineers

Dr. Rangaswamy Seshadri is being recognized for a paper he co-authored. Dr. Seshadri, professor and Canada Research Chair in Asset Integrity Management at the faculty, co-authored the paper with Memorial PhD candidate Hari Indermohan and Wolf Reinhardt of Babcock and Wilcox Company in Ontario. They received a Certificate of Appreciation for Outstanding Computer Technology Technical Paper from the American Society of Mechanical Engineers' Pressure Vessels and Piping Division. The paper is entitled, "Limit Load of Anisotropic Components Using the M-Beta Multiplier Method". Formal presentation of the Certificate was made during the Computer Technology Committee meeting at the 2005 Conference in Denver in July.

Civil Engineering professor presents at international conference

Engineering professor Dr. Hesham Marzouk was one of six keynote speakers from around the world invited to present at an international conference in Cairo, Egypt. The International Conference on Future Vision and Challenges for Urban Development was part of the Ministry of Housing, Utilities and Urban Communities, Housing and Building Research Center's 50th anniversary celebrations.

Dr. Marzouk presented on Utilisation of High Performance Concrete for Offshore Platforms, which highlighted research related to Hibernia. He also received an award of recognition for 20 years of research contributions and collaborations with Cairo University and Helwan University, also in Cairo.

Professor wins second international award

University research professor Dr. Aziz Rahman won his second international award in the past several months. Dr. Rahman travelled to Iran to accept the 18th Khwarizmi International Award for his "outstanding efforts in improving the effectiveness of science." The ceremony, which was attended by the President of the Islamic Republic of Iran, was held by the Iranian Research Organization for Science and Technology (IROST).

The Khwarizmi International Award, first given out in 1987, nurtures "the spirit of research and innovation in the various fields of science, technology, culture and religion through establishing research centers and encouraging innovators and researchers is clearly taken into consideration in the Islamic Republic of Iran's constitution."

In addition to his teaching, Dr. Rahman is a consultant to many companies, has published over 500 papers and is a registered professional engineer in Ontario and Newfoundland and Labrador, a member of IEE Japan, a fellow of IEEE, a fellow of IEE (UK), a life fellow of the Institution of Engineers, Bangladesh and a fellow of the Engineering Institute of Canada. Recently, Professor Rahman was the second Canadian in history to receive the 2004 William E. Newell Power Electronics Award for outstanding achievement.

Faculty and staff **NOTES**

Dr. Wei Qui – assistant professor (ocean and naval), July 2004
Dr. Andy Fisher – associate professor (mechanical), November 2004
Dr. Phillip Bording – Husky Energy Chair in Oil and Gas Research (joint appointment with the Department of Earth Sciences), January 2005
Dr. Andrew Vardy – assistant professor (electrical and computer – joint appointment with the Department of Computer Science), April 2005
Dr. Octavia Dobre – assistant professor (electrical and computer), April 2005
Dr. Ken Snelgrove – associate professor (civil), September 2005
Dr. Stephen Bruneau – assistant professor (civil), January 2006
Dr. Geoff Rideout – assistant professor (mechanical), January 2006

New Staff:

Darren Pitcher – manager of Finance and Administration, September 2004
Debbie Whalen – intermediate clerk steno, March 2004
Ryan McCarthy – engineering technologist, November 2004
Mathew Curtis – laboratory technologist, July 2004
Mike Foley – programmer consultant, March 2005
Susan Tobin – development officer, April 2005
Mary Daley – administration staff II, December 2005

Retirements:

Don Guy – engineering technologist
Austin Bursey – engineering technologist
Dr. Arisi Swamidas – professor
Bernie Healy – engineering technologist
Leo White – program manager, co-op
Dr. Ian Jordaan – university research professor
Dr. Gary Sabin - professor

The Engineering and Applied Science Advisory Council appoints a new Chair

The first Engineering and Applied Science Advisory Council (EASAC) was formed in 1999 to advise, guide, and facilitate the faculty; to excel and lead in educating engineers, researching, developing and disseminating existing and new engineering know-how; and to enable the faculty to achieve recognition as an engine in the provincial and national economies. The EASAC provides an independent voice on the direction of faculty and is made up of members appointed by the President. This includes at least 12 industry representatives, which includes government departments and agencies, and professional engineering organizations as well as private industry and private sector representatives, two recent graduates, and 13 members ex-officio.

The EASAC has some new external members including a new Chair, Mr. Trevor Adey of Consilient Technology. Other external members are:

Gunther Baumgartner, North Atlantic Refinery
Gilbert Bennett, NL Hydro
Gerry Brennan, Upstream Solutions Inc.
Byron Dawe, Rutter Technologies Inc.
Phonse Delaney, NF Power
Gary Follett, FGA Consulting Engineers
Mark McCloud, Chevron Canada Resources
Dave King, Genesis
Don Osmond, Municipal and Provincial Affairs
Lee Shinkle, Independent Consultant
Adam Stanley, Husky Energy
Hal Stanley, Independent Consultant
Dan Walker, Oceanic Consulting Corporation
Judith Whittick, C-CORE
Mary Williams, IOT
Ruud Zoon, White Rose Oilfield Project

The EASAC meets at least once a year at the call of the Chair to consider matters brought before it by the Dean or other members of the Council. The Council discusses issues related to the interface of the faculty with the industrial community and the private sector, including review of plans for new developments; exchange of scientific and engineering information; professional development of faculty members; professional development programs for industry; research and development activity; cooperative engineering education; transfer of research outcomes to industry (including product development and commercialization); employment opportunities for engineering graduates; evaluation of program content; and recruitment and retention.

Memorial University of Newfoundland

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