

BENCHMARKS

FACULTY OF ENGINEERING AND APPLIED SCIENCE NEWSLETTER

FALL 2012



OIL AND GAS
INDUSTRY AWAITS
ENGINEERING
GRADUATES 3

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IT IS MY PLEASURE to welcome you to the 2012 edition of *Benchmarks*.

Each year we use this publication to give the engineering community a glimpse into the news, activities and research taking place inside the Faculty of Engineering and Applied Science. Quite often, those of you reading *Benchmarks* find yourselves included in the articles, be you one of our students, a faculty member or one of our partners from government and industry.

As you will learn in the pages that follow, a lot of news has come out of the Faculty of Engineering and Applied Science in the past year. We watched as our founding dean, Dr. Angus Bruneau, was inducted into the Order of Newfoundland and Labrador; we saw Memorial University's Alumna of the Year award go to one of our graduates; we welcomed new research chairs, and we continued to receive valuable support from our partners in government, industry and academia.

Of course, we also enjoyed seeing another group of engineering students receive their degrees. We have watched these students mature and develop over the years and as always, it was gratifying to see them graduate from our program. Many of our graduates left the classroom and walked directly into professional positions, while others decided to further their engineering careers by pursuing graduate degrees. We are immensely proud of all of them and wish each of our graduates good luck in the future.

Overall, the past year has largely been about growth. The faculty worked together to develop a plan that envisaged doubling the size of the faculty over the next eight years. After receiving full endorsement by the university, this plan was submitted to the provincial government. The recent provincial budget included \$1.7 million for the growth of our faculty, which is especially significant since this is exactly the amount we requested.

We also added new faculty and staff this year and watched as construction began on the expansion of the S.J. Carew Building, our home on Memorial University's St. John's campus. This growth is not only obvious by looking at the size of our building or faculty; it is also a mindset the entire Faculty of Engineering and Applied Science has embraced.

We are moving forward with new ideas and initiatives, contributing to the profession of engineering and the many people and industries it affects. With the help of our partners, government, academia and industry, as well as our faculty, staff and students, we are setting the bar high and look forward to surpassing this mark.

Thank you,

R. (Venky) Venkatesan
Dean, *pro tempore*
Faculty of Engineering
and Applied Science

BENCHMARKS

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Oil and gas industry awaits engineering graduates

A **GROWING** number of Memorial University engineering graduates are finding successful careers in the offshore petroleum industry, thanks in large part to the ever-developing relationship between the oil and gas sector and the Faculty of Engineering and Applied Science.

Engineering and Applied Science has long had strong ties to the oil and gas industry, and that affiliation continues to grow stronger each year. As a result, an increasing number of students are enrolling in the engineering program with aspirations of working in oil and gas related fields.

"We are providing a direct link to the petroleum industry for graduating high school students," says Dr. R. (Venky) Venkatesan, dean *pro tempore* of the Faculty of Engineering and Applied Science. "High school students realize they can come to Memorial, earn a degree in any of our six engineering disciplines, and have a position in the oil and gas industry waiting for them upon graduation."

The Faculty of Engineering and Applied Science prepares its graduates for careers in the petroleum industry through each of its undergraduate

majors. Engineering students majoring in process engineering, civil engineering, computer engineering, electrical engineering, mechanical engineering and ocean and naval architectural engineering all have the opportunity to study courses associated with the petroleum sector.

PROCESS ENGINEERING

The process engineering program is a popular choice for many students who want to move on to the oil and gas industry. Process engineers specialize in taking a raw material such as crude oil



and making it into a valuable product for clients and consumers. Memorial University is one of the first universities in Canada to offer a major in process engineering.

“In the chain of activities that takes place to make oil and gas a viable product, process engineering is one of the most crucial activities,” said Dr. Faisal Khan, discipline chair of process engineering at MUN. “Crude oil has to go through certain processes before it goes to market. This is where process engineers come into play and help make it a very valuable product. As a result, process engineers are highly sought after by the petroleum industry.”

MECHANICAL ENGINEERING

Memorial’s mechanical engineering discipline has had a focus on oil and gas available to students for several years. In recent years, close to half of Memorial’s

mechanical engineering students have chosen to follow this stream.

While these students are clearly headed for careers in the petroleum industry, often within the province of Newfoundland and Labrador, they are not the only mechanical engineering graduates who will make their way to the petroleum industry. Mechanical engineers in general have always been heavily recruited by companies in that industry, thanks to the courses they study during their time at Memorial.

“Mechanical engineers are known for being versatile, so they are pursued by a number of different industries, including oil and gas,” said Dr. Nicholas Krouglicof, chair of Memorial’s mechanical engineering discipline. “Several of our mechanical courses, as well as courses offered by the other engineering programs at MUN, have applications toward oil and gas. Our students may be doing mechanical

systems design, materials or structural work, so they can help an oil and gas company in a number of ways.”

Dr. Krouglicof points out that a great number of undergraduates enrolled in mechanical engineering join oil and gas companies during their co-operative education work terms. He says the oil and gas industry is eager to work with Memorial’s undergraduate co-op students because these young men and women are prepared to make an immediate contribution to the companies.

OCEAN AND NAVAL ARCHITECTURAL ENGINEERING

The petroleum industry has long had a keen interest in Memorial’s ocean and naval architectural engineering (ONAE) graduates. The vast majority of ONAE graduates from Memorial go on to work in the petroleum industry, specifically upstream production.

Some of these graduates work directly for oil and gas companies, while others are recruited by engineering firms that work in the petroleum industry. There have been years when every ONAE graduate from Memorial secured a job, directly or indirectly, in the oil and gas sector immediately following convocation.

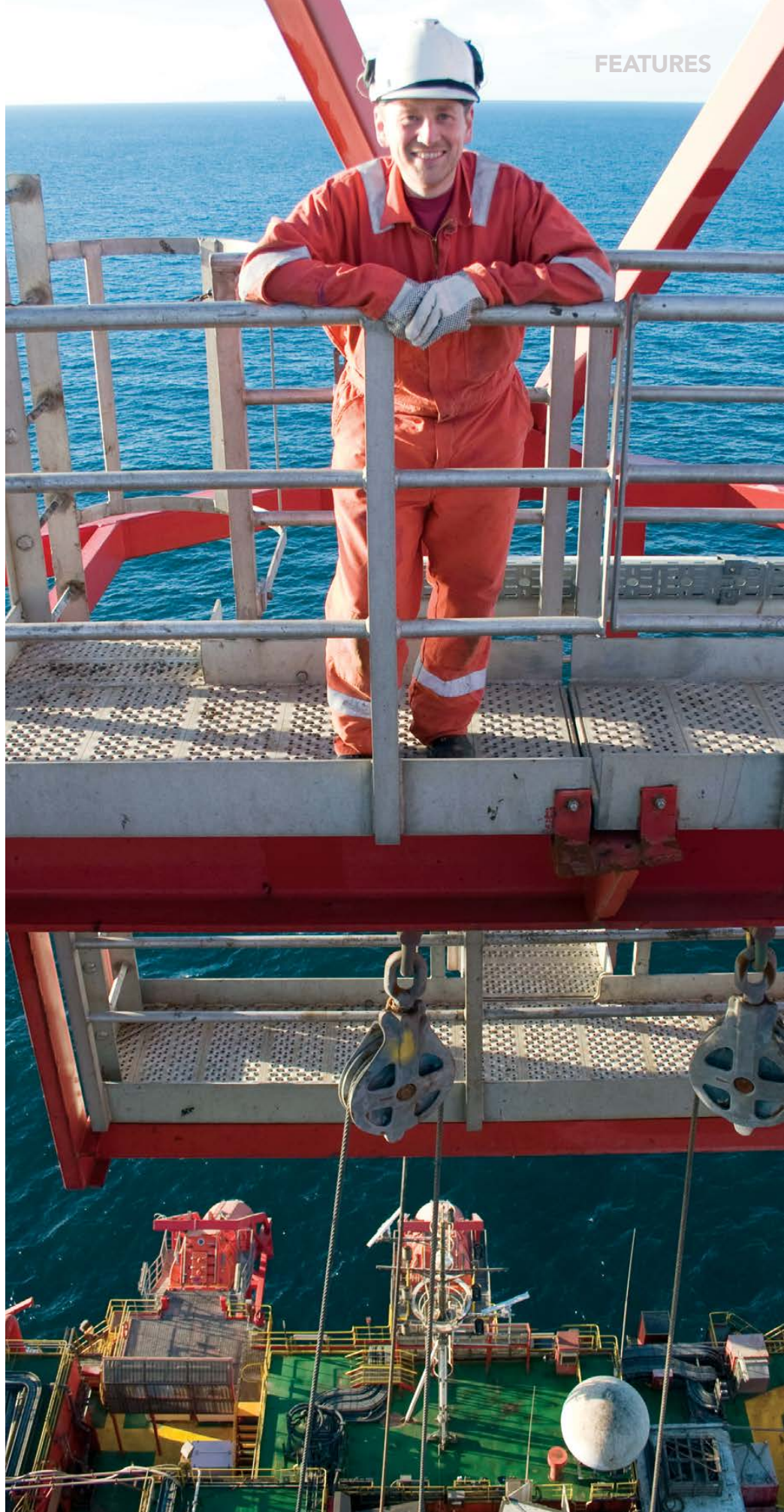
"The petroleum industry requires a lot of engineering, so it is a sector that needs all kinds of engineers. In addition to the actual processing needs, there are platforms and ships that need to be designed, tested and constructed," said Dr. Claude Daley, chair of Memorial's ONAE discipline. "The vast majority of the research done in ocean and naval architectural engineering is tackling issues important to oil and gas development."

CIVIL ENGINEERING

Memorial's civil engineering discipline also produces highly sought after graduates for the petroleum industry, in part because it is such a broad field that encompasses several distinct areas of specialization. "Many emerging areas of civil engineering are important to the offshore oil and gas sector, particularly environmental risk assessment and management, offshore structural safety and maintenance, infrastructure engineering and real-time condition monitoring," says Dr. Amgad Hussein, chair of the civil engineering discipline at Memorial University.

ELECTRICAL AND COMPUTER ENGINEERING

The oil and gas industry is rapidly growing and changing; new technologies, concerns and opportunities arise on a regular basis. As a result, it can be a complex industry that needs a variety of experts and specialists to make it run smoothly. It is this complexity and diversity that makes the industry a



FEATURES

“Oil and gas companies hire electrical and computer engineers, process engineers, civil engineers, mechanical engineers and ocean and naval architectural engineers. Memorial is recognized as having a quality engineering program and our students learn pretty quickly what they need to be successful in the oil and gas industry.”

– Dr. Dennis Peters

natural option for engineering students.

“This industry encompasses a huge variety of specializations, including all of the engineering disciplines offered at Memorial University,” said Dr. Dennis Peters, chair of Memorial’s computer and electrical engineering disciplines. “Oil and gas companies hire electrical and computer engineers, process engineers, civil engineers, mechanical engineers and ocean and naval architectural engineers. Memorial is recognized as having a quality engineering program and our students learn pretty quickly what they need to be successful in the oil and gas industry. Students in electrical and computer engineering have found satisfying work terms and careers in the oil and gas industry for many years and this trend is expected to continue and grow.”

CO-OP STUDENTS HAVE IMPACT

As a result of the depth and comprehensiveness of Memorial’s Engineering programs and research, engineering students are able to make an immediate impact in the oil and gas industry, even when taking part in co-operative work terms prior to graduation.

A good example is the work of Laura Pittman, a fifth-year mechanical engineering student. Ms. Pittman took part in a work term with Shell Canada’s Deep Basin Drilling Team from May 2011 to Aug. 2011, during which time her chief goal was to complete a competitor study of horizontal wells in the Deep Basin East area.

Ms. Pittman’s original scope included a study of competitor designs and practices, which was expanded to include the analysis of time and cost performance. The future cost savings per well resulting from her research is expected to provide significant financial benefits for Shell.

Ms. Pittman was rewarded for her efforts early in 2012 when she was named the 2011 Canadian Association for Co-operative Education (CAFCE) Co-op Student of the Year. It marked the first time a Memorial student won this prestigious award.

“Each engineering discipline approaches it differently, but there is oil and gas potential in every engineering discipline offered at Memorial,” said Professor Andy Fisher, associate dean, undergraduate studies, with Memorial’s Faculty of Engineering and Applied Science. “A wide variety of oil and gas career options exist for our graduates. Students such as Ms. Pittman are an indication of how quickly a Memorial Engineering student can find success in the oil and gas industry.”

EDUCATION, RESEARCH AND INDUSTRY COME TOGETHER

The faculty’s graduate office plays a key role in helping engineers upgrade

their training in order to move into the petroleum sector, or to advance their careers in this industry. Of particular relevance is the course-based master of oil and gas degree; however, all graduate programs provide opportunities to focus on oil and gas related challenges.

A new graduate program will soon debut – the postgraduate diploma in safety and risk engineering, according to Dr. Leonard Lye, associate dean of graduate studies.

“The program will be an attractive option for engineers in the oil and gas industry, given that it will provide advanced education and training in the dynamic field of safety and risk engineering, an area in which there is currently a shortage of engineers,” he explained.

RELATIONSHIP CONTINUES TO GROW

In addition to the petroleum-related undergraduate and graduate options available at Memorial, the faculty also has a number of professors and graduate students leading cutting-edge research into the oil and gas sector. The engineering faculty currently has three petroleum-industry-funded research chairs and is in the process of recruiting three more.

A solid relationship clearly exists between Memorial Engineering and the oil and gas industry, with the link between the two continuing to grow stronger. The petroleum sector is a major economic player in Newfoundland and Labrador, and as its needs grow, so will Memorial’s capacity to meet those needs.

“We are always working to enhance our relationship with the oil and gas industry,” said Dr. Cecelia Moloney, acting associate dean of research. “With our research and the programs and courses we offer, we are preparing a whole new generation of engineers who will work in the oil and gas industry.” ■

Dr. Angus A. Bruneau inducted into Order of Newfoundland and Labrador

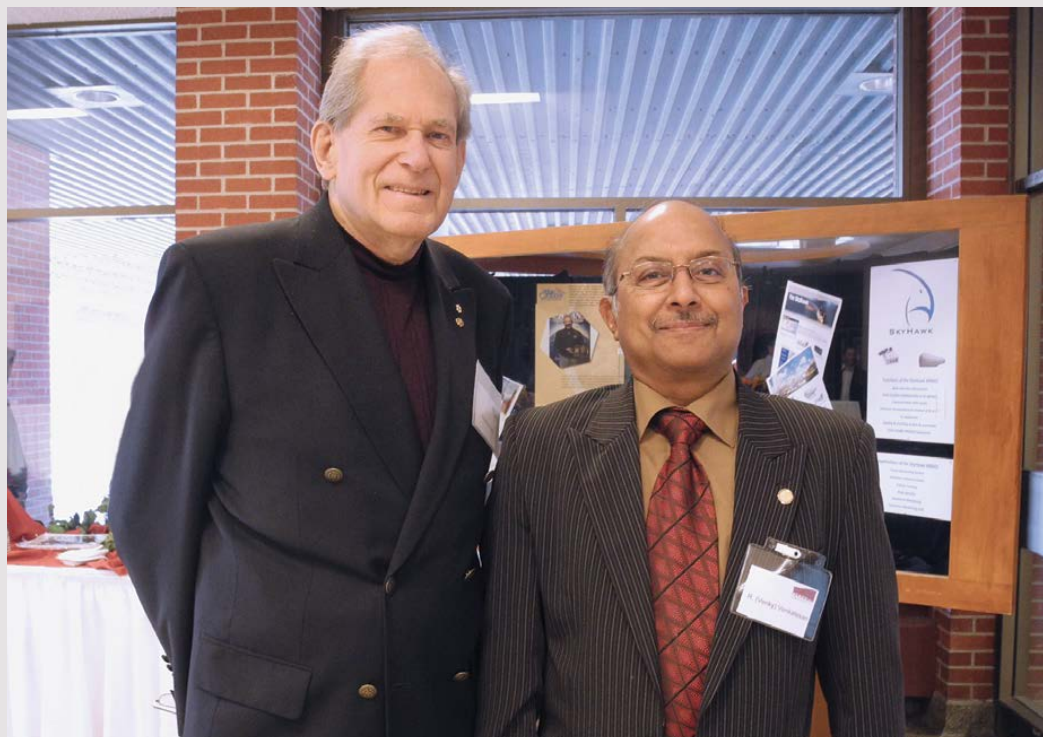
THE FOUNDING dean of the Faculty of Engineering and Applied Science at Memorial University of Newfoundland has been recognized with the highest honour bestowed by the province.

Dr. Angus A. Bruneau (OC, Ph.D., P.Eng.) was inducted into the Order of Newfoundland and Labrador, as announced by Lt.-Gov. John Crosbie on Aug. 22, 2011. The Order of Newfoundland and Labrador recognizes individuals who have demonstrated excellence and achievement in any field of endeavour benefiting Newfoundland and Labrador and its residents in an outstanding manner.

Dr. Bruneau officially received the honour during a ceremony at Government House on Sept. 13, 2011.

"Dr. Bruneau is a very deserving recipient of the Order of Newfoundland and Labrador. I take great pride in congratulating him on earning a spot in a very prestigious group," said Dr. R. (Venky) Venkatesan, dean pro tempore, Faculty of Engineering and Applied Science at Memorial University. "Dr. Bruneau played a pivotal role in establishing the Faculty of Engineering and Applied Science and his guidance and vision helped shape its programs and direction for many years. He has made several outstanding contributions to Memorial University and the province of Newfoundland and Labrador and it is fitting he is now receiving the highest honour the province can award."

After working to establish the Faculty of Engineering and Applied Science at Memorial, Dr. Bruneau went on to become the faculty's first dean, holding the position from 1968 to 1974. He



Dr. Angus Bruneau and Dr. R. (Venky) Venkatesan during a recent event hosted by the Faculty of Engineering and Applied Science.

played a significant role in launching the faculty's co-operative education program, one of only two such programs available in Canada at that time.

Thanks in part to his early leadership, Memorial's Faculty of Engineering and Applied Science is now among the most respected in the country.

Dr. Bruneau's support of Memorial University continues to this day. In 2007 he and his wife Dr. Jean Bruneau made a generous donation of \$1 million to the university, a gift that continues to fund the Angus Bruneau Student Leadership and Innovation Fund in Engineering, which provides life-changing opportunities to students in Memorial's Faculty of Engineering and Applied Science.

He is among eight people elected to the Order of Newfoundland in 2011.

"These men and women exemplify the reasons for which the Order of Newfoundland and Labrador was established," said Mr. Crosbie in a media release announcing the 2011 recipients. "These outstanding individuals, through passion and dedication to the endeavours which each has pursued, have contributed immensely to the strong, proud and caring community which characterizes Newfoundland and Labrador today. I will be honoured to recognize their achievements and contributions by investing each into the Order of Newfoundland and Labrador." ■

Provincial budget supports Faculty of Engineering and Applied Science initiatives

SUPPORT for core science infrastructure planning at Memorial University and new funding for its Faculty of Engineering and Applied Science and the Marine Institute were among the highlights of the 2012 provincial budget, according to the institution's president, Dr. Gary Kachanoski.

"One of our major priorities is the development of new core science learning and research facilities," said Dr. Kachanoski. "Memorial's existing science infrastructure was largely developed in the 1960s. This budget will enable us to start the planning process for creating more 21st-century facilities to grow our research and education programs and to support the future diversification of the province's economy."

The provincial budget provides funding for a number of operational initiatives at Memorial including \$1.7 million for expansion of the Faculty of Engineering and Applied Science, enabling enrolment growth, recruitment and enhanced co-operative placement services. In addition, more than \$2 million was allocated to increase base funding at the Marine Institute for new and expanded educational programming, research and student services for continued growth in the oceans sector.

"These are both areas where we had

indicated that we need to see growth, especially as Memorial works with government and industry to further advance the ocean technology sector in the province," Dr. Kachanoski said.

The 2012 budget announced by the Government of Newfoundland and Labrador specifically mentioned infrastructure planning. It stated: The Government of Newfoundland and Labrador recognizes the critical role of modern infrastructure at Memorial University to propel its economic strategy, especially related to ocean science and technology. The provincial government will work closely with Memorial to identify priorities and begin the planning process for future projects.

Dr. Kachanoski welcomes the initiative from the provincial government.

"We look forward to working with government and others in the science and tech community in the province to develop the plans for this much-needed infrastructure renewal program," he said.

The budget includes a continuation of the tuition fee freeze at the university, which is coupled with the allocation of special funding that the province provides to ensure the university's operating budget is not negatively affected as a result of the ongoing freeze.



"The province's tuition fee policy has always had two components," explained Dr. Kachanoski. "The fees are frozen for students, but the government provides extra annual funding to ensure that the university can cover additional costs that may have in the past required a tuition fee increase. So, to maintain tuition fees at such a low level and to continue to provide Memorial's top level of instruction and student services, this special funding is required."

The budget also continues funding for a number of ongoing projects and initiatives approved in previous provincial budgets, including \$40.8 million for the construction of new residences at Memorial University's St. John's and Corner Brook campuses for a total commitment of \$88.3 million. This will create 500 residence beds in St. John's and 200 residence beds at Grenfell Campus in Corner Brook.

"The province's future challenges are significant, especially when it comes to economic diversification," said Dr. Kachanoski. "The university is expected to play a leadership role in providing the infrastructure and the knowledge base on which that diversification can be nurtured. So investments in Memorial – in our students and our research and our infrastructure – are, in reality, investments in the future of the entire province. This budget should enable us to continue to roll out our new Research, Teaching and Learning, and Engagement frameworks." ■

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– Dr. Gary Kachanoski

Engineering graduate honoured by Memorial University

RHONDA ZYGOCKI enjoyed a warm homecoming present when she returned to Memorial University in the Fall of 2011. Ms. Zygocki, a senior executive with Chevron, received the prestigious 2011 Alumna of the Year Award, 31 years after graduating from the Faculty of Engineering and Applied Science.

Ms. Zygocki began her career with Chevron supervising oil rigs in central Alberta, and has continued to take on challenging roles of increasing responsibility that have taken her all over the world.

Currently the executive vice-president of policy and planning, Ms. Zygocki holds one of the most senior executive positions with Chevron's global operations. Her progressive corporate policy initiatives in the areas of strategy and planning, health, environment and safety on behalf of Chevron have been felt worldwide.

Ms. Zygocki is a mentor and leader, contributing to innumerable boards while also giving of her time and expertise to guide young people in the infancy of their careers. Her work extends far beyond the San Francisco Bay area she currently calls home. She is a dedicated ambassador for Memorial University and a steadfast contributor to the growth of her alma mater.

"Rhonda Zygocki has been a pioneer in a career with Chevron that spans more than 30 years that has taken her around the globe," said Rex Gibbons of the alumni awards selection committee. "She continues to do remarkable work as a corporate leader and in her dedication to the greater community. Ms. Zygocki is a



Rhonda Zygocki of Chevron Canada and Dr. R. (Venky) Venkatesan, dean *pro tempore*, Faculty of Engineering and Applied Science.

very deserving recipient of the Alumna of the Year Award."

During her visit to Memorial, Ms. Zygocki addressed a large group of engineering students and faculty in the Bruneau lecture theatre. During her presentation, she stressed the important roles engineers play in all regions of the world and reminded the young students that an engineering degree from Memorial University will give them multiple career options from which to choose.

"I can still remember sitting in this lecture theatre for classes. It really doesn't seem that long ago," Ms. Zygocki said. "I want the students to know that in whatever field they are interested in working, they will have the opportunity to work close to home or around the world. Engineering is a challenging profession but it is also a very rewarding and exciting career."

Other winners from the 2011 Alumni Tribute Awards included Krista Power, a research scientist and professor, who accepted the Horizon Award for exceptional achievement under the age of 35. Fred Best, the long-serving mayor of Clarendville, received the Outstanding Community Service Award. Elizabeth Scammell-Reynolds won the J.D. Eaton Award for exceptional leadership and outstanding service to Memorial.

"This year's group of Tribute Award winners is defined by remarkable talent and accomplishments, as well as incredible contributions both to Memorial and their communities," said Brian King of the Tribute Awards selection ceremony. "Memorial has been a big part of their lives and they continue to maintain strong ties with our university." ■

Dr. Ian Jordaan named to Royal Society of Canada

MEMORIAL UNIVERSITY'S

Dr. Ian Jordaan and Dr. Danny Summers were named Fellows of the Royal Society of Canada's Academy of Science in recognition of their distinguished work to date. Dr. Jordaan is a University Research Professor and a Professor *Emeritus* in the Faculty of Engineering and Applied Science at Memorial University, as well as being a principal consultant in Ice Engineering at C-CORE.

Dr. Summers is a University Research Professor with Memorial's Department of Mathematics and Statistics.

Dr. Jordaan is a pre-eminent engineer working on design of offshore structures in harsh environments. The author of more than 200 papers and reports, as

well as a book on probabilistic analyses for engineering, *Decisions Under Uncertainty*, he has pioneered the risk-based approach to offshore engineering and estimation of structural loads caused by ice. He has also worked extensively on the mechanics of ice compressive failure, and has developed theories that explain the high local pressures experienced by ships and structures in ice.

He has consulted on major Canadian and international projects, including the Terra Nova, White Rose and Hebron developments and the Confederation Bridge.

"I've always been very focused on my work and take pride in what I do. It is very rewarding to look at something like the Confederation Bridge and know

that I helped make it possible," said Dr. Jordaan. "It is a great honour to have my work recognized in this way by my peers."

Dr. Summers is also very pleased with being named a Fellow of the Royal Society of Canada.

An internationally recognized space physicist, Dr. Summers is best known for his research on "killer electrons", energetic elementary particles produced during magnetic storms in the Earth's atmosphere that have the power to shut down or critically damage satellites and spacecraft.

As lead investigator, he co-authored a paper describing a mechanism for creating these particles, which is widely cited as the leading candidate for explaining this phenomenon – considered a holy grail of space physics.

The Royal Society of Canada (RSC) is the senior national body of distinguished Canadian scholars, artists and scientists and is Canada's national academy. The primary objective of the RSC is to promote learning and research in the arts and sciences.

The RSC comprises nearly 2000 Fellows, men and women who are selected by their peers for outstanding contributions to the natural and social sciences, in the arts and in the humanities. As Canada's national academy, the RSC exists to recognize academic excellence, to advise governments and organizations, and to promote Canadian culture.

Dr. Jordaan and Dr. Summers were officially inducted into the Royal Society of Canada at a ceremony in Ottawa in November, 2011. Dr. Jordaan entered RSC's Division of Applied Science and Engineering, while Dr. Summers entered the Mathematics and Physical Sciences Division. ■



Dr. Ian Jordaan during the ceremony at which he was officially welcomed into the Royal Society of Canada.



From left to right: Mark MacLeod and Rhonda Zygocki of Chevron and Dr. Kachanoski.

Chevron Canada contributes \$2 million in support of students at Memorial

CHEVRON Canada and Memorial University of Newfoundland have announced a significant expansion of their partnership.

A financial contribution of \$2 million has been made by Chevron Canada to Memorial to fund scholarships, bursaries and international co-operative education opportunities. This gift from Chevron Canada is the single largest contribution toward student financial support that Memorial University has ever received.

The funding will be provided to Memorial this year and will flow to both undergraduate and graduate students studying at the university during the next 10-plus years. Students studying engineering, earth sciences, business and economics will be eligible for the various awards.

"This generous contribution from Chevron Canada will significantly enhance Memorial's capacity to financially support students in these key academic areas," said Dr. Gary Kachanoski, president and vice-chancellor, Memorial University. "By investing in students in this way, Chevron Canada is providing essential assistance

as well as invaluable academic encouragement, laying important groundwork for their future achievements."

The \$2 million in funding has been distributed in the following manner:

- \$900,000 of the funding will be used for graduate student support. Commencing in 2012, six merit-based Rising Star Awards valued at \$15,000 each will be provided annually for 10 years. Approximately 80 per cent of these awards will be provided to earth sciences student applicants;
- \$480,000 of the funding will be used to provide 12 undergraduate awards of \$4,000 each annually for 10 years, starting this year;
- \$420,000 will be used to create an endowment fund that will provide up to eight annual undergraduate awards in perpetuity, starting this year. Initially, these awards will be valued at \$2,000 each;
- \$200,000 will be used to create a term fund for international co-operative education support. Starting in 2012, three international placements will be sup-

ported annually; two at \$7,500 and one at \$5,000.

Priority for these awards will be for applicants who are taking a work term with an employer in the oil and gas industry.

"Chevron Canada is a proud, long-standing member of the Newfoundland and Labrador community," said Mark MacLeod, Atlantic Canada vice-president, Chevron Canada. "We are proud of the many partnerships we have established in the province, and we look forward to growing our very successful partnership with Memorial University of Newfoundland even further."

In 2008, Memorial was selected for Chevron Canada's University Partnership Program. Through this program, support is provided to a global network of more than 95 colleges and universities to develop talent in key academic disciplines, foster research capacity, increase community engagement and build relationships critical to the global workforce and meeting the world's energy demands. ■



Memorial's marine safety expertise featured in Discovery Channel Titanic coverage

THE STORY of the Titanic is well known as one of the greatest marine tragedies in history, yet from the loss came significant advances in marine safety. A team of Discovery Channel producers and videographers visited Memorial University in April to learn more about how the sinking of the Titanic 100 years ago continues to influence life today, particularly with respect to research that improves safety at sea.

In the Faculty of Engineering and Applied Science, the Discovery Channel cameras captured a series of ice crushing experiments that illustrate ice/structure interaction. The experiments are part

of the Sustainable Technology for Polar Ships and Structures (STePS2) project, which aims to improve our understanding of high energy collisions between marine ice and steel structures, ultimately leading to improved ship design.

In the School of Human Kinetics and Recreation, Daily Planet's Alan Nursall took a dip in the cold water dunk tank to experience what passengers felt when entering the North Atlantic without thermal protection. He re-entered the dunk tank, this time wearing a survival suit, to better understand how advances in research and technology have led to a greater chance of survival.

The Marine Institute's Centre for Marine Simulation (CMS) used its state-of-the-art, full mission ship's bridge simulator, a 360-degree visual- and full-motion platform, to uniquely illustrate the Titanic voyage. Using a complete ship model of the Titanic, the CMS team was able to run several simulations for the Discovery Channel to illustrate the effect of ship speed, location of the lookout and detection of different sized ice.

The episode of Daily Planet featuring these stories aired on Discovery Channel on April 12. ■

Seminar series highlights graduate student research

IN EARLY 2012, the Faculty of Engineering and Applied Science at Memorial launched a weekly seminar series to showcase graduate student research.

Beginning on Jan. 20, weekly seminars from graduate students took place in front of faculty, staff and students, highlighting research projects undertaken by engineering graduate students. The lecture themes have been wide ranging, topical and informative.

"Seminars such as these are a great way to promote student research at Memorial and provide insight into the type and quality of research undertaken by the Faculty of Engineering and Applied Science," said Dr. Yuri Muzychka, professor, mechanical engineering. "They are also a wonderful way for students to practise for upcoming comprehensive exams, thesis seminars, paper presentations for upcoming conferences

and for presenting summaries of on-going work. Engineering faculty members are also encouraged to participate."

The research seminar series lectures take place on Friday afternoons in EN-4000. All faculty, staff and students from the Faculty of Engineering and Applied Science and from throughout the university are encouraged to attend. Refreshments and snacks are available after each seminar. Admission is free. ■



From left to right: Gary Karasek, who graduated with Mr. Forgeron; Phonse and Maureen Forgeron, Mr. Forgeron's parents and Deanna Field, the portrait artist.

Memorial announces Dennis Forgeron Award in Mechanical Engineering

A **NEW SCHOLARSHIP** that will honour the memory of a deceased alumnus was introduced on May 18 by Memorial University's Faculty of Engineering and Applied Science.

The Dennis Forgeron Award in Mechanical Engineering was introduced by members of the engineering faculty, including dean *pro tempore* Dr. R. (Venky) Venkatesan, as well as family and friends of Mr. Forgeron.

"On behalf of the Faculty of Engineering and Applied Science, I wish to thank the family and friends of Dennis Forgeron for spearheading the creation of this new scholarship," said Dr. Venkatesan. "Scholarships give our students something to work toward and offer much appreciated financial assistance for the young men and women in our faculty. We look forward to presenting the Dennis Forgeron Award in Mechanical Engineering to deserving students in the years to come."

Mr. Forgeron was a native of Sydney, NS, who graduated from Memorial University with a mechanical engineering degree. He went on to enjoy a very successful career as a mechanical engineer, working both overseas and in Canada. In 1999, he established Forent Energy Ltd., a company with interests in natural gas in Calgary, AB. He served as the company's chief executive officer until he passed away in August 2010 in a plane crash near his hometown of Sydney.

Members of Mr. Forgeron's family and his close friend Gary Karasek, who also earned an engineering degree from Memorial, came to St. John's to launch the Dennis Forgeron Award in Mechanical Engineering. They also presented a commissioned portrait of Mr. Forgeron that will be displayed in the senior mechanical project laboratory in the S.J. Carew Building.

"It is an honour to have this scholarship

named after a Memorial engineering graduate who achieved wonderful success in the field of mechanical engineering throughout his career," said Dr. Venkatesan. "The Dennis Forgeron Award in Mechanical Engineering will help us all pay tribute to the memory of Mr. Forgeron." ■

"It is an honour to have this scholarship named after a Memorial engineering graduate who achieved wonderful success in the field of mechanical engineering throughout his career."

– Dr. R. Venkatesan

Engineering and Applied Science hosts vigil honouring women of l'École Polytechnique

STUDENTS, faculty and staff from across the university took time to pause and reflect during a special ceremony in the Angus Bruneau Lecture Theatre on Dec. 6 as Memorial University commemorated the anniversary of the tragic 1989 Montreal Massacre.

Fourteen women were killed because of their gender at l'École Polytechnique in Montreal, PQ on that day. The anniversary coincides with the National Day of Remembrance and Action on Violence Against Women established in 1991 by the Parliament of Canada.

This year's vigil reflected on how to keep the events of Dec. 6 relevant to all generations and continue to connect campus and community-wide efforts to end violence against women in Newfoundland and Labrador.

"The impact of what happened at l'École Polytechnique on Dec. 6 was felt across Canada. It sent shock waves across the country that are still felt today. That is why we gather together every year; to remember the young women

"An important aspect of the Dec. 6 vigil is that it allows a new generation of students to appreciate and learn about what happened 21 years ago in Montreal."

– Dr. R. Venkatesan

Photo provided by the Sexual Harassment Office of Memorial University



who lost their lives," said Dr. R. (Venky) Venkatesan, dean *pro tempore*, Faculty of Engineering and Applied Science. "Although this tragedy occurred in Montreal, it is a personal experience for anyone working in a university at that time. The fact the shootings took place at an engineering school was not lost on us within Memorial's Faculty of Engineering and Applied Science. We did not know the women in Montreal who died, but we could only imagine how similar they likely were to the engineering students we taught on a daily basis."

This year's vigil included a candlelight procession of 14 Memorial students: one representative for each of the women who were lost. Dr. Venkatesan offered remarks, as did Lorraine Michael, MHA and leader of the NDP provincial party.

Dedications were offered by students,

faculty, staff and community organizations with performances by the SUNCOR Quartet, a string quartet comprised of students from the School of Music's master of music program.

The vigil is organized annually by Memorial's Sexual Harassment Office and the Department of Gender Studies.

"An important aspect of the Dec. 6 vigil is that it allows a new generation of students to appreciate and learn about what happened 21 years ago in Montreal," Dr. Venkatesan said. "Many of our students were not even born when this tragedy took place; they rely on vigils such as this to connect with a tragedy that was before their time. The Dec. 6 vigil allows those of us who remember the events at l'École Polytechnique to connect with young students who are still learning about it today." ■

In demand

Dr. Bing Chen sought after by academia, government and industry for expertise into offshore oil spills

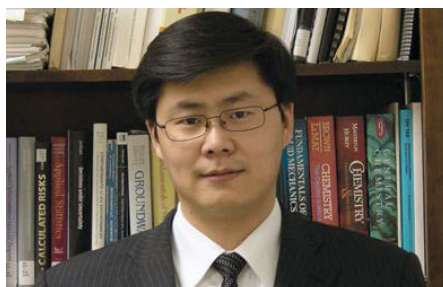
DR. BING CHEN has quickly become a highly sought-after researcher in the field of offshore oil spills and is taking his expertise and experience to officials in government, industry and academia.

Dr. Chen, an associate professor of civil engineering with the Faculty of Engineering and Applied Science at Memorial University, has been asked to speak at numerous colloquia and conferences and was invited to join the Global Young Academy (GYA). The GYA, which is supported by the Inter-Academy Panel (IAP), is a group of independent researchers who combine the highest level of research excellence with a demonstrated passion for delivering impact.

Much of Dr. Chen's research stems from his work as head of the Northern Region Persistent Organic Pollution Control (NRPOP) Laboratory, which was founded by the Canada Foundation for Innovation (CFI) and the Industrial Research and Innovation Fund (IRIF) and is housed within the Faculty of Engineering and Applied Science.

Dr. Chen specializes in integrated modelling and experimental research into simulation, control and remediation technologies that mitigate the contamination caused by environmental pollutants, especially petroleum hydrocarbons. The research enhances the understanding of the pollution mechanisms and also helps governments and industries improve their environmental performance and capacity in reducing the impacts of pollution problems. The research could lead to short and long-term environmental, economic and social benefits.

"We develop cutting-edge techniques and tools to simulate and treat oil spills and create a multi-disciplinary environment to recruit and train highly qualified



Dr. Bing Chen

people. We are working to create innovative technologies and sustainable strategies that will better treat and manage an oil spill in coastal and marine environments," said Dr. Chen.

Dr. Chen's work is catching the attention of industry, government and education leaders around the world, particularly after the Deepwater Horizon oil spill in the Gulf of Mexico in 2010, one of the largest accidental marine oil spills in the history of the petroleum industry. In the past year, Dr. Chen has been recruited by the China Country Office of the United Nations Development Program to aid that group's preparation of a strategic plan designed to deal with the threat of an offshore oil spill and the environmental issues such a disaster could cause.

He has met with Chinese researchers and scientists to further their oil spill recovery plans and research and development efforts. Dr. Chen says the fact he regularly conducts research in a harsh ocean environment is one reason his opinion is attractive to international partners.

"They see the research we are doing here, which is specific to our harsh ocean environment, and the unique challenges that presents," said Dr. Chen. "They know we have unique research capabilities and they hope to utilize our expertise and experience to develop long-term collaboration."

Closer to home, Dr. Chen has also been

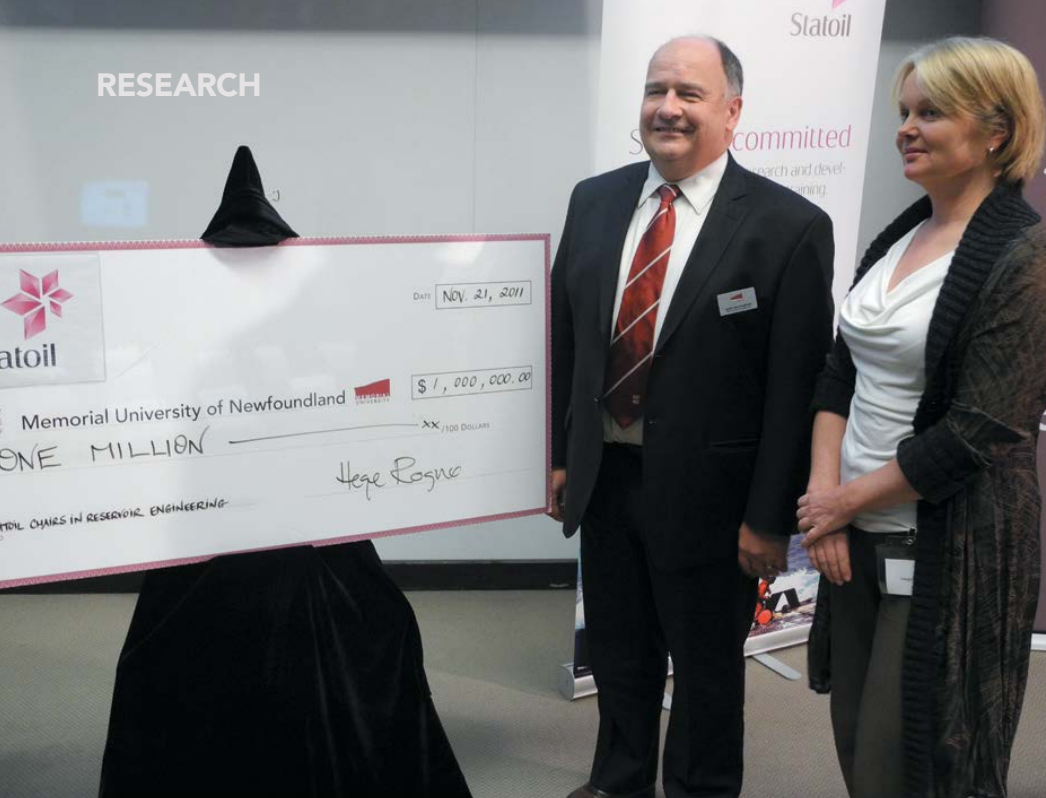
actively organizing and speaking at local conferences, such as *Offshore Oil Spills in Harsh Environments – from Challenges to Opportunities*, a workshop that took place in November 2011 in St. John's. The research-oriented workshop brought together researchers from multiple disciplines, as well as executives from the petroleum industry and representatives from the Federal and Provincial Governments.

Dr. Chen's presentation, titled *Can we make sound decisions to combat offshore oil spills?*, was well attended and played a key part in the many recommendations that came out of the conference.

Following this, he was asked to organize a special session and present his group's research at the 35th Arctic and Marine Oil spill Program (AMOP) Technical Seminar on Environmental Contamination and Response in Vancouver, BC in June 2012. The seminar was an international forum on preventing, assessing, containing and cleaning up spills of hazardous materials in every type of environment.

Dr. Chen also took part in the GYA's 2012 Global Assembly in South Africa. This provided him a chance to present his work while exchanging ideas with other young research leaders from 40 different countries. He also met with distinguished senior scientists and science administrators from across the world.

"This was a highly successful assembly of the leading young scientists across the world. Being a new member, I was impressed with how diverse this community is in term of disciplines, backgrounds and research specialties," said Dr. Chen. "Through sharing ideas and concepts, great philosophies and approaches were proposed that will provide numerous benefits to scientists and society for many years to come." ■



Dr. Gary Kachanoski and Hege Rognø

Memorial University, RDC and Statoil announce new research chairs in engineering

A \$2-MILLION investment by Statoil Canada and the Research & Development Corporation (RDC) will boost Memorial University's research expertise in reservoir engineering. The funding will create the Statoil Chair and Statoil Associate Chair in Reservoir Engineering at Memorial and foster the development of a new Petroleum Engineering Research Program in the Faculty of Engineering and Applied Science. Statoil Canada and RDC will each contribute a total of \$1 million over the next five years.

"This announcement is an excellent example of the opportunities that are created when industry, academia and government partner," said Keith Hutchings, minister responsible for the Research & Development Corporation at an event on Mon., Nov. 21, in the engineering building on Memorial's St.

John's campus. "This partnership will result in positive outcomes as it will further develop Newfoundland and Labrador's research expertise in reservoir and arctic operations. It also represents some of the innovative work of RDC and its contribution to enhancing exploration and development opportunities for this province."

"Statoil is a technology-based upstream energy company, so investments in R&D and education and training are important for us," said Hege Rognø, vice-president, offshore upstream, Statoil Canada. "We have a long track record of collaboration, technology sharing and knowledge transfer, which sets us apart. With the goal to strengthen the areas of petroleum technology, reservoir engineering and R&D in the province, we are very pleased to enter into a partner-

ship with Memorial University and the Research & Development Corporation."

Recently, Statoil signed a similar agreement, focused on R&D collaboration, with the University of Texas.

"Universities and academic institutions in North America represent important arenas for Statoil in research and competence development," said Ms. Rognø.

"With plans to significantly develop our operations in Canada and the U.S., we want to further develop our position in the market for talented and skilled individuals."

"Research and development investments in petroleum reservoir engineering align with Newfoundland and Labrador becoming a world-class leader in new technologies for exploration and development in harsh environments," said Glenn Janes, chief executive officer, RDC. "Today's announcement will also foster new generations of researchers critical to the future growth of this province's offshore petroleum industry."

The Statoil Chairs in Reservoir Engineering will become an integral part of the Faculty of Engineering and Applied Science. The chairs will establish, promote and focus their teaching and research programs on reservoir engineering. The chairs will also develop the reservoir engineering capability within current programs.

"The new Statoil Chairs in Reservoir Engineering will significantly strengthen Memorial's research capacity in this strategic area and we are committed to pursuing other opportunities, such as a Canada Research Chair or NSERC Industrial Chair, to further build our expertise in this area," said Dr. Gary Kachanoski, president and vice-chancellor, Memorial University. "I have every confidence that the Statoil chairs will lead to innovative new research that will benefit both engineering students and the wider community." ■

Memorial engineering leads research into harsh ocean environments

NEWFOUNDLAND and Labrador's knowledge and technological capacity for ships and offshore structures operating in harsh ocean environments is about to be strengthened with the launch of a research program at Memorial University's Faculty of Engineering and Applied Science.

The Research & Development Corporation of Newfoundland and Labrador (RDC) and American Bureau of Shipping (ABS) of Texas recently announced a combined \$600,000 investment for the ABS Harsh Environment Technology Centre and associated research program. This investment will fund research on how ship and offshore structures can be improved to work more effectively in volatile ocean conditions, such as those occurring in the North Atlantic.

"This partnership further demonstrates Newfoundland and Labrador as a recognized leader on the international stage when it comes to research and development of technologies for ships and offshore structures operating in harsh environments," said the Honourable Keith Hutchings, minister responsible for the RDC. "Worldwide, there is an industry need for this type of research and development. Our geography, academic environment and strong economy make Newfoundland and Labrador the best place for international companies to learn about operating in cold ocean environments."

ABS has worked closely with the Ocean Engineering Research Centre (OERC) within Memorial's Faculty of Engineering and Applied Science to develop the ABS Harsh Environment Technology Centre and the associated research program, which will be led by Dr. Wei Qiu, associate professor and director of the OERC.



Dr. Wei Qiu

"We look forward to continued collaboration with ABS and RDC," said Dr. Qiu. "This support will allow the OERC to expand its activities in improving ship and offshore structure design and safety operations in harsh ocean environments."

The research program within the ABS Harsh Environment Technology Centre will focus on themes such as dynamic positioning in ice, produced water management, ballast water management, corrosion protection of ships and platforms and fire and explosion assessment.

"This investment is a significant development for our province as we continue to build research capacity in the ocean technology sector," said Glenn Janes, CEO of the RDC. "Academic researchers at Memorial University will be able to work with international partners such as ABS to expand research that can develop solutions for companies operating in challenging marine conditions."

ABS has a longstanding relationship with Memorial University. In 2009, a memorandum of understanding

was signed to create the ABS Harsh Environment Technology Centre on the St. John's campus to support the development of technologies for ships and offshore structures operating in harsh environments.

This recent investment builds on the relationship with ABS and will strengthen Memorial University's expertise in a strategic research area.

"Memorial's Faculty of Engineering has the unique resources and expertise needed to address the challenges of ship and structure design for harsh offshore environments," said Dr. Gary Kachanoski, president and vice-chancellor, Memorial University. "Ultimately, the research stemming from this investment will help our students, faculty and industry partners make ocean-related industries safer and more productive."

Founded in 1862, ABS is a leading non-governmental international classification society devoted to promoting the security of life, property and the marine environment through the development and verification of standards for the design, construction and operational maintenance of marine-related facilities.

"ABS collaborated with Memorial University of Newfoundland and RDC to establish the ABS Harsh Environment Technology Centre," stated Todd Grove, ABS senior vice-president and chief technology officer. "ABS and Memorial University have developed a strong working relationship during the last few years while producing important research in this field. With this additional support we will build on our previous efforts and continue to assist the marine and offshore industry in tackling the challenges they face in harsh and arctic environments." ■



Dr. Brian Veitch is a professor with Memorial's Faculty of Engineering and Applied Science.

Memorial i-Generator Program launches with funding boost from ACOA

WITH THE HELP of \$54,750 from the federal government, the new i-Generator Program will help students to identify and evaluate innovative ideas and determine how best to turn them into job and business opportunities.

A partnership between the faculties of Engineering and Applied Science and Business Administration, the i-Generator Program brings together teams of engineering and business students to identify opportunities for technology products and to find ways to advance the product with the help of experienced mentors or coaches.

Students can draw from a pool of

intellectual property - including inventions by professors - held by Genesis Research, Memorial's technology commercialization arm.

"Memorial has a track record of sparking tech start-ups, and this program will build on that experience," said Dr. Brian Veitch, a professor with Memorial's Faculty of Engineering and Applied Science. "We're experimenting with new ways to stimulate entrepreneurial behaviour amongst our students and faculty. Learning by doing is the approach of the i-Generator Program and ultimately we want to see more start-ups."

The funding for i-Generator is provided

through ACOA's Business Development Program and was announced by Peter Penashue, minister of Intergovernmental Affairs and President of the Queen's Privy Council.

"Investing in entrepreneurship and the commercialization of innovative technologies are key parts of our Government's jobs and growth strategy," said Mr. Penashue, on behalf of Bernard Valcourt, minister of state for the Atlantic Canada Opportunities Agency (ACOA) and La Francophonie. "Our universities are in the business of not only research and development, but also preparing students to seize economic opportunities that come with groundbreaking R&D. This initiative will help support technological entrepreneurship and help our best and brightest create jobs."

Calling the initiative an excellent catalyst for interdisciplinary entrepreneurship, Dr. Wilfred Zerbe, dean, Faculty of Business Administration, praised the collaboration between his faculty and the Faculty of Engineering and Applied Science.

"Innovation is more than invention; it is the process of turning the ideas of inventors into products and technologies that have commercial potential, and requires the kind of collaboration with business expertise that the i-Generator program will foster," he said. ■

"Memorial has a track record of sparking tech start-ups, and this program will build on that experience."

– Dr. Brian Veitch

Engineering student researchers among recipients of provincial funding

SOME post-secondary students from Memorial received a total of \$835,000 for research related to this province's growing ocean industries sector, as announced by the Research & Development Corporation (RDC). Of the 20 students, 12 are from the Faculty of Engineering and Applied Science.

The students are the recipients of RDC's second Ocean Industries Student Research Awards competition. In total, nine doctoral, nine master and two undergraduate students at Memorial are receiving \$835,000 in support of their ocean-related research over a three-year period. The awards range in value from \$7,500 per year for undergraduate research to \$20,000-\$30,000 per year at the graduate level. The students' research supervisors are also receiving a research allowance to support their students' research activities.

"In order to build on Newfoundland and Labrador's world-class capacity and performance in ocean-related research, it is paramount that we recruit, foster and retain research talent," said Keith Hutchings, minister responsible for the Research & Development Corporation. "Capitalizing on research opportunities in ocean science and technology to further support industry advancement and commercialization is a key element of the province's economy and its continued prosperity."

The investment supports research and development in areas relevant to Newfoundland and Labrador's ocean industries including offshore petroleum engineering, ocean engineering, fisheries, aquaculture and marine science. The students are enrolled in Memorial's Faculty of Science and Faculty of



The Research & Development Corporation (RDC) awarded 20 students a total of \$835,000 for research related to this province's growing ocean industries sector, including 12 students from the Faculty of Engineering and Applied Science.

Engineering and Applied Science.

"The Research & Development Corporation's investment supports the culture of innovation at Memorial University, enabling these students to conduct research that is critical to the future prosperity of this province," said Glenn Janes, chief executive officer of RDC. "These 20 students have a personal stake in ocean-related research. They are tackling technical research challenges that will contribute to innovative solutions relevant to industry and future economic growth."

Dr. Christopher Loomis, vice-president (Research) of Memorial, said these awards will enrich the university's research programs.

"Students are essential to research success. Their fresh ideas, tenacity and hard work will advance knowledge in their respective fields and will build our capacity

for research in the ocean industries that are so important to our university and province," said Dr. Loomis.

The successful students are selected through a competitive process, based on their strong academic achievement, the technical merits of their proposed research plan and the relevance of the research to Newfoundland and Labrador's ocean industries. Final selection of award recipients was made with advice from RDC's research awards committee, comprised of academia, industry and government stakeholders.

The Faculty of Engineering and Applied Science students who have been awarded funding include Thomas Browne, Jing Jing Cai, Waqas Hanif, Kyle Howlett, Pu Li, Kshama Sundar Roy, Omid Zadakbar, Khalid Eldarymli, Peter Gifford, Liang Jing, Nahidul Islam Khan and Nikoo Naeemi Sanatdoost. ■

AIF funding aids Microfluidic sensor technology research

RESEARCH led by Memorial University into microfluidic sensor technology has received support from the Government of Canada's Atlantic Innovation Fund (AIF), as announced by Peter Penashue, regional minister for Newfoundland and Labrador, minister of Intergovernmental Affairs and president of the Queen's Privy Council.

The support comes in the form of funding from the federal government's Economic Action Plan 2012. This funding supports advancements in Newfoundland and Labrador's ocean technology cluster, IT industry and medical research fields.

Memorial's research into microfluidic sensor technology is being delivered by researchers from the Faculty of Engineering and Applied Science and the Department of Chemistry.

"The variety of projects being funded in Newfoundland and Labrador speaks to the diversity of talent and expertise living and working in our province. From fraud detection software to advancements in oil spill detection and analysis, our private

and public sector research community is creating game-changing technologies," said Minister Penashue.

The chief investigators of the microfluidic sensor technology project are Dr. Kelly Hawboldt of the Faculty of Engineering and Applied Science and Dr. Christina Bottaro and Dr. Erika Merschrod of the Department of Chemistry.

This project aims to develop microfluidic sensor technology to measure contaminants in harsh marine environments, especially oil-in-water. The core technology involved is molecularly imprinted polymers (MIPs) and accompanying sensing systems which can be deployed for oil spill monitoring and fate analysis, or incorporated into the on-line analysis of produced water composition.

The primary advantage of the small MIP-based devices is their sensitivity and selectivity. When deployed into a marine environment, the MIPs will only detect targeted compounds while avoiding irrelevant compounds, ensuring accuracy.

Since the sensors are small and simple, they can be used anywhere samples need to be collected and they can function in cold temperatures and under ice cover.

The long-term goal is to use the platform technology for the commercialization of new biosensor applications in medicine, biotechnology and civil defense.

This project, with a total estimated cost of \$3 million, will receive approximately \$2.1 million from the federal government's Atlantic Innovation Fund.

In addition to the microfluidic sensor technology research led by the Faculty of Engineering and Applied Science and the Department of Chemistry, Memorial also received funding for two other projects: Dynamic Positioning Operations in Ice Environments, a project led by the Fisheries and Marine Institute; and Diagnostic Devices for Effective Clinical Management of Common Debilitating Diseases, research led by the Faculty of Medicine. ■

"The variety of projects being funded in Newfoundland and Labrador speaks to the diversity of talent and expertise living and working in our province."

– Peter Penashue

Dr. Kelly Hawboldt





Learning with toys attracts Fortune 500 companies

Dr. Leonard Lye and
Justine Dagenais.

A TOY developed for a graduate engineering course dealing with the design, conduct and analysis of engineering and computer experiments is gaining traction on a global scale — being used by several Fortune 500 companies including Cummins, John Deere, Eastman Chemicals and major corporations such as Bell Canada, Sanofi-Pasteur and Pratt-Whitney.

Dr. Leonard Lye, associate dean of graduate studies with the Faculty of Engineering and Applied Science, developed the DOE (Design of Experiment)-Golfer. The DOE-Golfer is a wooden toy designed similar to a golf putter. The toy demonstrates several factors that cause the ball to travel various distances.

"The toy can consider up to five or six

factors, for example: brand of ball, length of club, weight of club, angle of swing, type of greens (carpet), direction and more," said Dr. Lye.

Dr. Lye explained that the key benefit of using a physical toy such as the DOE-Golfer is that the students get to use it to collect data after their experimental design, analyze the data and then apply their results in a competitive team golf tournament for bonus marks.

"This has been a very effective teaching aid. I normally have upwards of 30 students in the course each fall, and in addition to the benefits of enhancing the learning experience, students have a lot of fun with the device – as do I," said Dr. Lye with a smile.

Justine Dagenais, an ocean and naval architectural engineering graduate

student, agrees that the apparatus is an ideal way to learn about design of experiment.

"It combines learning and playing all in one," she said. "And it helps with the process of learning how to prepare and execute an experiment, as well as how to analyze the data acquired after the fact."

Dr. Lye has taught the course for the last 15 years not only in the Faculty of Engineering and Applied Science, but also as a professional development course to the public, and to scientists and engineers at the National Research Council. He was the winner of the 2003 President's Award for Distinguished Teaching.

The course will be offered at an undergraduate level, possibly as soon as the winter 2013 semester. ■

Dean of Faculty of Engineering and Applied Science appointed

DR. GREG NATERER has been appointed the new dean of the Faculty of Engineering and Applied Science at Memorial University. The appointment was approved by the executive committee of the Board of Regents and was effective Aug. 1, 2012.

Dr. Naterer was most recently a professor of mechanical engineering and associate dean of Engineering and Applied Science at the University of Ontario Institute of Technology (UOIT). He is a Canada Research Chair in Advanced Energy Systems, Tier 1, and served as UOIT's director of graduate programs and research from 2005-09. During this time, he led the development of six new graduate programs and rapid expansion of research capacity, including a new hydrogen energy building on the campus of UOIT.

"I am delighted and honoured to serve as dean of the Faculty of Engineering and Applied Science at Memorial University," said Dr. Naterer. "Both the engineering faculty and Memorial University have esteemed reputations throughout Canada and I look forward to working closely with those who have worked hard to establish this highly-regarded status."

Dr. Naterer compiled numerous accomplishments during his time as associate dean at UOIT. He led the development of a new master of engineering in engineering management (MEngM) graduate program, and served as the chair of the Faculty Curriculum Committee responsible for undergraduate curriculum development.

Prior to his time at UOIT, Dr. Naterer was a professor of mechanical engineering at the University of



Dr. Greg Naterer

Manitoba from 2004-05, associate professor (2000-04), assistant professor (1999-2000) and previously as an assistant professor, mechanical engineering, at Lakehead University in Thunder Bay, ON, between 1996-99. He completed a term position as assistant professor at the University of New Brunswick from 1995-96.

Dr. Naterer's areas of research specialization involve heat and fluid flow, energy systems and icing of structures. Dr. Naterer led an international consortium, involving eight collaborating institutions, five countries and six industrial partners, which developed the world's first large-scale copper-chlorine cycle of thermochemical water splitting for clean hydrogen production. Hydrogen is an energy carrier and potentially major solution to the problems of climate change and depleting fossil fuels.

He has served in prominent national and international leadership

roles throughout his career. He chaired the NSERC Discovery Grant Committee (Mechanical Engineering), Thermophysics Technical Committee of the American Institute of Aeronautics and Astronautics (AIAA) and an international hydrogen production division of the International Association of Hydrogen Energy (IAHE).

Dr. Naterer is a former chapter executive director of Professional Engineers Ontario (PEO) and is a fellow of the Canadian Society for Mechanical Engineering (CSME), American Society of Mechanical Engineers (ASME) and Engineering Institute of Canada (EIC).

He received his PhD in mechanical engineering from the University of Waterloo in 1995, after earning a master of applied science in mechanical engineering from the university in 1991. Dr. Naterer received a bachelor degree in applied mathematics (dual specialization with mechanical engineering) from the University of Waterloo in 1989.

Dr. Naterer succeeds Dr. R. (Venky) Venkatesan, who served as dean *pro tempore* since July 2011. ■

"Both the engineering faculty and Memorial University have esteemed reputations throughout Canada and I look forward to working closely with those who have worked hard to establish this highly-regarded status."

– Dr. Greg Naterer

Dr. Brian Veitch named winner of Transport Canada Marine Safety Award

A PROFESSOR from Memorial University's Faculty of Engineering and Applied Science was honoured with the 2011 Transport Canada Marine Safety Award.

Dr. Brian Veitch, professor, ocean and naval architectural engineering, is the recipient of this year's Transport Canada Marine Safety Award. He has been honoured with the prize in recognition of his dedication to marine safety as an educator, researcher and innovator.

"Throughout the years, you have served as an example of how inspired innovators can transform research into tangible improvements to the safety of life at sea," said Denis Lebel, minister of Transport, Infrastructure and Communities, Government of Canada, in a letter to Dr. Veitch. "As well, you have clearly demonstrated an unusually high level of performance in the interests of Canada and indeed international marine safety. At the core of this contribution is a large, long-term and successful R&D program that has had numerous practical and meaningful outcomes that support and advance marine safety."

The safety award was established to stimulate an awareness of marine safety in Canada and to recognize persons, groups, companies, organizations, agencies or departments that have contributed, in an exceptional way, to this objective. The winner is decided by a selection committee consisting of two representatives from the marine industry and two representatives from Transport Canada.

"This is a very prestigious award and Dr. Veitch is a very deserving winner," said Dr. R. (Venky) Ramachandran



Donald Roussel (left) of Transport Canada and Dr. Brian Veitch.

Venkatesan, dean *pro tempore*, Faculty of Engineering and Applied Science at Memorial University. "On behalf of the Faculty of Engineering and Applied Science, I am thrilled to offer congratulations to Dr. Veitch. He is internationally renowned for his research into marine transport, offshore safety and the testing and evaluation of advanced ocean technologies and his contributions to marine safety are well documented."

Dr. Veitch, a Memorial University alumnus, is a specialist in cold ocean engineering and is a highly regarded

member of the Society of Naval Architects and Marine Engineers and the Royal Institution of Naval Architects. He was presented with Memorial University's 2004-2005 President's Award for Outstanding Research.

"I'm very lucky to have great colleagues and students. Our team is fortunate to have excellent collaborative R&D relationships with our industry partners," said Dr. Veitch. "We're all working in a wonderfully supportive R&D climate to advance the safety of life at sea, a shared goal that motivates us all." ■



Dr. Lesley James

Dr. Lesley James appointed Chevron Chair in Petroleum Engineering

MEMORIAL UNIVERSITY professor Dr. Lesley James has been appointed the inaugural Chevron Chair in Petroleum Engineering.

Chevron Canada Limited, the Research & Development Corporation of Newfoundland and Labrador (RDC) and Memorial University announced a five-year, \$1 million dollar partnership to create a chair that would strengthen the capacity for petroleum engineering

“I’m looking forward to tackling some of the interesting challenges that are present in the local offshore industry.”

– Dr. Lesley James

research in the Faculty of Engineering and Applied Science.

Chevron’s contribution of \$500,000 is being utilized to establish the chair position. RDC is also investing \$500,000, in partnership with Chevron, to increase research and development in petroleum engineering given its importance to the future of Newfoundland and Labrador’s offshore petroleum industry. Its funding comes from its Collaborative R&D Program.

“On behalf of Chevron Canada, I want to congratulate Dr. James on being selected as the Chevron Chair in Petroleum Engineering,” said Mark MacLeod, vice-president (Atlantic Canada), Chevron Canada. “I am confident that her work will strengthen industry-relevant, petroleum engineering research in the province.”

Dr. James, who assumed the position on Dec. 1, 2011, has a blend

of academic and industry experience. She holds a PhD in chemical engineering and has worked as a management consultant. Her research, which is largely focused on enhanced oil recovery (EOR), aims to improve the percentage of oil recovered from petroleum reservoirs. As the Chevron Chair in Petroleum Engineering, Dr. James will research ways to maximize the recovery of oil from offshore Newfoundland and Labrador fields based on an understanding of their fluid/fluid and rock/fluid interactions. Dr. James is also excited by the opportunity this work provides to bring locally relevant, real-world data and industry challenges into the classroom and teaching laboratory.

“Industry relevance and applying science to real world problems is really important to me,” she said. “I’m looking forward to tackling some of the interesting challenges that are present in the local offshore industry. Extending the production life of a field through EOR, and maximizing those valuable resources will yield tremendous benefits for both industry and the province. EOR is field specific and, coupled with the challenges of remote offshore locations, it’s a very exciting area of research.”

“The Chevron Chair in Petroleum Engineering represents a new focus on upstream oil and gas research at Memorial University. Dr. James will be leading this effort through a world-class program of applied research,” said Dr. Christopher Loomis, vice-president (research). “It is also a further illustration of how Memorial, in partnership with industry and the RDC, is addressing the needs of and helping to build future prosperity for our province.” ■

Cahill Lecture Series continues

THE THIRD annual Cahill Lecture Series took place on March 28 in the Angus Bruneau Engineering Lecture Theatre of the S.J. Carew Building.

John Kennedy of the Cahill Group and Peter Jebbink of Vale talked to engineering students, faculty and staff about the company's megaproject in Long Harbour, NL.

Dr. R. (Venky) Venkatesan, dean *pro tempore* of the Faculty of Engineering and Applied Science, spoke highly of this year's presentation and of previous presentations made during this lecture series.

"Many of Memorial's engineering students complete work terms with the Cahill Group of Companies and Vale, and this lecture series is another way that industry continues to build relationships with Memorial University, especially with the Faculty of Engineering and Applied Science," he said.

The series is presented by the Cahill



Peter Jebbink of Vale was one of two presenters during the third annual Cahill Lecture Series.

Group of Companies with the purpose of offering engineering students the opportunity to attend presentations on

current projects relevant to engineering course material from leading professional experts. ■

Memorial University hosts national lecture tour

THE FACULTY of Engineering and Applied Science at Memorial University of Newfoundland co-hosted a presentation of the 2011 National Lecture Tour of the Canadian Society for Civil Engineering (CSCE) in the fall of 2011

The topic of the lecture was *Engineering Significance and Lessons of the March 11, 2011 Tsunami in Japan - Tsunami Impacts on Infrastructure*. The guest speaker was Dr. Ioan Nistor, who was a member of the first international research team to visit the areas

affected by the disaster. He presented findings and observations on the performance of infrastructure and the devastating wave damage caused by the tsunami.

Dr. Nistor is an associate professor of hydraulic and coastal engineering at the University of Ottawa and has worked on a number of international and Canadian projects related to dam engineering, coastal engineering and environmental engineering, as well as sanitation and water resources development. Dr. Nistor

has participated in several international and Canadian research programs and has won several research and teaching awards.

The lecture was of great interest to hydraulic, structural and geotechnical engineers who wanted to learn more about disaster prevention and mitigation, with a particular emphasis on the design of structures prone to extreme loading due to tsunamis, waves and flash floods in the Canadian context. ■

Speaking of Engineering Lecture Series attracts diverse guest lecturers



ROALD SIREVAAG

With a large crowd of students, university faculty members and industry leaders on hand, Roald Sirevaag entertained a captive audience on Nov. 2 during the fall presentation of Speaking of Engineering. Mr. Sirevaag is the vice-president, subsea technology and diving for Statoil, one of the world's leading oil and gas companies. His presentation was titled *Subsea Processing – adding value through separation, water injection, oil boosting and gas compression*.

Throughout his presentation, Mr. Sirevaag discussed the rewards and challenges of implementing this type of technology. At the conclusion of his presentation, Mr. Sirevaag answered a variety of questions, including inquiries from students and professors. ■

The winter edition of Speaking of Engineering featured Canadian astronaut Dr. Robert Thirsk, who discussed his experiences living in space for six months aboard the International Space Station (ISS).

Dr. Thirsk's presentation included a movie shot by him and his fellow astronauts at the ISS. Audience members saw clips of the international crew working, conducting research, exercising and enjoying social time together. He also used a slide show to highlight a few of his favourite memories from his time in space.

After his presentation, Dr. Thirsk answered audience questions for close to 45 minutes. Questions varied from wanting to know about his research to what exactly outer space smells like. Following the event, Dr. Thirsk spent an



DR. ROBERT THIRSK

hour signing autographs and posing for pictures with audience members. ■



DR. SAM MANNAN

Dr. Sam Mannan was the featured presenter on March 26 at the spring edition of Speaking of Engineering. His presentation focused on the topic of improving safety measures in

process engineering. Dr. Mannan is a regents professor with the Chemical Engineering Department at Texas A&M University and the director of the Mary Kay O'Connor Process Safety Center.

During his presentation, Dr. Mannan outlined the steps taken at the Mary Kay O'Connor Process Safety Center to improve process safety measures. His sentiments were well received by the large audience, which included professors and students from the Faculty of Engineering and Applied Science and from across Memorial University.

Speaking of Engineering is co-hosted by the Faculty of Engineering and Applied Science and the Professional Engineers and Geoscientists of Newfoundland and Labrador. ■

Memorial Engineering welcomes Canadian Catalysis Lectureship Award recipient

THE FACULTY of Engineering and Applied Science was pleased to host a May 18 presentation by Dr. Ajay K. Dalai.

Dr. Dalai offered a seminar on the development of carbon-nanotubes-supported catalysts for the conversion of synthesis gas to liquid fuels. The focus of this research is the production of green diesel and alcohols, which could lead to producing fuels that are nitrogen and sulfur free.

"We were thrilled to host Dr. Dalai. His expertise and experience alone made this seminar very beneficial to the faculty and students who attended," said Dr. Faisal Khan, discipline chair, process engineering, Memorial University.

Dr. Dalai is this year's Canadian Catalysis Lectureship Award recipient. As part of the award, he visited a number of universities on a lectureship tour. His presentation was part of the Canadian Symposium of Catalysis lecture series and his visit to Memorial University was funded by the Canadian Catalysis Foundation.

"He has a research focus in novel catalyst development for gas to liquid technologies, biodiesel production and applications, hydrogen/syngas production from waste materials, hydro-processing of heavy gas oil, and value-added products from biomass. These are topics that are relevant and significant to many of us in the province given the growth of the local offshore oil and gas industry," said Dr. Khan.

Dr. Dalai is the associate dean, research and partnerships, with the College of Engineering at the University of Saskatchewan. He has published more than 250 research papers in heterogeneous catalysis and catalytic



Dr. Ajay K. Dalai

processes. His expertise and strategic initiatives in catalysts for bio-economy have earned him several national and international awards.

The list of awards he's been presented includes the McMaster University's Brockhouse Institute for Materials Research Distinguished Speaker Award, the Professor Mann Lecture Series Endowment Lectureship Award from University of Ottawa Department of Chemical Engineering and the Indian Chemical

Engineering Congress NEERI Distinguished Speaker Award.

Dr. Dalai is an active board member, reviewer and guest editor for several international journals. He is also a member of the Chemical Institute of Canada, the Catalysis Division of the CIC, and the American Chemical Society. In addition to these accolades, he is a life member of the Indian Institute of Engineers, the Indian Catalysis Society and the American Institute of Chemical Engineers. ■



Dr. Venkatesan presents the engineering degrees at the spring 2012 convocation

Engineering students proudly accept degrees at convocation ceremony

IT WAS A DAY to remember for more than 170 young men and women from the Faculty of Engineering and Applied Science.

May 31 was the engineering students' day to take centre stage at Memorial University's spring 2012 convocation ceremonies at the St. John's Arts and Culture Centre. With family, friends and faculty members in attendance, graduates received their degrees in civil engineering, computer engineering, electrical engineering, mechanical engineering and ocean and naval

architecture engineering.

"It's a really big feeling of accomplishment. I feel so proud to be here today," said Ashley Mercer, a mechanical engineering graduate from Shearstown, NL. "All the faculty members were excellent throughout the whole program and I'll always remember all the friends I made while I was here."

The students were addressed by Dr. Gary Kachanoski, president and vice-chancellor of Memorial University, who told them to be proud of their accomplishments and enjoy the thrill of

achievement. Throughout the ceremony, a number of students couldn't help but reflect on the time they spent studying, completing assignments and taking part in work terms during their studies.

"It's pretty exciting. I put a lot of work into six years of school so it's really nice to get up on stage and celebrate that," said Mike Noseworthy, a computer engineering graduate from Mount Pearl, NL.

When the moment finally came to receive their degrees and walk across the stage at the Arts and Culture Centre, some students also felt relieved to know they had completed a very challenging program that is respected by industry and academia around the world.

"It's a tough program, but I started work last week, so it definitely prepares you for work right away," said Kyle O'Grady, a mechanical engineering graduate from Carbonear, NL.

The majority of the engineering graduates are already employed by organizations in their field of study and are continuing to learn and grow as young engineers. They credit the Faculty of Engineering and Applied Science for giving them the knowledge to make an immediate impact in their new careers and credit the co-operative education work terms for preparing them for life as professional engineers.

Also, during spring 2012 convocation, four students received their PhDs, 25 students received their master of applied science degrees and six students were awarded their master of engineering management degrees.

During the fall 2011 Memorial University convocation ceremony, 33 graduate degrees were presented by the Faculty of Engineering and Applied Science. ■

Engineering student winner of CAFCE Co-op Student of the Year Award

LAURA PITTMAN, a fifth-year mechanical engineering student at Memorial University, was recently named the 2011 Canadian Association for Co-operative Education (CAFCE) Co-op Student of the Year. The award is significant not only to Pittman, but to the entire university as well.

“This is the first time a Memorial student has received this award. It is a major achievement and a huge recognition for the quality and success of our students and programs,” said Dr. Peter Rans, director of Co-operative Education at Memorial University.

From May 2011 to August 2011, Ms. Pittman took part in a co-op work term with Shell Canada’s Deep Basin Drilling Team. One of her chief goals was to complete a competitor study of horizontal wells in the Deep Basin East area. Her original scope included a study of competitor designs and practices which was expanded to include the analysis of time and cost performance. The future cost savings per well resulting from Ms. Pittman’s



Laura Pittman and Vittorio Spoldi of Shell Canada

research is expected to provide significant financial benefits for Shell.

“While it is always gratifying to be recognized for the hard work and dedication I’ve devoted to my education, what means the most to me is the potential impact it has on future engineering co-op students. I am optimistic that this award can bring additional recognition to the importance of co-operative education, the quality of students that attend Memorial and, in particular, the quality of engineering students,” Ms. Pittman said. “To get where I am today takes a great deal of focus, determination and hard work. However, I could not have done it alone. I am fortunate to have always had great support from my family, my mentors while completing my work terms and, of course, the faculty and staff within engineering and co-operative education

at Memorial.”

Dr. R. (Venky) Venkatesan, dean *pro tempore* of the Faculty of Engineering and Applied Science, was pleased to hear Ms. Pittman had been recognized for her hard work and dedication. He said the award is well deserved and is a sign of how highly respected Memorial University and the Faculty of Engineering and Applied Science are across Canada.

“Ms. Pittman’s achievement is truly noteworthy. A national award is a significant recognition,” said Dr. Venkatesan. “Employers often tell us how pleased they are with Memorial’s engineering work term students. This recognition, in an elite competition, highlights the high quality of our students. This is a proud moment for all of us in the Faculty of Engineering and Applied Science.” ■

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– Dr. Peter Rans

Pi Throw raises money for Janeway Children's Hospital

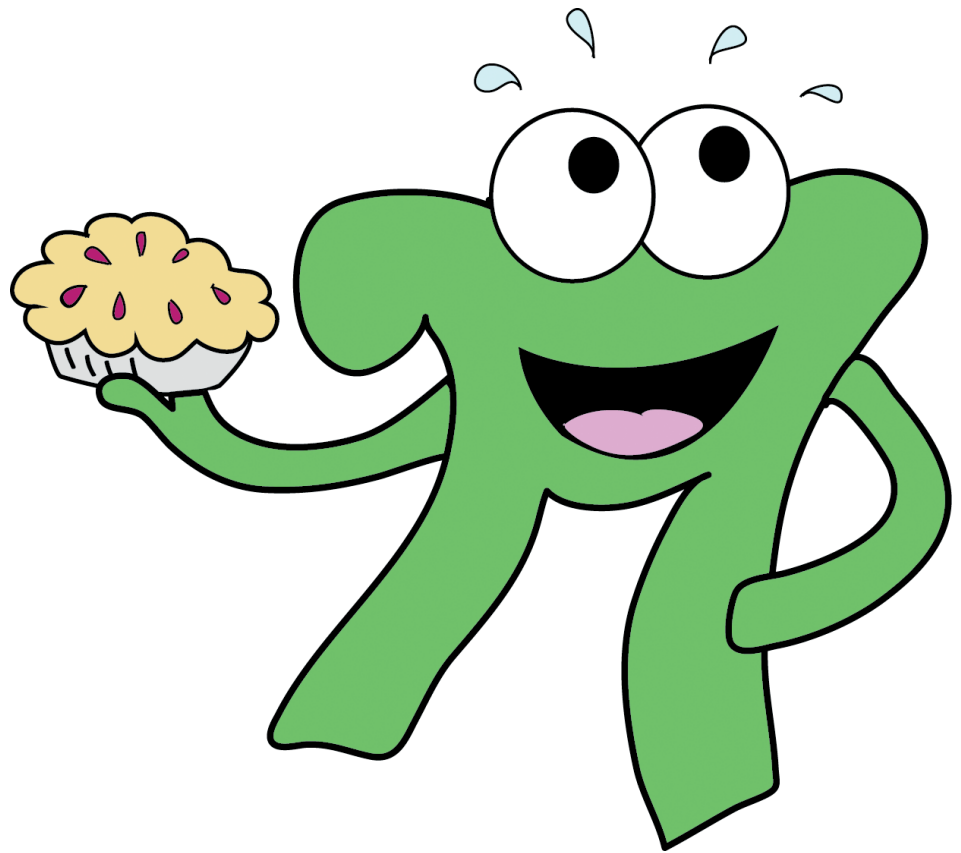
THE ANNUAL Engineering Pi Throw was once again successful in raising funds for young hospital patients.

Held on March 14, the Pi Throw raised \$880 for the Janeway Children's Hospital in St. John's. More than 60 pies were delivered to participants all over Memorial University and the greater St. John's metropolitan area.

The Pi Throw was organized by Student Society A of the Faculty of Engineering and Applied Science at Memorial University. The light-hearted event gave anyone in greater St. John's a chance to purchase a pie and have it thrown, gently, into the face of a friend, co-worker or colleague.

For \$10 you could have a pie delivered by a student volunteer to your intended recipient. The receiver of the pie could then choose to simply take the pie in the face or can pay \$15 to have the pie redirected at someone else, including the person who sent the pastry to them in the first place.

For \$20, an intended recipient could purchase the pie outright. ■



The annual Engineering Pi Throw raised \$880 for the Janeway Children's Hospital in St. John's.

Charity ball raises funds for local organization

THE SIXTH ANNUAL Engineering Charity Ball was a smashing success, helping to raise thousands of dollars for a local organization while bringing together professionals, educators and students from the engineering field.

The Charity Ball was organized by Undergraduate Student Society A from the Faculty of Engineering and Applied Science. The ball took place Feb. 25 at the Johnson GEO CENTRE in St. John's. Staff, faculty and students from Memorial University were on hand, as were associates

and business partners of the Faculty of Engineering and Applied Science.

By night's end, more than \$10,000 had been raised through ticket sales, while \$2,500 was raised through a silent auction. Proceeds go to the St. John's REAL Program, an organization that aims to provide children and youth in the City of St. John's with the opportunity to register in recreation and leisure activities by providing much needed financial assistance.

More than 150 people attended the charitable event. The night included a

three-course gourmet meal prepared by Red Oak Catering, live entertainment provided by the Memorial University School of Music and a silent auction of items donated by individuals, companies and organizations.

Guests attending the charity ball placed bids on a variety of items throughout the evening as part of the silent auction. The highest bidder on each item was announced at the end of the night, with guests taking their prizes home immediately after. ■

Engineering graduate student takes part in national competition

MEHDI GHOBADI may not have won the recent Auto21 TestDrive competition, but the graduate student from Memorial's Faculty of Engineering and Applied Science definitely learned a great deal from the experience.

The Auto21 TestDrive competition is a prestigious national event that showcases leading edge technologies and automotive knowledge developed in part by Canadian university graduate students. Mr. Ghobadi was one of only six students from across Canada to be selected for the competition and he says the event offered him a great learning experience.

"I really enjoyed giving my presentation and it felt great to be part of an event that included some of the top engineering graduate students in the country," said Mr. Ghobadi. "The other five presentations were great and unfortunately I was not chosen as the winner. But I learned a lot throughout the whole process and will use this knowledge moving forward with my research."

Mr. Ghobadi presented his research into heat transfer enhancement techniques during the Auto21 TestDrive competition in Toronto. Faculty of Engineering and Applied Science professors Dr. Yuri Muzychka and Dr. Amy Hsiao helped Mr. Ghobadi prepare for the event and were impressed by the way he showcased his work and Memorial University.

"He deserves a lot of credit just for getting selected to the competition. Across Canada, only six students were chosen to take part. That says a lot about the quality of Mehdi's research and his presentation skills," said Dr. Muzychka, who works closely with Mr. Ghobadi and regularly advises the graduate student.

Auto21 TestDRIVE provides an avenue



Mehdi Ghobadi

for graduate students to showcase their research while developing communication and networking skills. Selected candidates present their research before a panel of expert judges in a room full of industry officials. It includes the formal presentation and a question-and-answer format giving graduate students a chance to demonstrate how their research benefits Canada and is useful to the private and public sectors.

"It is a rapid-paced competition that forces you to think quickly about the current and future applications of your research," said Mr. Ghobadi. "Taking part in the event helps build your confidence and makes you look at your research in new and exciting ways." ■

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– Mehdi Ghobadi



Andy Fisher, associate dean (undergraduate studies) with the Faculty of Engineering and Applied Science, and Michael Morgan, an engineering student who won the faculty's inaugural video contest.

"I wanted to show what the engineering program is to me; the things I enjoy about it and the interesting challenges it presents."

– Michael Morgan

Engineering student Michael Morgan wins inaugural video contest

THE FACULTY of Engineering and Applied Science held a video contest during the fall semester in which current undergraduate students were asked to demonstrate with an original video presentation how they felt about the engineering program at Memorial University.

Each video entry had to include answers to the following questions:

- What is Memorial Engineering?
- What does Memorial Engineering mean to you?
- Why did you choose MUN Engineering?

- What do you like best about Memorial Engineering?

"I tried to do something a little different. I used shots from around the engineering building and from events engineering students took part in," said Michael Morgan. "I wanted to show what the engineering program is to me; the things I enjoy about it and the interesting challenges it presents."

Mr. Morgan won free tuition for one term for his efforts. To view Mr. Morgan's winning video, titled "Memorial University Engineering Video", please visit www.youtube.com/user/EngineeringMUN/feed?filter=2 ■

Engineering students benefit from leadership program

TWO STUDENTS from the Faculty of Engineering and Applied Science at Memorial University of Newfoundland took part in the Canadian Federation of Engineering Students (CFES) first ever Leadership Summer School (LSS), Aug. 21-27, 2011.

The week-long event is a professional development program that gives engineering students across the world an opportunity to come together to learn new skills and share experiences. The program took place at the University of Toronto and included participants from 14 different countries, including Canada, Greece, Bosnia, Slovenia, Spain, Poland, Belgium and the United Kingdom.

Among the participants were Amanda Curnew, a civil engineering student and Matthew Ryan, a mechanical engineering student, who both commenced academic term six with the Faculty of Engineering and Applied Science that fall.

"The main objective of the program was to provide engineering students with a week of practical training pertaining to leadership styles, group dynamics, presentation skills, project management, conflict management, decision making and personality types," said Mr. Ryan. "The training allowed for an exchange of knowledge, sharing of best practices amongst all the participants and attaining a number of professional skills. I really enjoyed the entire program and would recommend it to any engineering student."

Ms. Curnew also speaks highly of the Leadership Summer School, adding she felt honoured just to be among the engineering students chosen for the program.



Amanda Curnew and Matthew Ryan

"It was an amazing experience. It was a great opportunity to learn more about personal strengths and weaknesses, as well as learn from other inspiring engineering students and their experiences," she said. "It is definitely a worthwhile opportunity for engineering students and it was certainly a privilege to be chosen to participate."

Engineering students from 28 different countries applied to attend the LSS, but

only 25 applicants were accepted, based on grades, programs of study, resume and extracurricular activities. The fact that two students were chosen from Memorial speaks to the reputation of the university and the Faculty of Engineering and Applied Science, according to Dr. R. (Venky) Venkatesan, dean *pro tempore* of the Faculty of Engineering and Applied Science. ■

"It was an amazing experience. It was a great opportunity to learn more about personal strengths and weaknesses, as well as learn from other inspiring engineering students and their experiences."

– Amanda Curnew



Andy Fisher, associate dean of undergraduate studies, and Dr. Dennis Peters, chair of electrical and computer engineering, interact with students at the forum.

Third annual Student LIFE Forum a success

THE FACULTY of Engineering and Applied Science hosted the third annual Student LIFE Forum on Saturday, Sept. 24, 2011.

The forum was sponsored by the Angus Bruneau Student Leadership and Innovation Fund in Engineering (LIFE) Program, which is a \$1 million donation by Drs. Angus and Jean Bruneau, to encourage and support student leadership and innovation in engineering education, research and community service. Memorial engineering students used the day to learn about student leadership and innovation in engineering education, research and community service.

"The 2011 Student LIFE Forum was a great opportunity for our students to hear from leading professionals working in the field while also learning to work together with their classmates," said

Dr. R. (Venky) Venkatesan, dean *pro tempore*, Faculty of Engineering and Applied Science.

The forum featured discussions on leadership, sustainability and innovation. The day began with speakers who had benefitted from many years, and a variety of positions, in the engineering profession. This was followed by breakout sessions, during which small interactive groups discussed ways engineers and engineering students can display leadership and innovation, both in the classroom and in the workplace.

"These sessions gave students the opportunity to share their thoughts on a topic as they are guided by an expert in the area," said Professor Andy Fisher, associate dean for undergraduate studies. "A major goal of the forum was to remind engineering students that by us-

ing their education, they have the ability to initiate positive change in the world."

In addition to the LIFE forum, the Angus Bruneau Student LIFE program also sponsors financial awards for engineering students and provides funding for student-led initiatives that significantly enhance the experience of students in the faculty.

"The Student LIFE Forum is another example of the contribution Dr. Bruneau and his family have made to the Faculty of Engineering and Applied Science," said Dr. Venkatesan. "Dr. Bruneau was the faculty's founding dean in 1968 and helped make it one of the top engineering and applied science programs in the country. He continues to support engineering students, research and innovation today. His contributions have produced lasting effects." ■

Expansion of S.J. Carew Building begins

EXPANSION of the S.J. Carew Building, the home of the Faculty of Engineering and Applied Science at Memorial University, began in July 2012, paving the way for increased research and partnerships between the university and its partners.

The expansion is funded by Suncor Energy and the Research & Development Corporation of Newfoundland and Labrador, and will include the new Suncor Offshore Research and Development Centre at Memorial University. This 1,090-square-metre extension will create significant research space and a new synergy of collaboration among faculty, graduate students and industry partners.

“The new centre will provide critical dedicated space for innovative research and industry collaboration related to the ocean technology and offshore engineering sectors. These are strategic



investment areas for Suncor Energy, RDC, Memorial University and the province of Newfoundland and Labrador and align well with Memorial’s rapidly growing ocean technology and offshore engineering research programs,” said Dr. R. (Venky) Venkatesan, dean *pro tempore*, Faculty of Engineering and Applied Science.

The new Suncor Offshore Research and Development Centre will provide Memorial researchers with a new integrated space to collaborate with local technology and offshore companies. The centre will also allow the university to increase its research related to the

ocean/offshore engineering sector and develop highly qualified personnel in these areas.

The expansion is expected to help grow the Faculty of Engineering and Applied Science’s research and development capabilities by \$6- to \$8-million per year over the next five years. It will also lead to the hiring of close to 100 researchers.

“It is a great time to be an engineer in our province. Our graduates are finding important and meaningful employment throughout Newfoundland and Labrador and our partners in government and industry are teaming with us on a regular basis to further research in several key industries,” said Dr. Venkatesan. “The creation of the Suncor Offshore Research and Development Centre will help us build upon our strengths in these sectors and will create even more opportunities for engineering students and graduates.” ■





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