

INGENUITY



Dean's Message



"Applied Science — Engineering, Nursing, Community and Regional Planning, and Architecture and Landscape Architecture — is stepping up, across the board, to lead, with UBC, as it addresses the challenges of the next century."

Marc Parlange
Dean, Faculty of Applied Science

Applied scientists, alumni, friends...

1915. 1919. 1946. 2005. 2012. These numbers are code for the story of a company of game changers – leaders, dreamers, doers, professionals and pioneers. They are dates, watershed moments in the history of an academic Faculty so unique it has no match in this country. They are anniversaries, of unions between fields – biomedical engineering; health leadership; urban systems design; environmental and clean energy; advanced manufacturing and indigenous community planning – so diverse that few could have foreseen their crucial interplay now, in 2016, but somehow our predecessors saw it. Applied science has become the heart and soul of the research-intensive university. And now, a hundred years in, UBC Applied Science is poised to tackle the greatest challenges of the decades ahead.

For the first time, *Ingenuity* goes out to all of APSC – architects and landscape architects, community and regional planners, engineers and nursing professionals. We are four schools, six departments, five disciplines and 38,000 strong. Together, we cast our vision to 2020 and beyond, guided by our new strategic plan. We enter our second century with a new president at UBC's helm. We recognize the rise of clean-tech and foresee that BC will be to the coming transformation what Silicon Valley was to tech's first wave. The strength of our presence in both Vancouver and the Okanagan ensures our place at the forefront of the innovation revolution. We will make history.

On page 12, I introduce a reimagining of engineering in BC – the challenges, the solution and how it affects us all. On page 4, we look back over 50 years of innovation – the entrepreneurs, the spin-offs, the successes and the buy-outs. Turn to page 10 for a 10-year anniversary retrospective of UBC Okanagan's School of Engineering and a tribute to Spiro Yannacopoulos. Pages 18-21 are a celebration the Faculty's centennial. Ethics, Inukshuks and good deeds all make an appearance on pages 14-17 and as always, our people profiles are a highlight of the issue.

It is an honour to be at the helm of this Faculty at this pivotal moment in its history. You have made it what it is today, and the task of transforming it for a new century is not one I take lightly. Thank you for your trust and your confidence, and for your support as we enter this next hundred years. Tuum est – it's yours – and it belongs as well to the people you'll see in these pages, and to those who have yet to arrive. Let's prepare the way together.

Best regards,

Marc Parlange, P.Eng. PhD
Dean, Faculty of Applied Science
Professor, Civil Engineering

UBC Applied Science

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DESIGN AND PRODUCTION

Marasigan Design

THE FACULTY'S ACTIVITIES INCLUDE:

Departments and Programs

Biomedical Engineering
Chemical and Biological Engineering
Civil Engineering
Electrical and Computer Engineering
Engineering Physics
Environmental Engineering
Geological Engineering
Integrated Engineering
Materials Engineering
Mechanical Engineering
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Clean Energy Research Centre (CERC)
Institute for Computing, Information and
Cognitive Systems (ICICS)
Michael Smith Laboratories
Pulp and Paper Centre (PPC)

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School of Community and Regional Planning
School of Engineering
School of Nursing

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4-11

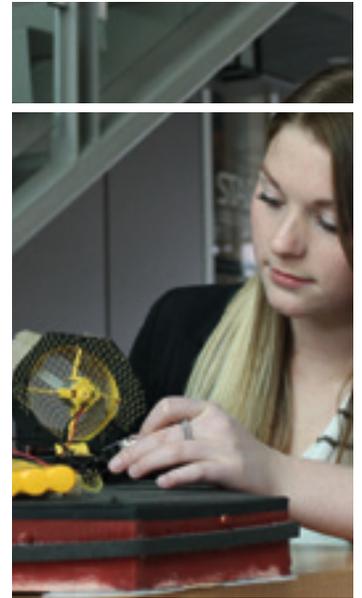
UBC Applied Science from 1962-present

From the advancement of UBC Applied Science research to the creation of programs reflecting society's needs, experience the past 50 years of Applied Science. To read about the first half of the century, look back to the Spring/Summer 2015 edition: www.apsc.ubc.ca/ingenuity-ss2015.



The evolution of UBC engineers' education and innovation

As curricula and student activities have changed, learn how UBC engineers have applied their spirit and ingenuity to life inside and outside the classroom.



Ten years and counting

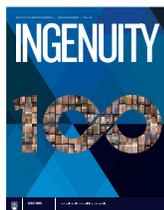
Discover how UBC engineers sparked the beginnings of UBC Okanagan and the School of Engineering.

FEATURE	12	NEWSWORTHY	22	OUR PEOPLE	30	ALUMNI UPDATES	34
Dean Marc Parlange reflects on the state of engineering in BC and asks "How many engineers does it take to change a...?"		From the highly anticipated opening of the Engineering Student Centre to the launch of the new Master of Engineering Leadership and Master of Health Leadership and Policy programs, learn what's new in UBC Applied Science.		100 years may have passed since Applied Science's beginnings, but our people remain at the core of our faculty. Join us as we explore a 70-years-old UBC Engineering family tradition that's still in the making, and bid farewell to professors who lived with great passion and dedication to their work, students and society.		Don't miss the recap of our recent alumni events; let us know if you'd like to plan a reunion for your class!	

To view past issues of Ingenuity, visit engineering.ubc.ca/publications.

ON THE COVER

Celebrating 100 Years: Faculty of Applied Science Dean's Medal of Distinction award winners pictured within the UBC Centennial logo.



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A CENTURY OF INNOVATION AT UBC

UBC 100

Welcome to the continuation of UBC and the Faculty of Applied Science's centennial! UBC marked its centennial beginning on September 30, 2015, and closed with Alumni Weekend on May 28, 2016. To learn more about Applied Science's century of transformation and celebrations, visit 100.apsc.ubc.ca. Enjoy Part 2 of UBC Applied Science's Centennial edition of *Ingenuity* focusing on the past 50 years of our history. For the first half of the century, look to the August 2015 edition at apsc.ubc.ca/ingenuity-ss2015.

Frederick Lasserre Building, 1962

1962

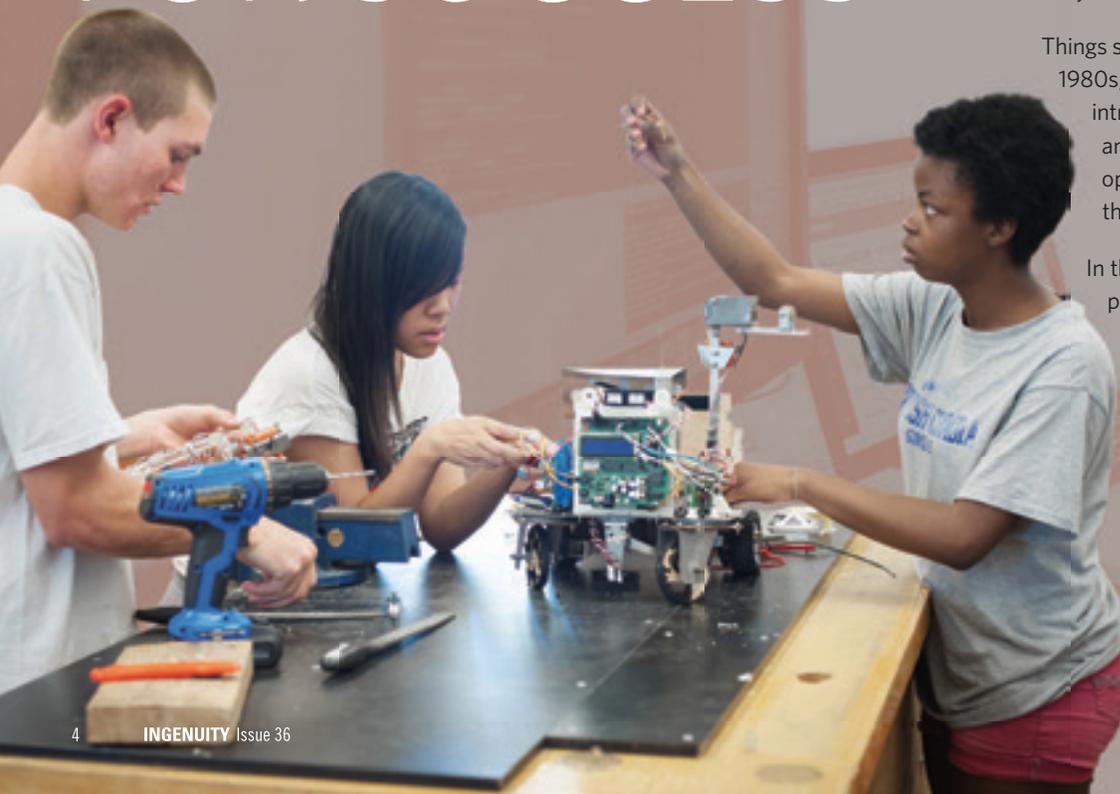
The Frederick Lasserre Building, housing the School of Architecture and named after its first Director Frederick Lasserre, is completed (the School of Architecture joined Applied Science in 1949).

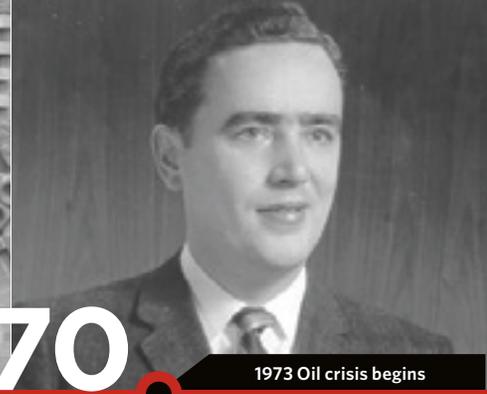
DESIGN FROM THE START— NEW CURRICULUM ENGINEERED FOR SUCCESS

In the 1960s, engineering students took their first year in general science. If they did well enough, they could go on to take a four-year degree in one of the nine disciplines offered at the time. The first two years were fairly general, with calculus, linear algebra, physics, and chemistry being the norm for first year. Engineering Drawing and General Geology are the only courses a modern student wouldn't recognize. Students were expected to engage in "practical work outside the university, scheduled field trips, and the activities of professional and technical societies" to ensure they had actually learned some "hard" skills.

Things stayed much the same until the early 1980s, when differential equations were introduced into the first-year curriculum and the Co-op program was added as an option for students wanting to accelerate their professional development.

In the mid-80s, the requirement to complete a first year of general science was lifted, and students were accepted directly from secondary school for the first time. The Bachelor of Applied Science degree program was now only four years in total (except for Engineering Physics), and students were expected to be able to jump right in to advanced topics like calculus. The first-year curriculum now included Introduction to Engineering and Principles of Computer Programming.





Frank Forward speaking at the opening of the Frank Forward Building, 1968

1968 First man on the moon.

1970

1973 Oil crisis begins

Dean William Armstrong, 1966-69

Dean Armstrong (DSc '75), P.Eng., was a metallurgist who earned his B.A.Sc. from the University of Toronto in 1937. Before becoming dean, he was the head of UBC's Department of Metallurgy (now Materials Engineering) for two years.

The Frank Forward Building, named after Frank Forward (DSc '65), inventor of the "Forward Process" and the head of UBC's Department of Metallurgical Engineering (now Materials Engineering) from 1945-64, is completed. Today it houses the Departments of Materials Engineering and Mining Engineering.

Dean W.D. Liam Finn, 1970-79

The seventh dean of Applied Science and former head of the UBC Civil Engineering department, Dean Finn, P.Eng., received his Bachelor of Engineering at the National University of Ireland and his M.Sc. and Ph.D. from the University of Washington.

In the 1990s, the "requirement for work outside the university" was lifted, and admission was becoming very competitive. The Co-op program expanded, but otherwise the first-year program stayed roughly the same. Computer-Aided Engineering Graphics and Society and the Engineer appeared in the curriculum, indicating a new emphasis on both technology and ethics in an evolving world. Geology disappeared, and the computer science component settled on Principles of Software Development.

In the early 2000s, a broader set of options became available to students — minors in Commerce or Information Technology, as well as a dual degree in Arts and Applied Science.

By the 2010s, many key members of the faculty began to identify ways in which the first-year experience could be optimized. Students were feeling like first year was a disconnected bundle of science courses whose relevance to their later education was unclear. Employers wanted to see better communication skills from graduates and a deeper familiarity with the design process.

With the best interest of the students at heart, the faculty saw an opportunity to create a course that could unify the first-year curriculum for students, give them a sense of community, provide their first introduction to the design process and professionalism in practice, all while improving the contact of students with faculty.

Even though a number of players in the administration had the conviction that we could do better, a considerable investment was required to make it happen — changing the structure of a key course and affecting all the interdependencies for a broad program with over 900 students is no small feat. The Faculty leadership was incredibly supportive of transforming the first-year engineering experience and the ability to revitalize it, and an amazing team of dedicated instructors set to work to design two new courses that could achieve all their goals of unifying the first year and setting students up for success in their particular programs.

"It's been a huge undertaking in terms of time, effort and resources. But I think that you have to decide to just go all-out and commit to it, and just do it," says Carol Jaeger (M.A.Sc. '95 ELEC), P.Eng., associate dean academic, one of the faculty members responsible for transforming the engineering courses — and the first-year experience.

The new courses, APSC 100 and 101: Introduction to Engineering I and II, have so far managed to achieve all of their goals quite elegantly.

The courses are centered on the design cycle, which is introduced right away and forms the foundation for most activities and projects. Projects are done in teams, encouraging students to develop their teamwork and communication skills. Professionalism, ethics, com-

munication and prototyping are all included — but they are not just taught by a "sage on a stage," they are practiced by the students as part of their assignments and projects.

In addition, the faculty are in better contact with the students and are able to offer more support as they transition to their university career. "When we accept a student into the Engineering program, we absolutely believe that they can succeed. Our goal is to help students find this success by providing them the right support and the right challenges, right from the start," says Peter Ostafichuk (B.A.Sc. '97 ENGHYPYS, Ph.D. '04 MECH), P.Eng., chair of first-year engineering and professor of teaching in the Department of Mechanical Engineering, who led the project.

Meanwhile, on the Okanagan campus, the School of Engineering has implemented a "design from the start" approach since the program's inception a decade ago. First-year design courses have students working in teams to solve real-world problems through engineering design. Ray Taheri, senior instructor, sees students harnessing their creative minds and applying the theory they know, while learning how to operate in a team and communicate effectively. Above all, he wants students to develop their confidence through these courses, to realize "that if you believe in yourself, and you believe that this is possible, then nothing can stop you." ■



1980

1982 Canada gains complete independence.

Dean L. Martin Wedepohl, 1979-86

Born in South Africa, Dean Wedepohl was an electrical engineer who acquired his academic education in Johannesburg and Manchester. In his last year as dean, he penned a report that led to the founding of the Canadian Institute for Industrial Technology (CIIT).

The Cheese Factory, fondly known as "The Cheeze," becomes home to the Engineering Undergraduate Society and a meeting place for engineering students.

The Koerner Pavilion (UBC Hospital) is completed, housing the School of Nursing. The School of Nursing has been part of Applied Science since 1924.

Dean Axel Meisen, 1986-1997

Dean Meisen, P.Eng., is a chemical engineer who obtained his PhD from McGill University. After serving as the dean of Applied Science and a chemical engineering professor, he became the president and vice-chancellor of Memorial University.

UBC APPLIED SCIENCE, WHERE THE SKY'S THE LIMIT- OR JUST THE START

As one of UBC's three founding faculties in 1915, Applied Science served as British Columbia's only engineering school for more than 55 years. A century later, the Faculty boasts highly successful academics, world-renowned alumni and entrepreneurs and celebrated architects. UBC Applied Science consistently ranks among the top three engineering schools in Canada and attracts the best and brightest students and faculty from around the world.

ALUMNI

Although too numerous to list all in *Ingenuity*, APSC alumni garner international attention. They have made great strides in their fields and inspire the next generation of students, both at UBC and at top-tier programs around the world.

ACADEMIC LEADERS

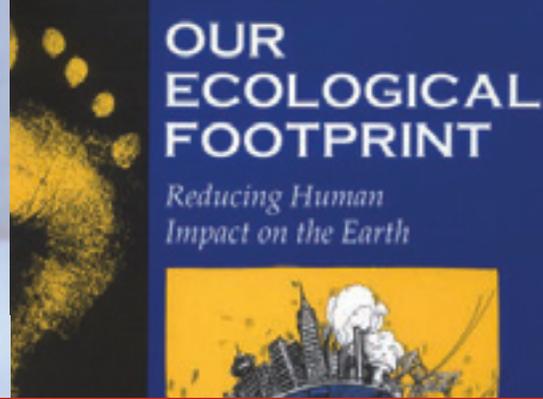
When considering the impact an individual can have on multiple generations, perhaps there is no greater influencer than the university professor. UBC Applied Science graduates who become faculty discover solutions to some of the world's most challenging problems and mentor graduate students, who in turn become the next generation of faculty.

Allen Gosman (BASc '62 MECH), Distinguished Research Fellow and Professor, Imperial College, London, UK

Alumna Indira Samarasekera completed her term as president of the University of Alberta in 2014.

Alumnus John MacDonald founded MacDonald Dettwiler and Associates, Canada's principal space company and currently serves as Chancellor of the University of Northern BC.





1990

1990 World Wide Web was invented.

The AMPEL building is completed — home of the Advanced Materials and Process Engineering Laboratory — two years later, it is renamed the Keith J. Brimacombe Building in honour of the acclaimed metallurgy professor, who died in 1997 and was inducted posthumously into the Canadian Mining Hall of Fame in 2016.

1993

The School of Nursing offers the first undergraduate courses in Canada to deal specifically with nursing care for HIV/AIDS patients.

1996

School of Community and Regional Planning Emeritus William Rees coins the concept "ecological footprint" with the publication of his book *Our Ecological Footprint*. The term refers to the measure of human impact on the Earth's ecosystems.

Ed McBean (BASC '68, CIVL), Canada Research Chair in Water Supply Security, University of Guelph

Joy Johnson (BSN '81) Vice-President, Research, Simon Fraser University

Greg Kovacs (BASC '84 ECE), Professor of Electrical Engineering, Stanford University, Stanford, CA, USA

Pearl Sullivan (PhD '90 MTRL), Dean of Engineering, University of Waterloo

Mary Wells (PhD '96 MTRL), Professor and Associate Dean, Outreach, University of Waterloo

Onita Basu (BASC '94 CHML, MASC '99 CIVL), P.Eng., Associate Professor in Environmental Engineering, Carleton University

Amit Chakma (PhD '87, MASC '84 CHML), President and Vice-Chancellor, Western University

Indira Samarasekera (LLD '06, PhD '80 MTRL), P.Eng., former President, University of Alberta

INDUSTRY AND PROFESSIONAL LEADERS

UBC Applied Science alumni have leveraged their education to go great distances and attain new heights — some literally.

John S. MacDonald (BASC '59, DSc '89), P.Eng., is widely known as a leading entrepreneur in technology and co-founder of

MacDonald Dettwiler and Associates (MDA), Canada's principal space company. MacDonald was a faculty member in engineering at UBC and the Massachusetts Institute of Technology for 12 years prior to the founding of MDA. Appointed chancellor of the University of Northern British Columbia in 2010, MacDonald has been recognized with numerous awards, including eight honorary degrees and the Order of Canada.

Inventor, entrepreneur and biomedical engineer **James McEwen** (BASC '71, PhD '75 ECE), P.Eng., has been recognized for his contributions to biomedical engineering and research in BC with honorary degrees from Simon Fraser University and UBC, as well as the Order of Canada in 2011. McEwen remains connected to Applied Science as an adjunct professor in Electrical and Computer Engineering. He has received numerous awards, including a Principal Award from the Manning Innovation Awards Foundation in 1997.

Harold Madi (M'Arch '99) is the Director of Urban Design for the City of Toronto. With an insightful, 'big picture' perspective on all aspects of urbanism, his expertise has earned him numerous awards for master planning, revitalization, intensification and urban design strategies and guidelines.

Bjarni Tryggvason (BASC '72 ENPH), known as one of the original six Canadian astronauts, flew on a 12-day mission on the

Alumnus Bjarni Tryggvason, one of the original six Canadian astronauts, flew on space shuttle Discovery in 1997.



2000

Dean Michael Isaacson, 1997-2008

Dean Isaacson, P.Eng., is a civil engineer who received his bachelor's, master's and PhD degrees in civil engineering from the University of Cambridge. He served as the head of the Civil Engineering department from 1992-1997.

2001

The Integrated Engineering Program commences.

2002

Offered jointly by the University of Northern BC (UNBC) and UBC, the Environmental Engineering Program begins with first-year students starting at UNBC.

2000 DotCom Bubble bursts and the stock market falls.

Earthquake Engineering Research Facility

2004

The University announces the merger of UBC and Okanagan University College. UBC's Okanagan campus opens on the site of the North Kelowna campus of OUC in September 2005.

The Earthquake Engineering Research Facility officially opens and includes a 10 foot x 10 foot shake table with four degrees of digitally controlled motion to study the dynamic response of test models and components to simulated earthquake motion.

UBC Applied Science faculty utilize research innovations to benefit society. Below, Don Mavinic, Ostara co-founder, and Andre Marziali, director of Boreal Genomics.

space shuttle Discovery in 1997. Now founder and CTO of QDAC Systems, he is an instructor with the International Test Pilots School in London, Ontario.

Ken Spencer (BASc '67, PhD '72 ECE) received UBC Engineering's Community Service Award in 2010 in recognition of his extraordinary commitment to the betterment of society; as a retired CEO and co-founder of Creo Products, Spencer works with many charities locally, nationally and internationally.

Greg Aasen (BASc '79 ECE), Founder, Chief Strategy Officer and COO at broadband communications semiconductor firm PMC-Sierra until 2007, and now an independent advisor, remains a board member at Sierra Wireless, utilizing his decades of experience in the semiconductor industry.

Amiee Chan (PhD '88 ECE), CEO of Norsat International, is credited with turning around the fledgling satellite technology company in 2006. She has won a Women's Executive Network Top 100 Award, ranked third in PROFIT, *Chatelaine's* list of Top Female Entrepreneurs and led Norstat to win a BC Export Award for Advancing Technology & Innovation.

Managing Director of Software Ventures with GE, **Marianne Wu** (BASc '86 ENPH) is a venture capitalist, development engineer and business executive. She was named one of Silicon Valley's Women of Influence

by *SV Business Journal* and one of the Top 10 Women in Cleantech by *Forbes*.

A geological engineer and leader in sustainable mining practices, **Tara Christie** (MASc '98 GEOE), P.Eng., currently president at Gimlex Gold Mines and director at Constantine Metal Resources in Dawson City, is credited with successfully navigating partnerships between miners, environmentalists, politicians and Indigenous leaders.

From UBC Applied Science's School of Architecture, **Kam Sing Wong** (MASA '96) is currently the Secretary for the Environment in Hong Kong, and signature buildings designed by **Peter Busby** (BArch '77) and **Bing Thom** (BArch '66 LLD '08) stand the test of time.

ENTREPRENEURS: INNER-SPACE SPINOFFS

Current faculty member Professor **Andre Marziali** (BASc '89 ENPH), P.Eng., director of UBC Engineering Physics, is a trailblazer in life sciences and the successful founder and chief scientific officer of Boreal Genomics, which develops non-invasive technologies for genomic profiling of malignant tumors from blood plasma.

Westport Innovations, a global leader in alternative fuel and low-emissions transportation technologies headquartered in Vancouver, was founded in 1995 by former Professor Emeritus **Philip Hill** (Mechanical Engineering), P.Eng. Westport has been recognized for



2003 SARS outbreak



The Fred Kaiser Building officially opens, named in honour of the internationally renowned power engineer and businessman who inspired a \$4 million donation for the building. The facility houses the Department of Electrical and Computer Engineering necessitated by the province's Doubling the Opportunity Initiative.

The \$9 million Clean Energy Research Centre and Chemical and Biological Engineering building open at 2360 East Mall — Canada's only interdisciplinary facility dedicated to improving existing energy technologies and developing new sustainable sources of energy.

2005

The School of Landscape Architecture (formerly with the Faculty of Agricultural Science) joins the School of Architecture to form the School of Architecture and Landscape Architecture within the Faculty of Applied Science.

Dean Tyseer Aboulnasr, 2008-11

Dean Aboulnasr, P.Eng., earned her engineering degrees from Cairo University and Queen's University. She is now a professor in the University of Ottawa's School of Information Technology & Engineering.

innovation by the Ernest C. Manning Awards Foundation, winning the foundation's Encana Principal Award in 2011. Now a publicly traded company with more than 650 employees and facilities in more than six countries, Westport has diversified to encompass many different technologies and more than 600 patents.

Ostara Nutrient Recovery Technologies, co-founded by Civil Engineering Professor **Don Mavinic**, P.Eng., in 2005, removes polluting nutrients from wastewater treatment systems and produces environmentally friendly fertilizers. The company's technology recovers phosphorus and nitrogen at municipal and industrial wastewater treatment plants and transforms them into ecofriendly sustainable fertilizer. Ostara has been listed for the past six consecutive years on the Global Cleantech 100 list of top sustainable companies by the UK's Cleantech Group. In 2010, Mavinic won the Dave Mitchell Award of Distinction from the Ernest C. Manning Awards Foundation and the 2016 Engineers Canada Gold Medal.

CARRYING THE TORCH

New Venture Design (APSC 486, COMM 466), offered jointly by Applied Science and the Sauder School of Business, provides students with the opportunity to gain experience launching an entrepreneurial venture based on a new product or process, with the goal of producing a viable prototype and business plan. The course is offered along with other

resources through entrepreneurship@UBC, an interdisciplinary community resource for the development of innovative ventures by the UBC community.

For example, Recon Instruments, co-founded by **Hamid Abdollahi** (MAsc '07 MECH), P.Eng., in 2008, makes smart eyewear technology for sports and is known globally as a leading wearable-technology company. Recon was acquired by technology giant Intel for \$175 million earlier this year.

Tagg Jefferson (BAsc '13 IGEN) is co-founder and CEO of GridCure, a software company that interprets data collected from smart meters to optimize services from utility companies — effectively creating smart power grids. It won the outstanding venture award in 2014 at the Next 36's Venture Day.

Newly graduated alumna **Andrea Palmer** (BAsc '15 MECH), who collaborated with Jefferson while completing her degree, is now co-founder and CEO of Awake Labs. The company has garnered media attention for its technology, which predicts and measures anxiety in children on the autism spectrum. Palmer won the opportunity to do graduate work at Singularity University in Silicon Valley, a business incubator and think tank. ■

Philip Hill, founder of Westport Innovations, passed away February 17, 2016; please see obituary p.31.

Class of 2015 alumna Andrea Palmer co-founded Reveal, a device that monitors anxiety of children with autism and alerts their parents.





2010

The UBC Okanagan School of Engineering receives full accreditation and graduates its first cohort.



2010 Vancouver hosts Winter Olympics.



The Engineering, Management and Education Building opens on the Okanagan campus, housing the School of Engineering, Faculty of Education, Faculty of Management and the College of Graduate Studies.

2012

UBC's School of Community and Regional Planning (SCARP) joins the Faculty of Applied Science when the College for Interdisciplinary Studies (CFIS) disbands.

The Wayne and William White Engineering Design Centre officially opens. Its primary role is to provide a new space for interaction, integration and innovation in engineering education.

Dean Eric R. Hall, 2011-2013

A graduate of McMaster University, Dean Hall, P.Eng., joined UBC's Department of Civil Engineering in 1992. He was appointed department head from 2003-2008, and has continued with UBC Civil Engineering as faculty, conducting environmental research in pollution control and waste management.

THE CATALYSTS

THEY SPARKED AN INNOVATION CULTURE IN THE OKANAGAN VALLEY AND FORGED THE SCHOOL OF ENGINEERING IN THE PROCESS

Leave it to a bunch of exacting engineers to envision a UBC campus in the Okanagan.

The late Martin Wedepohl, P.Eng., was one such engineer. His illustrious career included long-standing professorial and dean posts with UBC's Faculty of Applied Science. Wedepohl retired in 1998 but remained active in academics, research and chairing the U2000 Society, which convinced BC's government to establish a university in Kelowna.

On April 6, 2004, under the Okanagan Partnership Initiative umbrella, the Engineering Advisory Committee for the new campus convened in downtown Kelowna. Wedepohl had retired to West Kelowna and was on hand to contribute. UBC alumnus Jack Van der Star (BASc '77, MASc '82 ECE), P.Eng., now president of his own engineering firm, was there too.

Van der Star saw Wedepohl standing by a table and went up to say hello. About 15 years earlier, Wedepohl was dean while Van der Star was still a UBC Engineering grad student.

"Wedepohl looked at me and asked, 'Jack, how would you like to start an engineering school?'"

By the time the meeting was over, there were more than a dozen people around the table interested in the project. R.A. (Dick) Fletcher,

UBC Okanagan School of Engineering faculty from left: Hojat Rezaei (PhD student), Rehan Sadiq, Mina Hoorfar, Solomon Tesfamariam and Spiro Yannacopoulos.





2016



Dean Marc Parlange, 2013–present

Dean Parlange, P.Eng., received his PhD in Civil and Environmental Engineering from Cornell University. He was previously the dean and a professor of the School of Architecture, Civil and Environmental Engineering at Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland.

2015

The Engineering Student Centre opens. The 10,060-square-foot, two-storey centre is a brand-new hub for more than 5,000 undergraduate engineering students on the Vancouver campus. It includes study and meeting rooms, a large atrium, a computer lab, student society offices and a dedicated space for first-year students.

On January 4, Applied Science launches the Master of Engineering Leadership (MEL) and Master of Health Leadership (MHL) degree programs, offered in collaboration with the Sauder School of Business and School of Nursing (MHL).

P.Eng., former president of the Association of Professional Engineers and Geoscientists of BC and founding chair of the Advisory Committee and Van der Star met that day for the first time. Van der Star says, "It was a team effort with our partnership group. And Michael Isaacson, P.Eng., shared the vision."

MEET THE DEAN

They were pretty powerful advocates, says Isaacson (dean of UBC Applied Science from 1997-2008). "It was quite a vocal industry group that lobbied heavily and successfully to demonstrate the benefits of an engineering school."

Isaacson quickly launched into discussions about the project with UBC leadership. He says the partnership showed how an engineering school would be a nucleus for economic growth: "It's well known that you need an engineering school to trigger the economy, jobs and growth industries. They were instrumental in demonstrating the case to government and, of course, to the university itself."

THE NEW SCHOOL

When the School of Engineering opened in 2005, Isaacson had boots on the ground in Kelowna every week. He was serving as APSC dean on both campuses, sat on both senates and was special advisor to Barry McBride, the Okanagan's inaugural deputy vice chancellor.

The school opened with 67 undergraduate students, five faculty, one full-time staff member and \$40,440 in research grants. Plans started on the school's own building.

"Luckily we soon had Spiro on board," says Isaacson, who hired the School of Engineering's founding director to supervise day-to-day operations. "He fit the bill perfectly — academically excellent, with expertise and skills that younger faculty could aspire to."

Isaacson describes Spiro Yannacopoulos as "a wonderful, calming influence on everybody, with a positive can-do attitude, plus stature, organizational skills and vision."

Isaacson stepped down in 2008 after 11 years as dean, but Yannacopoulos served witness as the school graduated its first cohort in 2010 — 56 BASc students. At the same time, it received full engineering accreditation for all three of its programs. The next summer, the school moved into its own brand-new, four-storey, 14,500 square meter building.

In September 2015, Yannacopoulos was succeeded in the role of associate dean by Professor Rehan Sadiq, P.Eng. A leading researcher in civil and environmental engineering; he joined UBC in 2009.

"After 10 years, our undergraduate and graduate programs are well established and recognized nationally and globally," says Sadiq, adding

that the school is working to strengthen its research in key areas such as materials and manufacturing, clean technologies and renewable energy, and infrastructure management.

"I trust that in the next 10 years, the School of Engineering will become one of the top engineering schools in Canada."

On July 1, 2016, the school welcomed Mina Hoorfar as its new director. Hoorfar joined UBC in September 2006. Her research interests are in the area of modeling and experimental study of flow in micro-structures.

Today, says Van der Star, the School is still gaining momentum by building on its success in terms of size, quality of the faculty and industry's continued involvement.

"We still have a way to go though to see the full economic fruits emerge for the region, but that is starting to show," says Van der Star. "It took Silicon Valley and Waterloo over 20 years to see their economic results, so we're right on track." ■

Yannacopoulos, inaugural director of the School of Engineering, passed away in December, 2015; please see obituary p.32.



HOW MANY ENGINEERS DOES IT TAKE TO CHANGE A... ?

by Marc Parlange

Dean Marc Parlange talks sports, Switzerland, science (the applied kind) and BC's secret to success.

It's June as I write this, my favourite time of year! Wimbledon opens in less than a week, Switzerland is holding its own in the European football finals and Miguel Angel Lopez just won the Tour de Suisse. Seeing the mountains of Brig-Glis, Weesen, Arbon and Davos on television made me a little homesick for Switzerland—I came to UBC from École polytechnique de Lausanne (EPFL)—but I haven't said as much around the office. It's come to my attention I may have been a little too effusive about the place when I first arrived here, effectively negating Switzerland's neutrality as a topic of conversation with my colleagues.

But perhaps you'll permit me just one recollection... During my 11 years at EPFL, I was part of a team that expanded the school from 4,000 to 10,000 engineering students. That growth effectively transformed Lausanne into one of Europe's most potent innovation hubs. European and North American companies jetted into the region to set up shop, attracted by the growing pool of highly talented grads. Before long, there were over 2,000 professional engineers and scientists, all armed with the newest research and technologies, collaborating, researching and inventing together. Suddenly, Zurich had to step up its game just to stay competitive, while Lausanne's rise reinvigorated the economy of all of western Switzerland.

Highest Demand, Lowest Supply

In 2013, I left that boom for British Columbia. I arrived here to find a cadre of young students so accomplished, so ambitious, so talented and so diverse, I almost couldn't believe my good fortune. I found a strong resource economy with deep roots and a burgeoning innovation ecosystem that was starting to make waves nationally and internationally. But I could see the potential for more... *a lot* more.

BC has long been a leader in the international sustainability conversation and it's the logical epicenter for a green-tech revolution in

the Pacific Rim. Tech is poised to be to BC's economy what it was to Silicon Valley's 25 years ago. I began to ask myself: *What are we waiting for?*

I turned to the numbers and here's what I found: Of all the provinces in Canada, British Columbia has the highest demand for engineers. That demand is growing due to those robust resource and knowledge economies of ours. The Microsofts, Amazons and Hootsuites have come here, lured by talk of hidden talent. As well, the D-Waves, General Fusions and Zymeworks—along with other super-successful UBC spin-offs—are out there creating jobs that never existed before. This is all good stuff.

But wait: head for head across the country, BC is graduating the *lowest* number of engineers. And this, despite the fact that we have some of the most highly qualified, ambitious, talented and diverse applicants I've ever seen. Why? It turns out that of every five qualified students who want to study engineering in BC, we have the space to accept just one. I'm not talking about space at UBC, but space in colleges and universities *throughout the province*. The other four, mostly BC students, are going elsewhere for their education. And statistics show they'll likely work where they graduate. Once they're gone, we've lost them.

I spoke with Bill Tam, president of the BC Technology Industry Association. "Access to talent is the number one issue for tech companies in British Columbia," he said. "A strong and healthy pipeline of talent is necessary to take BC's tech sector to the next level." I realized that if we were going to provide more BC talent to BC companies, something was going to have to change in BC schools.

How many engineers does it take ...?

One of my favourite memories of my early days in Canada was discovering all the English-language engineering jokes. The light bulb series is a classic, each a variation on "How many engineers does it take to change a light bulb?" My question is, *How many engineers does it take to change an economy?*

In a bold move, BC's universities and colleges are partnering to propose that the number of engineering student seats in the province be increased by as

much as 100 percent over the next 10 years. The second aspect of our proposal is that, collectively, we reimagine how we educate engineers. The jobs we're preparing them for don't exist yet and the problems they'll have to solve, we haven't confronted yet. So side by side with the traditional engineering disciplines, we're building multi-disciplinary programs across the applied sciences and in partnership with science, business, forestry, land and food systems and medicine. We're diversifying our student body, ensuring equal access for rural-based and Indigenous students and reaching out to women, and girls as early as grade six, in our aim to address the historical gender bias of the field and bring the balance to 50-50. A diversity of grads means a more diverse economy and the goal here is creative, resilient and diversely skilled next-gen "entrepreneurs" and engineering leaders for British Columbia.

Skin in the Game

UBC's got skin in the game, as Warren Buffett put it, and the commitment of the other universities and colleges is strong. We are re-envisioning the partnership model between colleges and universities to increase our capacity to take engineering transfer students. We're partnering with local industry to create new research clusters in biomedical, environmental and clean-energy, urban systems design and software and computer engineering. And together with the Sauder School of Business, the Faculty of Science and entrepreneurship@UBC, UBC APSC is spearheading the development of a UBC-based innovation incubator called HATCH that will open its doors later this year.

UBC Applied Science, itself an amalgamation of disciplines, now finds itself poised to help lead a socio-economic sea-change that will be fuelled by interdisciplinary innovation. UBC APSC alumni—architects, engineers, landscape architects, nurses and planners all—are better positioned than perhaps anyone else to help effect this transformation. If you have an idea that you think would help—if I've managed to switch on that legendary light bulb—then I would love to hear from you.

How many applied scientists does it take to change an economy? *All of us.* ■

The UBC ENGINEER

ESPRIT DE CORPS

Engineering students honour their rich history and traditions, dating back to 1915, when the Faculty of Applied Science was first established at UBC. The pride, competitiveness and ingenuity of engineering students is legendary, and the past 50 years have seen the UBC Engineering student body transform into more responsible global citizens who value inclusiveness, celebrate uniqueness and work together to solve challenges and create innovative results.

OUTSIDE THE CLASSROOM

One goal of Applied Science Dean Marc Parlange, P.Eng., is that every UBC Engineering student acquires extracurricular experience before graduating — and what better way to gain this experience than joining a student team?

The history of UBC Engineering teams began in 1972 with the award-winning Wally Wagon. Over 100 engineering students came together to design a safe, environmentally friendly commuter car for the Urban Vehicle Design Competition. The students competed against 92 entrants and won the overall Award for Excellence.

There are now 26 competitive teams and many clubs for engineering students to choose from to develop their non-academic skills, including the UBC SailBot team, which has won the International Robotic Sailing Regatta for the past three years; the UBC chapter of



ENGINEERS UBC

Engineers Without Borders, which focuses on improving the livelihood for people in developing countries; Women in Engineering (WiE), working to promote equal opportunities for women in engineering through professional development workshops and networking events; and the UBC Biomedical Engineering Student Team, which aims to develop effective new health care solutions for local and international communities by improving medical technology.

The Engineering Co-operative Education (Co-op) program, which began in 1980, is a unique way for UBC students to gain extracurricular experience in addition to Co-op credit. The number of participating students has nearly doubled in the past decade, and it is easy to see why, with the numerous advantages the program offers — students alternate academic with paid work terms and gain professional employment skills to increase their confidence and success in the workforce.

Engineering Undergraduate Society—EUS

Engineering traditions go back 100 years, but over time some traditions no longer align with our students' needs or the University's vision. Jeanie Malone (fourth-year, ECE), current president for the Engineering Undergraduate Society (EUS), notes that a few years ago "although the EUS was a fantastic group of tightly knit individuals, it was struggling to reach out to the whole engineering community."

In 2008, former EUS President Bowinn Ma (BASC '08 CIVL), P.Eng., took on the initiative of establishing institutional reform and restructuring the EUS. Today's engineering students "still have their Reds, they still love their Cairn, and Volkswagens might still appear on clock towers... but the EUS is trying to shift away from negative stereotypes associated with engineers," notes Malone. For example, the Iron Pin Ceremony

was established in 2014 as part of the EUS Inclusivity Initiative; first-year students receive an iron pin symbolizing their agreement to uphold the Engineering Code of Ethics and act as distinguished leaders in society as the first steps toward becoming professional engineers.

Former EUS President Alan Ehrenholz says his favourite thing about the EUS is how far they have come in “engaging a wider range of students with diverse and inclusive programs over the past two years.” He says that they will continue working with these priorities in mind to create an EUS where all students feel welcome and included.

A PLACE OF THEIR OWN

The Cheeze is remembered fondly by alums from the 1980s to recent times as the original headquarters for the EUS. The Cheeze, used to produce and sell cheese during the Great Depression, had fallen into a constant state of disrepair. Over time, only a fraction of the growing student body felt comfortable using the space.

In September 2015, however, the new Engineering Student Centre (ESC) opened, thanks to the \$5.2 million raised by students, alumni and industry. The modern

10,060 square foot, two-storey facility includes study and meeting rooms, a large atrium, a computer lab and a dedicated space for first-year students. Ehrenholz calls the ESC a space where “academic pursuits, professional development and social activity can occur at the same time, within the same building.”

Read more about the ESC in the Newsworthy section on page 22.

FROM NAUGHTY TO NICE

UBC Engineers (purported — they will never admit to it!) take pride in stealthy stunts (often involving VW Bugs) that showcase ingenuity and engineering skills. However, the episodes have been evolving over the past decade from naughty to nice, with a current focus on raising funds and highlighting local charities. In 2006, canned food donations were left in front of the Greater Vancouver Food Bank in the shape of the Engineering Cairn; in 2008 students dressed the giant Inukshuk at English Bay in a large custom-made Engineering Red filled with clothing donations; and 2012 saw our Okanagan students enjoying some fun

Bottom left: Students in the UBC BEST International Medical Device Initiative developed this accelerometer to measure changes in the force on patients' chest wall due to respiration.

Bottom right: For the 2008 student prank, the English Bay Inukshuk was dressed in an Engineering Red and filled with clothing donations.



with a floating E-marked Ogopogo in Okanagan Lake, gifting a treasure chest full of cash and clothing donations for the Salvation Army.

GLOBAL CITIZENS

A sense of professional responsibility has long been recognized by engineers and symbolized by those who wear the Iron Ring in Canada. Today's engineering students are fun-loving activists who work hard and play hard, all while promoting the inclusive, respectful and professional environment that is the key to their future, global success. ■

Bottom left: This co-op student performs routine soldering work on a router line card, one of the many skills learned during a student's co-op work term.

Bottom right: UBC Sailbots, who have earned their name as the most successful team in the International Robotic Sailing Regatta with three straight victories, began a historic trans-Atlantic journey in August, 2016.

Top left: UBC Engineering students on the Okanagan campus wear their Reds. Right and bottom: 2015 marked the beginning of an iron pin ceremony on both campuses, to create early awareness of the engineering code of ethics.





CELEBRATING 100 YEARS WITH 100 HONOUREES; ARCHITECTS, CITY PLANNERS, ENGINEERS AND NURSES RECOGNIZED FOR MAKING A DIFFERENCE



Like Oscar night, the stars came out to shine when 100 people received the Dean’s Medal of Distinction created to honour the University of British Columbia and the Faculty of Applied Science’s 100th anniversary. The medals were awarded during Applied Science’s Centennial Celebration, held at the Robert H. Lee Alumni Centre on Thursday, April 14, 2016.

Throughout the Faculty’s 100 year history, thousands of individuals have contributed to creating a positive change in the world through the generation, professional embodiment and innovative application of new knowledge. UBC architects and landscape architects, community and regional planners, engineers and nurses, along with Applied Science faculty and staff, have made a tremendous impact across British Columbia, Canada and the world.

“People — the professions they embody and the work they do — are what make UBC and Applied Science so special. The uniqueness of aligning multiple professions within one faculty enables us to achieve great things together,” says UBC Applied Science Dean

Marc Parlange. “It is my great pleasure to recognize these outstanding individuals representative of so many more who came before and will follow after in their footsteps.”

A few of those recognized with the UBC Applied Science Dean’s Medal of Distinction include:

Larry Beasley (MA '76), alumnus of UBC’s School of Community and Regional Planning, is principal of Beasley and Associates and the Distinguished Practice Professor of Planning at UBC. The retired Co-Chief Planner for the City of Vancouver, he currently sits on the board of Translink. His latest book is *Ecodesign for Cities and Suburbs*. With two honorary doctorate degrees, he is a Fellow of the Canadian Institute of Planners and an Honorary Member of the Canadian Society of Landscape Architects. He has been recognized as an Advocate for Architecture by the Royal Architectural Institute of Canada, and holds the Kevin Lynch Prize from the Massachusetts Institute of Technology as well as the Queen Elizabeth II Diamond Jubilee Medal. He is a Member of the Order of Canada.

Madeleine Kétéskwew Dion Stout, a faculty member in UBC's School of Nursing, a nurse and president of Dion Stout Reflections, has served on the boards of the National Forum on Health, Mental Health Commission of Canada; Aboriginal Nurses Association of Canada; and First Nations Health Authority. She utilizes her Indigenous language Cree in her ongoing research, writing and lectures. Her most recent award is the Order of Canada.

Abdul Ladha (BASc '87) is the CEO of Overture Living, Ableauctions.com and Argonne Develop. He holds an honors degree in electrical engineering from UBC. As CEO of Ableauctions.com Inc., he directed the development of technology to broadcast auctions live over the Internet and led it to become the pre-eminent supplier of live online auction services to the world's most prestigious galleries including eBay and the National Auctioneers Association. He is the founder of SPARK, a Global Philanthropic Foundation dedicated to youth philanthropy and the support of 90 orphans and 14,000 children in Africa. He is the recipient of the Great Trekker Award, Tri-cities Business Person of the Year Award and the Federal Business Development of Canada Entrepreneur of the Year. Abdul is recognized as one of the leading contributors to UBC, a member of the President and Chancellor's Circle and has the honor of having the Science Student Centre named after him. He is also a key benefactor for the Lions Gate Hospice and a founding director of the Canadian Institute for Technological Advancement.

Patricia Patkau is a professor emeritus at the UBC School of Architecture and Landscape Architecture. She has led a career committed to both teaching and practice. In 1990, she joined SALA after two years at UCLA. During her years of teaching she was also a partner of the Vancouver firm, Patkau Architects. Patricia is a Fellow of the Royal Architectural Institute of Canada, a member of the Royal Canadian Academy of Arts, an Honorary Fellow of the American Institute of Architects and the Royal Institute of British Architects. In 2009, she was awarded the Tau Sigma Delta Gold Medal for exemplary commitment to architectural education and to the practice of architecture. In June of 2009 she, in conjunction with her partner John

Patkau, received the Royal Architectural Institute of Canada's Gold Medal. She is also a Member of the Order of Canada.

William (Bill) Rees is a human ecologist, ecological economist and former director and professor emeritus of UBC's School of Community and Regional Planning. His research focuses on the ecological requirements for sustainable development and on the behavioural and socio-cultural barriers to change. Best known as the originator of 'ecological footprint analysis,' Rees has authored over 150 peer-reviewed and numerous popular articles on sustainability policy (or lack thereof). The *Vancouver Sun* named him as one of BC's top public intellectuals in 2006. He is a Fellow of the Royal Society of Canada and was awarded both the Boulding Prize in Ecological Economics and a Blue Planet Prize (jointly with Dr Mathis Wackernagel) in 2012. Rees was elected a full member of the Club of Rome in 2014 and received the 2015 Herman Daly Award from the US Society for Ecological Economics.

Bing Thom (BArch '66, LLD '08), alumnus of the UBC School of Architecture and Landscape Architecture, is principal at Bing Thom Architects, and one of Canada's most admired and accomplished architects. Born in Hong Kong, he immigrated to Canada as a child and received his Bachelor of Architecture from UBC and his Master of Architecture from the University of California at Berkeley. A student of the 60s, Bing travelled Asia and helped pioneer one of the first academic programs in ethnic studies in North America during his time in Berkeley. He worked in the offices of Fumihiko Maki and Arthur Erickson before starting his own firm in 1982. With projects around the globe, including UBC's Chan Centre for the Performing Arts, Bing's commitment to using architecture to improve the urban context and social condition has been recognized by a range of honours including the Order of Canada and the Queen's Golden Jubilee Medal for outstanding contributions to architecture and community. Bing is the recipient of the RAIC Gold Medal and Honorary Degree of Laws from UBC and SFU. ■

For a complete listing of the Dean's Medal of Distinction recipients and photos from the Applied Science Centennial Celebration, visit: 100.apsc.ubc.ca/deans-medal-recipients.

DEAN'S MEDAL OF DISTINCTION RECIPIENTS



Joan Anderson



Claudio Arato



Rebecca Armstrong



Sara Badiei



Alice Baumgart



Kim Code



Denis Connor



Harold Copping



Aaron Coret



Ross Craigie



David Dreisinger



John Dyble



Cathy J. Ebbehoj



Norman Epstein



David Farrar



John Friedmann



Dan Gelbart



Paul Geyer



Ross Gilmour



Victor Goncalves



Oldrich Hungr



Alan Hutton



Michael Isaacson



Joy Johnson



Fred Kaiser



Henry F. Man



Edward McBean



Andrea Marshall



Sean McBeath



Ian McDougall



M. Judith Lynam



Jim McEwen



J. Peter Meekison



Axel Meisen



Malcolm Metcalfe



Cornelia Hahn Oberlander



Andrea Palmer-Boroski



Douglas D. Paterson



Patricia Patkau



William Rees



Ken Spencer



Krishan D. Srivastava



Pearl Sullivan



Ralph Sultan



John Swainson



Jack Van der Star



Henry Wakabayashi



Rabab Ward



Fiona Webster



Bill Weymark

The Faculty of Applied Science **Dean's Medal of Distinction** was created in 2015 to mark the celebration of the University of British Columbia and Applied Science's 100th anniversary. The medal serves to recognize individuals who have brought high honour to the Faculty and/or who have made long standing and

significant contributions to advance its vision, mission and mandate. In 2016, this medal was bestowed upon 100 distinguished individuals during the Faculty of Applied Science Centennial Celebration on April 14, 2016.

Complete details can be found at apsc.ubc.ca/deans-medal.



Larry Beasley



Gary Birch



Dan Bowditch



Amit Chakma



Amiee Chan



Gordon Davis



Andre De Leebeeck



Madeleine Kétésckwew
Dion Stout



Ken Dobell



Dan Doyle



Randy Findlay



W. D. Liam Finn



Richard Fletcher



Bruno Freschi



Daniel Friedmann



John Grace



Eric Hall



Ossama Hassanein



Alf Hills



George "Bud" Homsy



Norman Keevil



Richard Kerekes



Brent King



Gregory Kovacs



Rachael L'Orsa



Abdul Ladha



Sandy Laird



Charles Laszlo



Erik Lindholm



Ron Loewen



Takako Rose Murakami



Omkaram Nalamasu



Eric P. Newell



Aleksey Novicov



Peter Ostafichuk



Martha Salcudean



Indira Samarasekera



Ajai Sehgal



Helen Shore



Colin Smith



Bing Thom



John Thompson



Sally Thorne



Thomas Tiedje



Peter van der Gracht



Wayne J. White



William F. White



David P. Wilkinson



Marianne Wu



Glennis Zilm

Newsworthy



ENGINEERING STUDENT CENTRE: OPEN AND WELCOMING STUDENTS!

Lower right, from left: Nicole Davies, Marcel Bittel, Anthony Cheung, Simon Nottingham, Vasee Navaratnam, Scott Bray, Peter Hatcher, Torrence Robinson of Fluor Corporation celebrate the opening of the Engineering Student Centre.

On September 24, 2015, UBC Chancellor Lindsay Gordon (BA '73, MBA '76) joined Dean Marc Parlange to celebrate the official opening of the Engineering Student Centre (ESC). Seven years in the planning and making, the ESC is dedicated specifically to engineering students and will provide a welcoming home to students across all engineering disciplines. The grand opening was attended by ESC donors, as well as members of the Engineering Undergraduate Society (EUS) executive and APSC faculty.

The ESC is an integral part of the Faculty's vision of creating a distinctive learning environment, which includes, "the creation of physical spaces that spark vibrant interactions with colleagues." By bringing together students from all UBC Engineering disciplines, the ESC serves as a hub where students can learn from each other and from their community through extra-curricular programming and interactions, building the relationships and networks they will need to succeed as students and to grow as professional engineers.

Home to the EUS and including a room dedicated to "Red" sales, the ESC will become a place that ignites and inspires the camaraderie and community for which UBC Engineering is known — a place where engineering teams can gather and where old and new traditions are celebrated. The ESC is an opportunity to

ensure that UBC Engineering is more than just classes and labs for students — it's a place where students can get involved with everything UBC has to offer and, in the process, become the best engineers they can be.

The engineering community is clearly illustrated throughout the building — Fluor, Kiewit, the UA Local 170 Plumbers and Pipefitters Union, Chung family, Modi family and Aleksey Novicov (BASc '81 MECH)— all made substantial donations to make the Faculty's vision for UBC Engineering a reality, and now have rooms named in honour of their support. Rooms are also named for two people integral to UBC Engineering's growth: Rona Hatt Wallis (BASc '22 CHML), the first known female Canadian chemical engineering student, and Walter Gage (BA '25, MA '26), former UBC dean and president. Both rooms were made possible through alumni generosity. All alumni and partners who made contributions of \$1,000 or more are named on the building's large donor wall. Each and every one of these rooms and installations clearly illustrates the strong and supportive UBC Engineering community. Thank you very much to all the alumni and industry partners who contributed to the ESC — it would not have been possible without your help!

The Engineering Student Centre hosted Old Red, New Red in 2015 — if you want to have a good look at this newest and spectacular addition to UBC Engineering, please join us for this annual alumni event! ■

A YEAR CAN CHANGE EVERYTHING

An MBA or an MEng or MSN? That's a question that many early career architects, engineers and nurses ask themselves. With the launch of UBC's new Master of Engineering Leadership (MEL) and Master of Health Leadership and Policy (MHLP) degrees in January 2016, forward-thinking architects, engineers and health practitioners have an option that combines the best of both worlds.

Designed in close collaboration with industry, the MEL and MHLP are one-year full-time degree programs jointly offered by UBC Applied Science and the Sauder School of Business. The degrees combine in-depth technical training in one of eight sector-specific areas with leadership and business-skills development.

Extensive consultation with alumni, architects, engineers, health practitioners and industry executives in recent years highlighted the pressing need for a new type of education, says Professor Elizabeth Croft (BASc '88 MECH), P.Eng., associate dean of education and professional development for the Faculty of Applied Science.

"We heard the strong demand for education that enables students to develop technical skills that go beyond a specific engineering or nursing discipline," says Croft. "Employers want graduates with multidisciplinary technical skills across the industry value chain so they can develop and implement technological innovations that advance the entire production stream."

Technical skills alone, however, are not enough. "They also need a strong base of business skills," she says. "Combining a leadership foundation with technical study is a real win."

Students in the programs strengthen their leadership skills through courses delivered by the Sauder School of Business in project management and leadership, sustainability, analytics for applied sciences, organizational leadership and business acumen for technical leaders.

These classes account for approximately 40 per cent of the courses, with the remainder providing technical specialization in one of nine industry sectors in the engineering programs: Advanced Materials Manufacturing, Clean Energy Engineering, Dependable Software Systems, Green Bio-Products, High Performance Buildings, Integrated Water Management, Naval Architecture and Marine Engineering, Resource Engineering Management and Urban Systems and specialties in Clinical Education and Seniors Care, for students in the the Master of Health Leadership and Policy program.

"Each program is in an industry where there's significant growth and opportunity," says Croft. "That's a real draw for students, who can complete their master's degree in one year and then drive their career forward by taking on new challenges and leadership roles."

Another draw for students? Being able to learn from the internationally recognized faculty members leading and teaching the programs. At the second annual Innovate event last October, for example, six faculty members associated with the MEL program delivered brief talks about their research. From the inspiring vision of a clean energy future presented by Professor Walter Mérida, P.Eng., to Professor Heather Trajano's overview of her work on high-value bioproducts, the presentations were insightful and thought-provoking. To watch the talks, visit innovate.apsc.ubc.ca. ■

To learn more about the MEL & MHLP programs, visit apscpp.ubc.ca.

MAJOR BC ENERGY PROVIDERS RENEW SUPPORT FOR MEL'S CLEAN ENERGY ENGINEERING

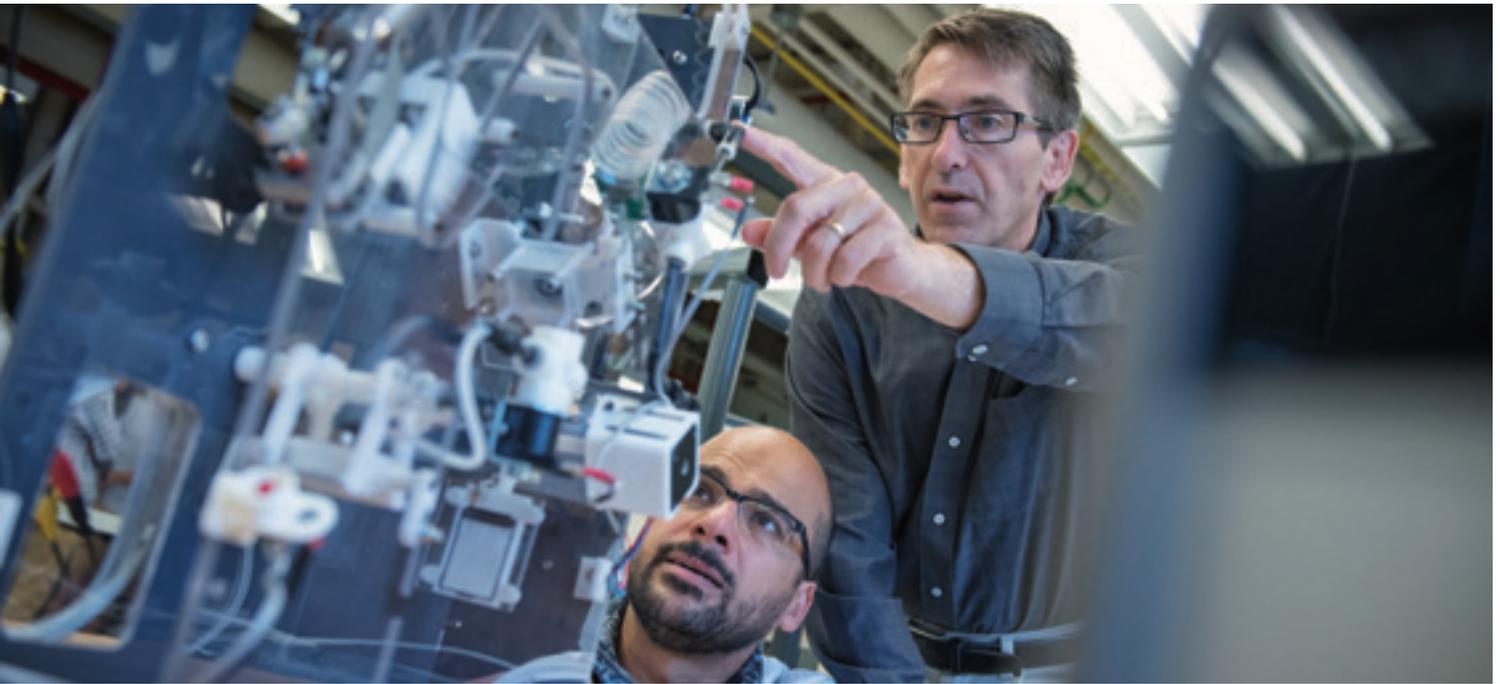
The two largest energy utility companies in British Columbia, British Columbia Hydro and Power Authority (BC Hydro) and FortisBC Energy Inc. (FortisBC), recently renewed support for innovative clean energy education at UBC. Both BC Hydro and FortisBC are generously supporting the new Master of Engineering Leadership (MEL) in Clean Energy Engineering for one year, following their funding of the program's previous iteration, the Master of Engineering in Clean Energy Engineering. Funding from the two organizations supports all aspects of the new program, including the recruitment of talented students from around the world, the development and implementation of an innovative curriculum, and the establishment of co-operative education placements within the energy sector.

The MEL in Clean Energy Engineering prepares students to become the next generation of leaders and innovators in the energy industry worldwide by combining studies in engineering science, management and leadership into a single one-year program. The Faculty welcomed its first cohort in January 2016.

"BC is already known around the world as a leader in clean energy, and the sector is growing rapidly. We are proud to be preparing the new generation of energy professionals to take the industry to the next level," says Dean Marc Parlange, P.Eng.

The Faculty thanks both BC Hydro and FortisBC for their commitment to clean energy education at UBC through their support of this program, which will ensure BC's place as a world leader in the clean energy sector. ■

Read ENGAGE 2020 at strategicplan.apsc.ubc.ca, or email reception@apsc.ubc.ca for a print copy.



Professor James Olson with post-doctoral fellow Hayder Salem in the Pulp and Paper Centre lab.

ADVANCING APPLIED SCIENCE RESEARCH

Established through decades of equal parts inspiration and perspiration, Applied Science's research strengths — clean energy, advanced manufacturing, digital technologies, forest bio-economy, health, mining, transportation, urban systems and water — came to fruition with the right combination of people and place.

Within the context of the Faculty's strategic plan, ENGAGE 2020, and under the leadership of Professor James Olson (BASc '91 ENPH, PhD '96 MECH), P.Eng., associate dean for research and industrial partnerships, Applied Science's research enterprise is taking a new focused approach.

"The Faculty is committed to honing our research strengths, assuming global leadership, expanding the boundaries of professional practice and accelerating knowledge mobilization to benefit society," says Olson. "We have a bona fide strength of faculty across disciplines who demonstrate a lifetime commitment to their chosen fields and are dedicated to making a positive difference for society."

Olson's own career speaks to this point. With a childhood immersed in British Columbia's breathtaking natural beauty, the forest occupies a special place in his past. Through his research, it is set to play a vital role in a more sustainable future for us all.

Olson, a professor in the Department of Mechanical Engineering, is a member of the Forest Bio-Products Institute at UBC. The Institute brings together a multidisciplinary research team, working collaboratively with a single goal in mind: to advance the world's bio-economy, an economy based on renewable biological resources.

The Institute couldn't have been formed at a more critical time. As the world's population booms and the middle class in countries such as China and India rapidly expands, our consumption of nonrenewable resources is skyrocketing — causing irreversible damage to our planet.

The Institute, however, is maximizing British Columbia's natural resource advantage to lead the bio-revolution: extracting high-value products from bio-mass, an abundant material sourced primarily from residual and waste products from BC's forest industry, to create alternative and sustainable materials, energy and chemicals.

Olson calls the Institute's researchers the "superhero team" who have already spurred innovation in the bio-economy. Paul Watkinson, P.Eng., of UBC's Chemical and Biological Engineering (CHBE) Department and his team, for example, are working on developing and testing high-quality synthetic gas, or "syngas," derived from biomass, using cutting-edge technology at the UBC Pulp and Paper Centre. This renewable

source of power has the potential to replace natural gas and run our future fuel cells.

Assistant Professor Heather Trajano, also of CHBE, is performing research that supports the Forest Products Association of Canada's assessment that pulp, paper and saw mills could produce new, high-value bioenergy, biochemical and biomaterials — and its challenge to generate an additional \$20 billion in economic activity by 2020. The goal of her research is to make large-scale bio-refineries a reality.

Olson has long been driving innovation in the bio-economy and beyond. Following revolutionary energy-saving developments in pulp and paper industry technology, Olson currently works with Pulp and Paper Centre Director and CHBE Professor Mark Martinez, P.Eng., to formulate a lightweight, low-density cellulose material from micro- and nanofibres — part of a new class of "bio-materials." And Institute scientist Professor Frank Ko, of Materials Engineering, is developing new materials of this kind.

Bio-materials have the potential to replace fossil-fuel materials, and have a wide and exciting range of applications, from soundproofing and insulation to advanced cosmetics and high-strength turbine blades, and even to bio-compatible scaffolds for 3-D printing of human tissue.

These are a few of the projects being initiated by the Forest Bio-Products Institute researchers — and add to those, programs such as the new Master of Engineering Leadership in Green Bio-Products to train and educate the next generation of bio-economy leaders.

The BC forest is intimately woven into the fabric of our province, and Olson is optimistic about its potential — a potential that the Institute is harnessing to bring about a greener future. "It's an exciting time to be part of the bio-revolution," he says, "and to be part of the forest industry." ■

To learn more about Applied Science's research focus, visit apsc.ubc.ca/research-industry.

More information about Forest Bio-Products Institute is available at fbp.ubc.ca.

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CORNELIA HAHN OBERLANDER RECEIVES MARGOLESE NATIONAL DESIGN FOR LIVING PRIZE

In October 2015, it was announced that landscape architect and SALA mentor Cornelia Hahn Oberlander (LLD '91) would be the winner of the Margolese National Design for Living Prize. This unrestricted \$50,000 annual prize recognizes a Canadian who has made and continues to make outstanding contributions to the development or improvement of living environments for Canadians of all economic classes. It was created by a generous estate gift to UBC by Leonard Herbert Margolese.

The award recognizes Cornelia as one of the world's leading landscape architects who, over the past

60 years, has collaborated with internationally acclaimed architects on a wide range of projects around the world. She devoted her early professional years to designing landscapes for low-cost housing projects and playgrounds throughout Canada. She has also designed the iconic landscapes of the UBC Museum of Anthropology, Robson Square in Vancouver and Ottawa's National Gallery.

A national Margolese Prize jury praised her landscape designs as "breathtaking, poetic, unforgettable, charged with meaning, and above all, modernist. Her interests draw on technical, ecological, symbolic and artistic practices, in a range of scales from the entire planet to tiny neighbourhood parks. [...] It is hard to imagine a living architect, planner or landscape architect in Canada whose profile could compare to Oberlander's. Figures in other fields who might have similar impact are perhaps Alice Munro for literature, the late Glenn Gould or perhaps Joni Mitchell for music, Leonard Cohen for poetry, the late Emily Carr for painting. Cornelia Oberlander is as close as we get to a household name in landscape architecture. She is, quite frankly, a national treasure."

In addition to the Margolese Prize, Cornelia has been recognized with 12 honorary degrees and was appointed an officer of the Order of Canada in 2009. She was awarded the Royal Architectural Institute of Canada Allied Medal in 1995, the Lifetime Achievement Award from the Canadian Society of Landscape Architects in 2006, the Sir Geoffrey Jellicoe Award, the International Federation of Landscape Architects' premier award, in 2011, and the ASLA Medal, the most prestigious award by the American Society of Landscape Architects, in 2012. In recognition of these accomplishments and more, she was also selected as one of the 2016 Dean's Medal of Distinction recipients (see p.20 for details).

She plans to use the Margolese Prize to further her work greening the city. ■

More information on the prize can be found at: sala.ubc.ca/about/margolese-national-design-living-prize.

INTRODUCING THE MCEWEN FAMILY APPLIED SCIENCE QUALITY OF LIFE PRIZE

The Faculty of Applied Science — with the initiative of the McEwen Family Charitable Trust — is celebrating 100 years of contributing to our communities, with the new McEwen Family Applied Science Quality of Life Prize. Open to all APSC undergraduate or graduate students, the prize showcases innovations that improve the quality of life in our communities.

“This prize truly embodies what we value in Applied Science,” says Dean Marc Parlange, P.Eng. “For 100 years, Applied Science has undertaken research and education to create and inform the professionals who in turn build and improve our communities. Our alumni build better cities, design homes and landscapes for better health, improve nursing practice and develop a wide variety of innovations that positively impact millions of people. This prize helps us showcase what today’s students will have to offer our communities tomorrow.”

McEwen Family Charitable Trust representative Dr. Jim McEwen, P.Eng. (BASc '71 ECE, PhD '75 ECE) a renowned biomedical engineer, says, “I was motivated to create and support this prize in part to encourage creative projects originated by students in any area of applied science that has the potential to improve the quality of life of others, in part to recognize the truly outstanding achievements being made by students in such projects, and in part to highlight the best of these projects as a reminder that each of us has within us the potential to significantly improve the quality of life of others in new and exemplary ways.”

The 2016 finalists were showcased and the winner, Takhti — a long range wireless networking solution for developing communities — was announced on April 28 at the McEwen Family Applied Science Quality of Life Event.



Dr. McEwen (left), with the winning team of the Quality of Life Prize.

Takhti’s creator Saadan Sulehri, fourth-year electrical engineering student and his non-profit organization - LET’S International Charitable Association, will apply the \$25,000 prize to bring the innovation forward.

“Thank you to UBC Engineering and Dr. McEwen for promoting education and inspiring us to make a difference,” says Sulehri upon accepting the prize. “When tackling some of the biggest humanitarian issues, people are often daunted by the sheer magnitude of the issue. We believe rather than shying away from these issues we should work towards long-term solutions and not waste time in taking the first step.

We believe that due to the self-sustainable, affordable and effective nature of our approach, it will be the leading solution in providing educational, medical and socio-economic development. The confidence of the McEwen prize reinforces our belief that we can truly make a difference.” ■

More information on the prize can be found here: apsc.ubc.ca/mcewenQoLprize.

INTRODUCING THE WALTER GAGE BOOK PROJECT



Walter Gage touched the lives of many students as a math professor, dean of Engineering and later as the president of UBC. A number of UBC alumni have joined together to develop a book project to recognize the personal impact of Dean Gage on students, faculty members and staff at UBC.

With your help the committee would like to collect stories, letters and images to capture the essence of Dean Gage. The collection will lead to the publishing of a book and a dedicated online website waltergagebook.engineering.ubc.ca If you would like to participate, please email alumni@apsc.ubc.ca.

APPLIED SCIENCE FACULTY

NEW FACULTY SPOTLIGHT

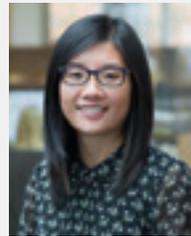
The Faculty of Applied Science attracts top faculty from around the world — award winning experts in their fields, innovative researchers, empowering educators and industry leaders. Each new faculty we hire grows our network and strengthens our position as a leader in architecture and landscape architecture, community and regional planning, engineering and nursing. The new faculty that have joined us in 2015-16 have come from Harvard, École Polytechnique Fédérale de Lausanne, Kyoto University, University of Queensland and the Canadian Forces; they are cyclists, musicians, coffee enthusiasts, runners, DIYers and scuba divers. Each one brings something unique and we are proud to now count them among our own.



Alex Bigazzi

Assistant Professor
CIVIL ENGINEERING
SCHOOL OF COMMUNITY & REGIONAL PLANNING

Seeking out methods of providing efficient movement of people and goods in cities.



Christine Chen

Assistant Professor
ELECTRICAL & COMPUTER ENGINEERING

Integrating emerging power grid technologies to improve system reliability, performance and economics.



Alexandra (Sasha) Fedorova

Associate Professor
ELECTRICAL & COMPUTER ENGINEERING

Making computers easier to use and reducing the energy required to operate them.



Chen Feng

Assistant Professor
SCHOOL OF ENGINEERING
(OKANAGAN CAMPUS)

Improving the reliability, efficiency and security of communication systems and networks by using advanced error-correction codes.



John Frostad

Assistant Professor
CHEMICAL & BIOLOGICAL ENGINEERING
FACULTY OF LAND & FOOD SYSTEMS

Improving our fundamental understanding of multiphase fluid systems including emulsions, foams and suspensions.



Ali Ghoreishi

Assistant Professor
MINING ENGINEERING

Developing novel solutions for maximizing energy efficiency, improving system performance, preventing waste of energy and replacing fossil fuels with renewable energies.



Zheng Liu

Associate Professor
SCHOOL OF ENGINEERING
(OKANAGAN CAMPUS)

Developing intelligent sensing systems, which can efficiently integrate different types of sensors, instruments and measurement devices.



Emily Jenkins

Assistant Professor
SCHOOL OF NURSING

Enhancing mental health through collaborative strategies that incorporate scientific evidence as well as experiential knowledge and community identified needs.



Gabriel Potvin

Instructor
CHEMICAL & BIOLOGICAL ENGINEERING

Focusing on the development and use of novel strains of microalgae, bacteria and yeast for the production of therapeutics, food additives, industrially-relevant enzymes and biofuels.



Jennifer Kryworuchko

Associate Professor
SCHOOL OF NURSING

Ensuring all people have the opportunity to influence decisions about their healthcare and receive high-quality palliative care.



Sara Stevens

Assistant Professor
SCHOOL OF ARCHITECTURE &
LANDSCAPE ARCHITECTURE

Arguing that following the money helps us to understand not just how certain signature buildings came to be, but also about how entire urban landscapes came to inhabit the forms they did.



Sanja Miskovic

Assistant Professor
MINING ENGINEERING

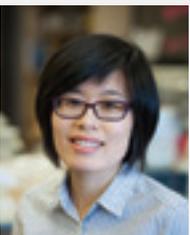
Improving the understanding, design and performance of mineral processing units and systems through the application of advanced numerical techniques.



Leili Tafaghodi

Assistant Professor
MATERIALS ENGINEERING

Optimizing the amount of energy required for bath homogenization in metallurgical operations.



Wenying Liu

Assistant Professor
MATERIALS ENGINEERING

Utilizing fundamental knowledge in fluid mechanics, transport phenomenon, reaction kinetics and bioengineering.



Steven Weijs

Assistant Professor
CIVIL ENGINEERING

Exploring new ways of tapping information from the environment, involving inexpensive sensors from consumer electronics, image-processing techniques and citizen science components.

Our People



SEVENTY YEARS OF UBC ENGINEERING: MORE PROGRAMS AND OPPORTUNITIES, BUT THE CAMARADERIE REMAINS THE SAME

From left: Stewart, Brian, Emmalee and Megan Roach.

More than 77 years separate the first Roach family UBC Engineering graduate, Stewart (BASc '43 MECH), and the last, Megan (first year engineering, Class of 2020). But other family members Brian (BASc '80 CIVL) and Emmalee (third year Computer Engineering, Class of 2017) will testify that while UBC Engineering has grown and changed considerably the important things have remained the same.

Stewart Roach's studies in engineering at UBC were interrupted during World War II: in 1942, prior to graduation, he joined the Corps of Royal Canadian Electrical and Mechanical Engineers and saw active service in Western Europe. He credits serving with other engineer officers and highly skilled technicians as being very helpful in his development as an engineer.

He went on to work for the Fisheries Board of Canada in research and development; the Fisheries Department of the Food and Agriculture Organization of the United Nations and for MARCO in Seattle, where his expertise and services were offered as a consultant to the fishing industry. Over the course of his career, Stewart filed five patents, published several articles and worked around the world. Through all of

his adventures and challenges, he still cites his 50th and 55th Engineering reunions, and the opportunity it provided for him to reconnect with his classmates and reminisce about their days together, as one of his favourite memories of UBC.

The 37 years that elapsed between Stewart's graduation and Brian's involved a marked difference to UBC Engineering: without the shadow of World War II, UBC Engineering students had time for more extracurricular activities. Brian's favourite recollections from his time on campus involved concrete toboggan races and the annual engineers' ball, as well as the experience of bonding with his classmates. Brian's career in civil engineering was a complete departure from his father's: he spent his career in construction management, with his own company and others, and now works for Defence Construction Canada.

Brian's daughter Emmalee is set to graduate from UBC in 2017, 37 years after her father. In a way similar to the 1980s, extracurriculars are an important facet of UBC life today: Emmalee joined the Thunderbots team in 2014. She's forging new ground for the family with her choice of program (Computer Engineering) and participation in Engineering Co-op. Emmalee's most recent work term was with Xperiel, a start-up in Silicon Valley. She spent a previous work term with Google, where she received a scholarship to attend the Grace Hopper Celebration of Women in Computing conference in Houston, Texas.

Megan is currently a first-year student and is undecided on her future career — but is currently leaning toward Computer Engineering, saying that learning to code has been one of the highlights of her first semester. She's looking forward to the opportunities to join a student team and take on internships or co-op placements. Both women say that the people they have met are by far the most memorable and exciting part of their UBC journey — proving that for more than 100 years, the spirit of UBC Engineering is alive and well. ■

IN MEMORIAM

PHILIP HILL, PROFESSOR EMERITUS (1932-2016)

The Faculty of Applied Science and the Department of Mechanical Engineering at UBC regrettably report that Philip Hill, professor emeritus, passed away February 17, 2016.

Hill was born in Vancouver in 1932. He moved to Kingston, Ontario, to attend Queen's University as an undergraduate and completed his doctor of science at the Massachusetts Institute of Technology (MIT). He taught at Queen's University, and returned to Vancouver in 1975 when he joined the UBC Department of Mechanical Engineering. He retired in 1997, but remained significantly engaged with the university and local industry. By funding projects, supporting research and supervising graduate students, he inspired many with his gentle challenges, deep knowledge and infectious optimism.

Hill was recognized internationally as an outstanding scholar and researcher and leaves a tremendous legacy in numerous aspects of energy and propulsion as well as many decades-long working relationships with colleagues around the world. As a young professor at MIT in the late 1950s and early 1960s, he authored what is still the international standard text on jet propulsion and jet engine theory. He also wrote the essential reference work for engineers and scientists designing steam power plants, including nuclear plants.

In his UBC research lab during the 1980s and 1990s, Hill's concern for the impact of diesel engine pollution on the environment and human health inspired him to develop the high-pressure direct injection of natural gas in diesel engines – a discovery that allows diesels to function at peak power with reduced emissions and costs. His innovation is used today in thousands of trucks, buses and cars in North America, Europe and Asia. In 1995, as a result of his research innovations, Hill co-founded Westport Innovations Inc., which specializes in alternative fuel for transportation and industrial machinery. Westport is now one of BC's largest and fastest growing tech companies.



His innovative research contributions resulted in many awards, including the Science Council of BC's Industrial Innovation Award, the Minister's Environmental Award, APEGBC's R.A. McLachlan Memorial Award, the Canadian Institute of Energy Award, and the Manning Principal Award for Innovation. He was also a Fellow of the Royal Society of Canada.

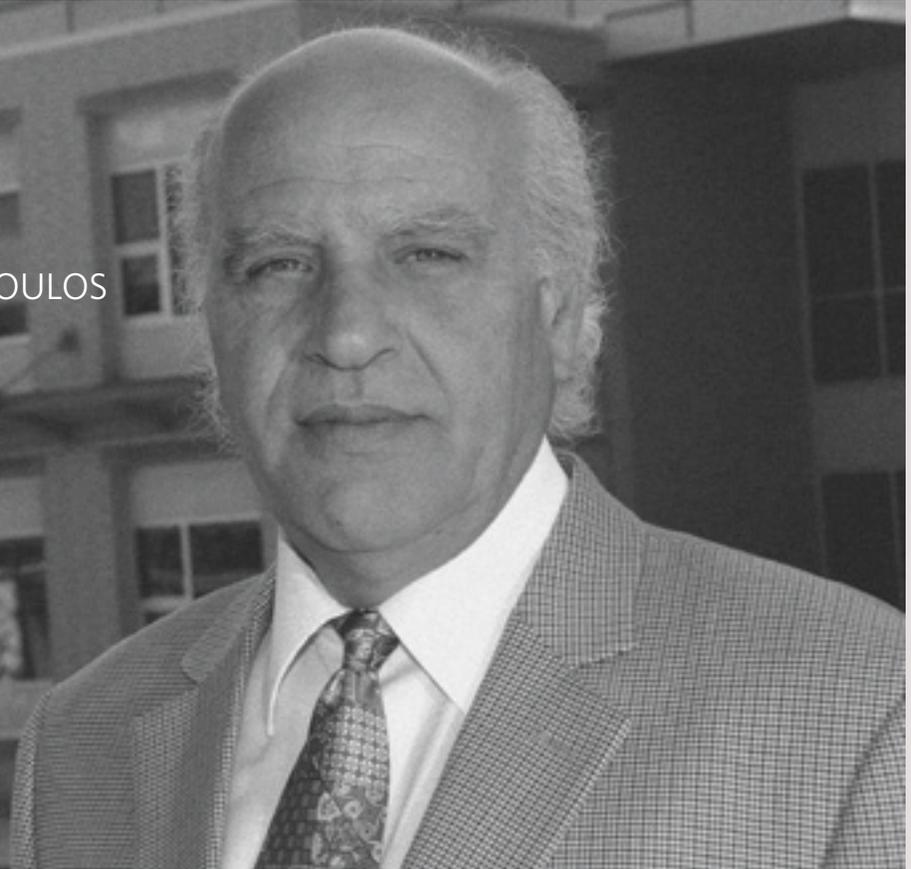
As an educator, Hill had a significant and lasting impact on UBC's engineering students. Many of his former students rank him amongst their most influential and motivational teachers and state that his thermodynamics classes, though complex, represented a highlight of their degrees. He was an outstanding role model for young professors and graduate students throughout his tenure at UBC, and his educational contributions were recognized by the UBC Killam Teaching Prize and the Walter Gage Award for Teaching Excellence.

Over the last 20 years of his life, Hill spent time sailing at Jericho Beach and spending time with his wife Marguerite, his children and grandchildren.

Hill was a respected and treasured colleague, faculty member, teacher and friend to many within the Faculty of Applied Science, and his personal warmth, integrity and contributions will be greatly missed. The Faculty and the Department of Mechanical Engineering offer their deepest sympathies to his family and friends. ■

IN MEMORIAM

PROFESSOR SPIRO YANNACOPOULOS (1956-2015)



It is with regret that we also inform you of the passing of Spiro Yannacopoulos in December 2015. Yannacopoulos joined UBC at the Okanagan campus as the inaugural director of the newly established School of Engineering and held the associate dean position from 2008 through August 2015.

Yannacopoulos was passionate about the school and single-minded in his mission to establish a research and learning environment that attracted the best faculty, staff and students. He accomplished just that. His fair-minded collegial approach had an impact and left its mark on the school. His compassion and considerate forthrightness as seen in his leadership remains an inspiration to those who knew him.

Yannacopoulos taught at both an undergraduate and graduate level in materials selection in engineering design, introductory materials science, physical metallurgy, design properties of materials and experimental techniques in materials research. He published widely, nationally and internationally, and supervised over 40 graduate students.

Yannacopoulos also served on the Okanagan Senate over four terms from 2007 to 2015. During his dedicated service to Senate, he sat on the Academic Policy Committee, the Senate Agenda Committee and the Senate Admissions & Awards Committee, which he diligently chaired for four and a half years.

To celebrate Yannacopoulos' contributions to the School of Engineering, the fourth floor engineering boardroom of the Engineering, Management and Education Building (EME) was named in his honour. An information plaque about Yannacopoulos has been mounted near the entrance to the room.

The faculty held a celebration of life ceremony on February 24 and unveiled the commemorative plaque in his honour. ■

IN MEMORIAM

PROFESSOR JOHN MEECH (1947-2015)

On February 9, 2015, UBC Mining Professor John Meech, P.Eng., passed away. A graduate of McGill University and Queen's University, he was a professor in UBC's Department of Mining Engineering (renamed the Norman B. Keevil Institute of Mining Engineering in 2006) for 26 years. During this time, he inspired many people with his passion and generosity and guided many generations of students in their pursuit of careers in mining engineering. Meech was also the director of CERM3 — the Centre for Environmental Research in Minerals, Metals and Materials at the time of his passing.

While studying at McGill University, Meech was inspired by Professor Tal Salman, one of Canada's most outstanding mineral-processing engineers, whose knowledge was described as "genius level." Meech came to regard Salman as a father figure in his professional life; it was he who inspired Meech to pursue the field of mineral processing.

After graduating from McGill, Meech spent four years in Zambia with Roan Consolidated Mines Ltd., working on research and development projects in milling and smelting. When he returned from Zambia in 1973, he joined the Mining Department at Queen's University, where he conducted research on flotation, processing copper and gold ores, iron-ore beneficiation, environmental control and simulation modeling for process control.

At UBC, Meech's teaching and professional activities included process control, unit processes and flotation, and environmental protection and expert systems. His work resulted in more than 100 technical publications. As director of CERM3, he led 30 faculty researchers, including some of Canada's top environmental scientists and engineers, to develop several new methodologies to mine more effectively and efficiently with regard to economic, technical, social and environmental concerns.



Outside of his professional life, Meech was devoted to his wife, his sons and his two golden retrievers. He inspired family, friends, colleagues and students with his passion for life, love of learning and commitment to excellence in everything that he did. He always went that extra mile to help people and will be sadly missed by everyone who was fortunate enough to spend time with him.

According to UBC Mining Professor Marcello Veiga, "John was a dedicated professor who cared deeply for his work and students... everyone could see that his heart was bigger than his dreams." ■

An award has been established in Professor Meech's memory; to contribute, visit memorial.supporting.ubc.ca/john-meech.

Alumni Updates

MATERIALS ENGINEERING 100TH CELEBRATION



On October 2, 2015, the Materials Engineering Department celebrated 100 years of accomplishments. Alumni, past and present department heads, professors, staff and guests gathered at UBC for a full day of celebration. A panel of academic leaders that included Fiona M. Doyle, R. Byron Pipes, Brian G. Thomas (PhD '85 METL), P.Geo., and David Embury presented their views on the future of materials engineering, discussing everything from upcoming technological advances to the changes that need to occur in classrooms. Traditions held strong during the foosball tournament at lunch, which was followed by a panel of recent graduates who shared advice and lessons about what it means to be a young engineer.

The celebrations concluded at the University Golf Course, where it was an honour to welcome Dr. Indira V. Samarasekera (PhD '80 METL, LLD '06), P.Eng., back to UBC as keynote speaker for the evening. She delivered a compelling speech entitled "Reading the Ripples: Detecting the Future Waves in Higher Education." Guests socialized well into the evening, capping the end of an incredible century. ■

Materials Engineering is celebrating their centennial by revitalizing student teaching laboratories. For more information, and to add your contribution, please contact Darya Sawycky at 604-827-0081 or darya.sawycky@ubc.ca.



ENGINEERING '50 REUNION

AUGUST 20, 2015

It has been 66 years since the Engineering Class of 1950 graduated from UBC. Classmates came to Sage Bistro from across the province to attend the reunion lunch with their families. Class members George Plant (BSc '50 MECH), P.Eng., and Bryan Quinlan (BSc '50 CIVL), P.Eng., were kind enough to lend some memorabilia to be displayed at the reunion, and all in attendance had a wonderful time.



ELECTRICAL ENGINEERING '85 REUNION

SEPTEMBER 12, 2015

The Electrical Engineering Class of 1985 got together to reconnect for the first time, 30 years after graduating. Twenty-five ECEs

showed up from Toronto, Oregon, Silicon Valley, the BC Interior, Vancouver Island and the Lower Mainland.

*Submitted by Tony Mittertreiner
(BSc '85 ELEC), P.Eng.*



CIVIL ENGINEERING '49 REUNION

SEPTEMBER 16, 2015

The Civil Engineering Class of 1949 continued their tradition of annual reunions as they celebrated 66 years since graduation this last fall. With family members and classmates in attendance, the group shared memories over lunch and were delighted that Dean Marc Parlange was able to join their celebration.



CIVIL ENGINEERING '85 REUNION

SEPTEMBER 18-19, 2015

Despite all the grey hair and wrinkles, the Civils showed that they still had a ways to go before they could be considered "fully mature." On the first evening, the grads met on the UBC campus and were treated to a tour of the new "Cheeze Factory" and the Engineering Design Centre, then enjoyed food and drink at Koerner's Pub. On the second evening the grads and some spouses met at the Railway Club downtown; a great time was had by all.

Submitted by Marney Olmstead (BSc '81, BSc '85 CIVL) and Avy Woo (BSc '85, MEng '99 CIVL), P.Eng.



ENGINEERING '58 REUNION

SEPTEMBER 24, 2015

Twenty-seven enthusiastic members of the UBC Engineering Class of 1958 and four spouses attended the 57th reunion lunch at the West Vancouver Yacht Club.

After the lunch, Bob Dolphin (BASc '58 CIVL), P.Eng., gave an interesting talk on his career and the disassembly of the old Port Mann Bridge over the Fraser River. Rod Keech spoke of his travels all over North America with wife Margaret in their Class B motorhome. Still working full-time in system design, Chris Huntley, (MASc '60 ENPH), P.Eng., gave a summary of the evolution of process control electronics and telemetry now being used in the power utility industry.



GEOLOGICAL ENGINEERING '84/'85/'86 REUNION

OCTOBER 2-4, 2015

The 1984/'85/'86 reunion of Geological Engineering was a huge success. Events included: an ice-breaker in the Pacific Museum of Earth, two tours (campus and the Britannia Mine Museum's water-treatment facility), and dinner at Sage Bistro, which was attended by 67 alumni and guests, including three current UBC faculty who taught us back in the 1980s (Professors Scott Dunbar [BSc '72 GEO], P.Eng., Les Smith, P.Eng., and Marc Bustin [PhD '80 GEO], P.Eng.). ■

Submitted by Susan Hollingshead (BASc '85 GEOE), P.Eng., P.Geo.



ENGINEERING PHYSICS '76 REUNION

MAY 27 & 28, 2016

The Engineering Physics Class of '76 met for their fortieth year reunion at UBC on May 27 and 28. The reunion included one graduate from '77 who had started the program with the class of '76 and the faculty advisor from their time at UBC. The highlight of the reunion was the time spent together catching up since the twentieth year reunion. The class made the excellent decision to have the next reunion at 45 years!

Submitted by Brian Davis, Eng Phys '76.



PPC 30TH ANNIVERSARY OPEN HOUSE & ALUMNI DINNER

MAY 28, 2016

The Pulp and Paper Centre's Open House gave alumni the opportunity to reconnect and network with their peers, faculty members and today's talented students, as well as giving students the opportunity to meet PPC alumni and industry professionals in a fun and informal setting. An alumni dinner was held on the evening of May 27.



SCARP 65TH ANNIVERSARY CELEBRATION

JUNE 9TH, 2016

The School of Community and Regional Planning (SCARP) invited all alumni to their 65th Anniversary Celebration. Dr. Penny Gurstein spoke and welcomed all alumni up to speak about their current careers after graduating from the school. A good time was had by all. See you at the next celebration!



MECHANICAL ENGINEERING '76 REUNION

JUNE 25, 2016

We had 23 attendees, which was nearly two thirds of our graduating class. We had fantastic tours through the Mech Eng and Clean Energy facilities. These facilities are of course all new since we attended 40 some years ago. Steve Rogak (BASc '86 MECH) and a number of his students showed us through their Mech labs and projects, which we felt was really above and beyond considering it was a Saturday afternoon. Then Arman Bonakdarpour and his students, again, in on a Saturday, toured us through their Clean Energy Research Centre facilities. We then headed to Mahoney and Sons for dinner, beer and time to catch up on who's been doing what for the last 40 years.

Submitted by John Irvine and Ric Pow, Mech Eng '76.

UPCOMING REUNIONS

SEPTEMBER 2016

- BSN '66
- NURSING PHD REUNION
- CHML '56
- CHML '66
- CHML '67
- ENG '66
- ENG '58



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