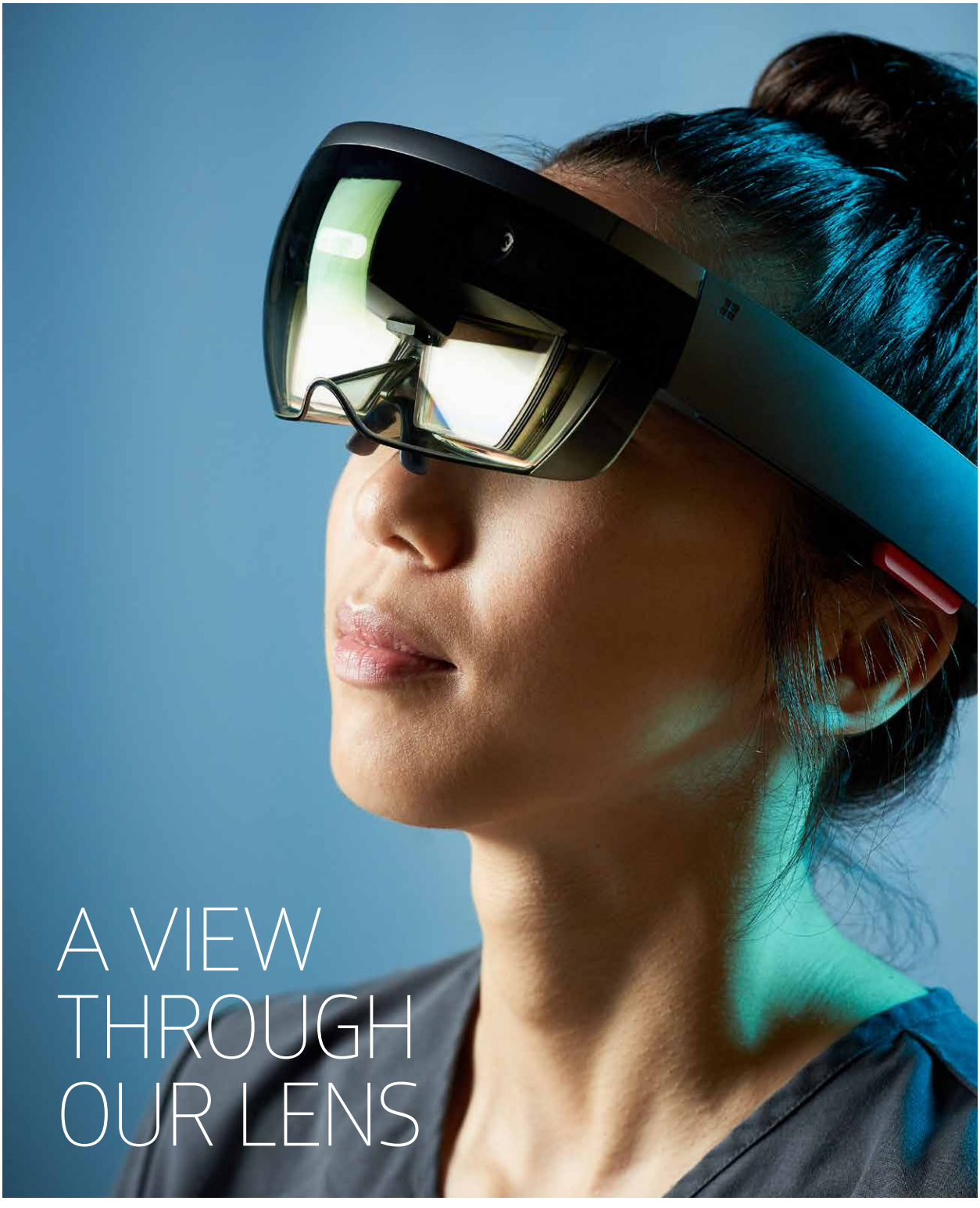
BCIT

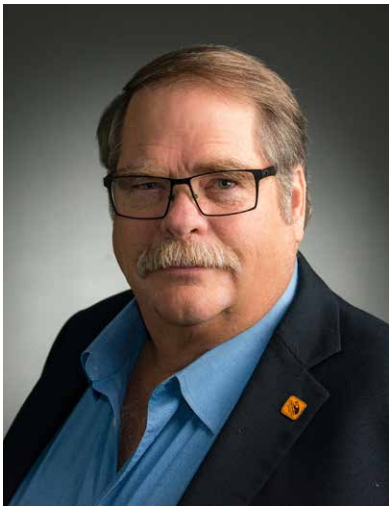


A VIEW THROUGH OUR LENS

A VIEW THROUGH OUR LENS

Cover: BCIT student wearing Microsoft Hololens Mixed Reality Glasses, which allow students to interact with high-definition holograms. This technology is used in the BCIT SIM Lab, where students are able to learn and attempt procedures—with no risk—on holograms.

Embracing a complex world



In October 2015, the British Columbia Institute of Technology celebrated its 50th anniversary. For over half a century, we have been providing our students with outstanding applied education and expanding our sphere of industry partners.

Today, the world is facing unprecedented technological and business disruption. Rapid developments in artificial intelligence, advanced robotics, and information technology have led to uncertainty for the organizations that drive our economy. Industry leaders struggle to attract and retain the talent to not only survive but thrive in this rapidly evolving world.

This is precisely why we believe the world needs more BCIT.

BCIT's unique curriculum, created in concert with industry partners, helps our students develop entrepreneurial insights and resilience, while gaining real-world skills and leadership experience. That's why our degree graduates enjoy a 96% employment rate.

We are cultivating tomorrow's leaders, who pivot from challenge to opportunity.

As you read through this review, we think you'll see why we're so proud of everything our students, alumni, faculty, and staff have accomplished and will achieve.

Sincerely,

Kathy Kinloch
President, BCIT

Jack Davidson
Chair, BCIT Board of Governors


TISH COLUMBIA INSTITUTE OF TE

Contents

Launching Our Mission for the Next 50 Years

Students, staff, faculty, board members, alumni, and industry partners mingled amongst helicopters and plane engines as BCIT brought its 50th year anniversary celebrations to a close with a gala held at the Aerospace Technology Campus. About 1,000 people attended the event, held on October 29, 2015, with proceeds benefitting the BCIT 50th Anniversary Legacy Fund for Students in Financial Need.

Hosted by CBC's Bob McDonald, the night saw six outstanding individuals recognized for distinguished achievement in their careers and contributions to their communities, including noted Canadian astronaut Julie Payette and Global Managing Director of McKinsey and Company Dominic Barton.

President Kathy Kinloch shared powerful examples of the ways in which we partner with communities and industry around the globe to develop practical solutions to the profound challenges facing our planet.

She also called for BCIT to become even more ambitious. "We already have the educational model that will be needed in the decades to come, but we will need to expand it and shape it in new ways. In the next 50 years, that will be our mission: to bring more of BCIT to the world," said Kinloch.

Kinloch also called for an increased focus on teaching entrepreneurial skills, developing flexible learning models, offering credit for non-traditional educational experiences, and supporting applied research. Moving forward, we will be exposing more BCIT students to real-world challenges and opportunities to shape solutions.

Leading the Way in Technology

When the province hosted its first-ever BC Tech Summit, BCIT was front and centre. We demonstrated new technologies and spread the word about how our programs can help jump-start a career in tech. More than 2,500 people gathered in the Vancouver Convention Centre for the sold-out event.

At the Technology Showcase, BCIT faculty member Dr. Neil Cox spoke with attendees about a prototype for a concrete block strength tester, which provides a non-destructive, low-cost way to evaluate building materials for earthquake safety. BCIT Game Design students and faculty from the School of Computing and Academic Studies set up shop in the Tech Summit's games room, where attendees had the chance to play games designed by our students.

Students and recent grads got free access to the Career Showcase, which was emceed by BCIT Broadcast and Online Journalism student and *GameSpot* writer Mat Paget.

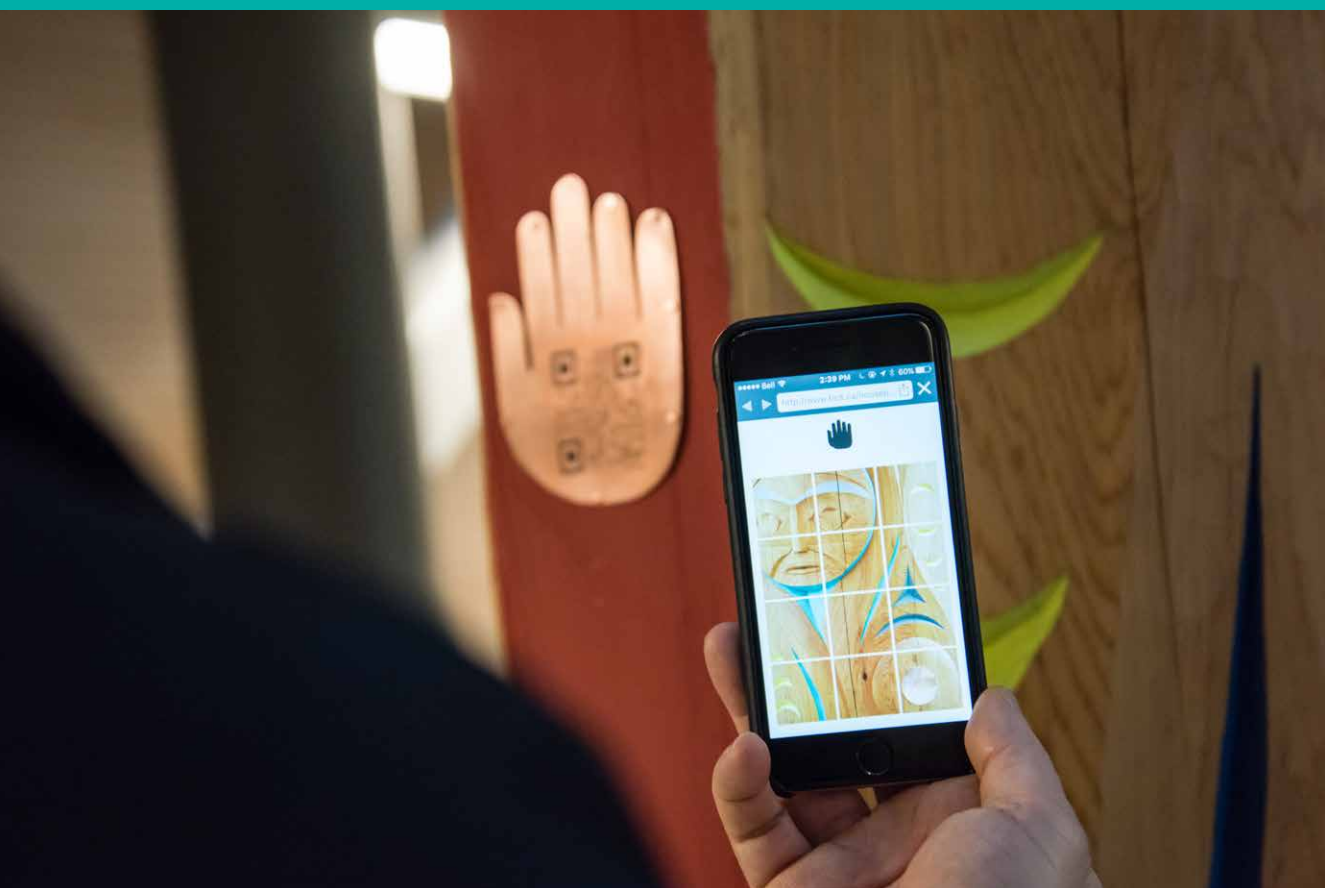
Traditional Meets Unconventional

As part of our 50th anniversary celebrations, BCIT commissioned Squamish First Nation artist Aaron Nelson-Moody/Tawx'sin Yexwulla to design and carve a house post to be installed in the lobby of the Gateway building at the Burnaby Campus.

House posts are used to support the roofs of traditional Coast Salish longhouses, including those of the local Coast Salish Skwxwú7mesh Úxwumixw (Squamish), **mi ce:p kʷətxʷiləm** (Tsleil-Waututh), and **xʷməθkʷəy̓əm** (Musqueam) peoples. They are carved to reflect character and values of the longhouse's inhabitants and the local community.

On BCIT's house post, three faces look towards the past, present, and future—the themes of our 50th anniversary celebration. The house post also includes a unique feature: a copper, carved QR code that leads users to a website delving more deeply into the story and journey of the project.

The house post was carved from a Western Red Cedar log, estimated to be over 800 years old, and was officially unveiled in a unique celebration that coincided with the BCIT Aboriginal Services' Honouring Our Graduates ceremony.



Grad Success Highlight – Adrian Duke

After hearing that his boss assumed he would be spending the rest of his life working in the oil patch, BCIT Marketing Management grad Adrian Duke reevaluated his career path. Today, he's the co-founder of Skyturtle Technologies, a waterslide design firm with clients in several countries, and the future is looking very bright. Skyturtle currently has more than $1 million in private funding and over a dozen patents pending on their innovative waterslide-related technology.

BCIT Makes It Simpler to Start Your Own Business

Coast Capital Savings partnered with BCIT to help us kick-start our next fifty-year mission: preparing students to be job-ready and instilling them with the critical attributes needed to face tomorrow's challenges.

Thanks to an investment of $376,000, BCIT has established the Coast Capital Savings Entrepreneurship Skills for Trades and Technology program.

This program gives trades and technology students a toolbox of entrepreneurial skills that will be integral to all industries over the next fifty years. From registered apprentices who want to start their own small trades business to computer science students who want to learn how to fund and market their own app, participating students will gain the skills and confidence to navigate the world of business.

SAP CEO Bill McDermott Shares Secret to Success

SAP CEO Bill McDermott spent an evening at BCIT sharing his business insights and talking about his journey from humble beginnings in Long Island to CEO of one of the world's largest software companies.

McDermott spoke freely about mistakes he's made and what he learned from them.

"Sometimes you can make a mistake," he said. "You've got to find ways to fight through the pain of difficulties and disappointments and setbacks, because today's setback might be tomorrow's winner's dream come true, and you'll never know unless you have the resilience to stay with it. That is the truth."

SAP has approximately 300,000 customers in 190 countries. Working with more than 77,000 employees, Bill has led the charge into cloud computing and advanced analytics.

As a leading global tech company with an office in Vancouver, SAP has a close relationship with BCIT. The company recently partnered with us to fund the Centre of Excellence in Analytics (CEA). CEA was created to address BC's technology skills gap and to advance the field of analytics through education, applied research, industry projects, commercialization, and industry collaboration. Students at CEA will gain the technical knowledge, workplace experience, and industry expertise needed to be successful in a changing economy.

BCIT awarded Dominic Barton, Global Managing Director of McKinsey & Company, with an Honorary Doctor of Technology. When addressing the Class of 2016, Barton stated: "you should be incredibly proud of the institution that you come from. It is world class and the results show you deliver more jobs for students than any other institution that's out there."

Dylan Smith and Bill McDermott discussing McDermott's journey to CEO of SAP.

Not Your Average Pair of Glasses

Virtual Reality headsets are no longer just for gamers. They can be powerful tools for education—and one has just arrived at BCIT. Thanks to the School of Health Sciences, BCIT now has a Microsoft HoloLens.

The HoloLens allows BCIT students to interact with high-definition holograms. While the headset will be used in various programs across the Institute, Critical Care Nursing Instructor Rob Kruger has specific ideas about how his students can benefit. For example, the device will be used in the BCIT SIM Lab, allowing students to learn and practice procedures on holograms—with no risk to patients.

As School of Energy faculty member Richard Morency says, "the potential for using the HoloLens as a training tool is endless."

The HoloLens is held at the Burnaby Campus Library and can be borrowed by both BCIT instructors and students. James Rout, Associate VP, Education Support and Innovation, is enthusiastic about what the HoloLens could make possible.

"The way we teach is changing," says Rout. "BCIT is at the forefront of a pedagogical shift. I'm excited about what technologies like the HoloLens will do for education."

Incorporating high-definition holograms into our curriculum is just one of the ways BCIT is revolutionizing how we teach, learn, and collaborate.

Rob Kruger helping a student use the HoloLens in the BCIT SIM Lab.

Building a Greener Future

Green building practices are becoming an integral part of BC's construction industry, and BCIT is leading the way with a new High Performance Building Lab (HPBL) to help train green builders and support a greener economy.

Born out of a partnership between the BCIT School of Construction and the Environment, BC Housing, and industry stakeholders, the HPBL provides a hands-on learning space for trades and technology students, offering a rare opportunity to learn about and become trained in the construction of energy-efficient buildings. The lab will also be used for applied research.

"This is very exciting," said MLA Richard Lee about the HPBL. "British Columbia continues to be a climate leader in Canada and the world. This is a concrete example of how we're leading the way to encourage and grow a highly skilled, sustainable, energy efficient residential construction sector."

New government requirements for energy-efficient housing will necessitate changes to existing building envelope design and construction techniques. Wood frame construction in the coastal region of BC is sensitive to high moisture levels, which has in past resulted in material deterioration and failure.

The HPBL will help address both these challenges. The lab includes mock-up wall panel assemblies and an airtight testing house, which will be used for several educational programs within BCIT. The lab will also be used by industry to help advance the sector.

Enriching the Student Experience

BCIT has unveiled the newly named Spartan Controls Centre for Energy Education and Research. Renaming the facility is as an expression of the longstanding relationship between BCIT and Spartan Controls and Spartan Controls' $2.5M contribution to BCIT's School of Energy.

Formerly known as the Centre for Energy Education and Research (CEER), the facility is key to energy education and applied research at BCIT. Home to the cleanest operating boiler in Western Canada, the Spartan Control's Centre for Energy Education and Research supports cross-disciplinary learning and innovative research.

Partnerships like these enrich the student experience—Spartan Controls and BCIT have worked together for more than 25 years. The company has donated new equipment and helped with technical support, curriculum development through Program Advisory Committees, and training. Spartan Controls has also funded student awards.

Awni Ayoubi, P.Eng, President and CEO of Rostrum Medical Innovations Inc. and Prof. Dr. Iwase of Dokkyo Medical University, Tochigi, Japan

Problems Solved—The Impact of Applied Research

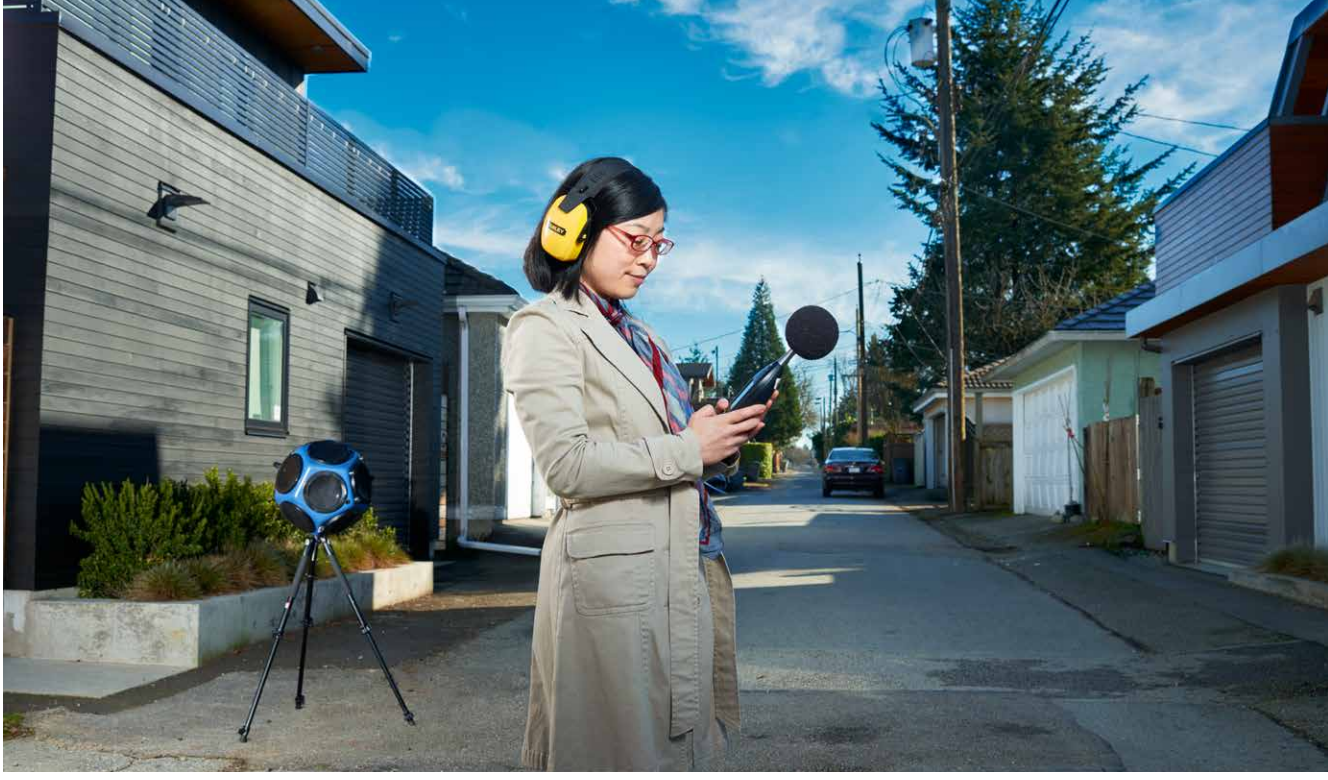
The Centre for Applied Research and Innovation at BCIT helps find innovative ways to approach difficult tasks. Intubation, for example, is an uncomfortable medical procedure in which a plastic tube is inserted into the patient's airway. Since the 17th century, medical professionals have struggled to intubate patients. Recently, Dr. Jack Pacey of Burnaby Hospital had an idea: build a device with an LED light and a video camera. If doctors can see what they're doing, patients benefit.

Dr. Pacey approached medical device developer Awni Ayoubi of Rostrum Medical Innovations Inc. to help create the GlideScope© video laryngoscope. Ayoubi then engaged MAKE+ at BCIT with project management, prototyping, industrial design and other integration tasks.

"BCIT is an effective partner to help ventures grow and expand," explains Ayoubi. With the facilities, equipment, project management experience, regulatory understanding, and technical expertise needed, BCIT was able to help build the prototype and get the product to market. The GlideScope is a revolutionary medical device that is now used around the world.

Ayoubi has moved onto a new endeavour and is once again working with the MAKE+ Applied Research group at BCIT. His latest project is a heart-lung function machine that will help monitor acute care patients on mechanical ventilators. BCIT is testing the usability of the device interface.

Nancy Paris, the Director of MAKE+, says she's excited about the project's broader implications: "The big win is this—Rostrum is helping to build the knowledge-based economy in BC. We all benefit."



Grad Success Spotlight – Rosa Lin

Rosa Lin has the distinction of being the first person to graduate from BCIT's Master of Applied Science in Building Engineering/ Building Science program. Today, she works as a research analyst for Dr. Maureen Connelly, director of the BCIT Centre for Architectural Ecology. Lin has researched noise and acoustical health in laneway housing, methods for delivering natural daylight deep into buildings' interiors, and "living architecture" such as green roofs and green walls. She says she often feels like an explorer, forging new frontiers in the industry.

Going Off-Grid

Working with industry, government, and utility partners, BCIT has built a leading-edge, smart micro grid system at our Burnaby Campus that allows us to test the renewable energy solutions that will form the future of energy. Smart micro grid systems can power remote communities using renewable energy sources, such as sun and wind, reducing reliance on fossil fuels. Our smart grid has become a model for future smart micro grids, with the power to transform communities at home, across Canada, and around the world.

Ray Kurzweil Prepares Us for the Future

Inventor, author, and futurist Ray Kurzweil has been called “the restless genius” by *The Wall Street Journal* and “the ultimate thinking machine” by *Forbes*. PBS selected him as one of the “sixteen revolutionaries who made America.”

Kurzweil, who heads up the Google team responsible for developing machine intelligence and natural language understanding, visited BCIT to speak to a crowd of nearly 1,000 students, faculty, staff, and alumni.

Kurzweil focused on the impacts that the exponential growth of technology will have on human health and culture, drawing upon examples in fields ranging from artificial intelligence to life extension and expansion. He also touched on the future of learning, predicting “a revolution in higher education.”

The combined works of three researchers helped secure BCIT top honours at the World Federation of Colleges and Polytechnics (WFCP) Awards of Excellence. The Dean of Applied Research, Dr. Kim Dotto, accepted the award on behalf of BCIT. The award recognizes colleges and polytechnics that have excelled at addressing real-world problems through applied research on an international level.

BCIT faculty member, Yvonne Jeffreys, who led the team in India.

Sharing Our Knowledge with the World

BCIT Prosthetics and Orthotics students travelled to India for their clinical placements, where they applied their knowledge and skills to help dozens of people in need. Mahdi, a 24-year-old with a spinal injury, was given long-leg braces, enabling him to walk for the first time in four years. It was a moment that Mahdi, his family, and our students will never forget.

After the devastating earthquake that hit Nepal in 2015, BCIT civil engineering faculty member Dr. Bishnu Pandey led a team of engineers and geoscientists to study the impact of the quake on infrastructure. They brought their expertise in testing brick quality and submitted recommendations to the Nepalese government.

BCIT's applied educational model and the industry expertise of our faculty prepares our graduates to be the next leaders in their fields, anywhere in the world.

Dr. Bishnu Pandey working in Nepal.

Google Lunar X Prize–Team Plan B

Sixteen teams are in the running for a cut of the $30M Google Lunar XPRIZE. The unprecedented contest challenges privately funded teams to build a robotic spacecraft, land it on the moon, move it 500 meters, and transmit high definition photos and video back to Earth. The lone Canadian team, Team Plan B, includes BCIT grads and is proudly supported by the BCIT Applied Research team.

As many as five alumni have worked on the project at a given time. The core group includes Sergei Dobrianski, the manager and spokesperson. He studied Computer Systems Technology at BCIT in 2011 and 2012. His brother, Andrei Dobrianski, earned an Electrical and Computer Engineering from BCIT in 2006. Sergei and Andrei are working to fulfill a family mission, launched by their father, Alex Dobrianski.

"Truly, I'm glad BCIT and its Applied Research department have opened their doors to support us," he says. "This project requires a high tolerance for failure, and thus far we've been bootstrapping this with minimal help. When BCIT answered the call, I was ecstatic!"

The excitement and respect is mutual. Nancy Paris, Director of MAKE+ at Applied Research, says that the team "embodies the essence of applied researchers at BCIT. They're pushing the boundaries, working hard, and reaching difficult, ambitious goals. We're thrilled to be providing support for their endeavor."

The team has worked for more than five years already. The next six months will be crucial in the contest. BCIT is excited to get a front-row seat as Plan B reaches for the moon.

"It will be very tough," admits Alex, "but there is a chance. Currently, we have greater tools than previous pioneers who have succeeded at a moon shot. It would be a shame not to at least make an attempt and carry on where they left off."

Canadian astronaut, COO of the Montreal Science Centre, and 2016 BCIT Honorary Doctorate of Technology recipient Julie Payette urged BCIT grads to contribute to society and to "… have an opinion, have a vision, and then have a mission of your own."

Alex and Sergei testing their communications system.

Our Campuses

Burnaby Campus

Downtown Campus

Aerospace Campus

Marine Campus

Annacis Island Campus

There are so many ways to connect with us at BCIT. Learn how:

Learn: There is no better place to prepare for your future than BCIT.

bcit.ca

Collaborate: Find out how our Applied Research team can help you find a solution to your unique business challenges.

bcit.ca/appliedresearch

Connect: Join our network of over 165,000 alumni and connect with professionals around the world.

bcit.ca/alumni

Contribute: Learn how you can contribute to BCIT's mission through the BCIT Foundation.

bcit.ca/foundation

BCIT™

bcit.ca

3700 Willingdon Avenue
Burnaby, BC V5G 3H2
604.434.5734

FSC www.fsc.org
RECYCLED
Paper made from recycled material
FSC® C084327