2013

THE YEAR IN REVIEW

BCIT®

Excellence in applied research and innovation

Stellar student success
Faculty and staff achievement

Alumni success and contribution

Sustainability in action

Expanding our international reach

Through their applied research initiatives, class projects, entrepreneurial pursuits, and commitment to teaching excellence, BCIT students, alumni, faculty, and staff are making substantive contributions to the economic, social, and environmental prosperity of British Columbia—and beyond.

The stories here capture just a few of the many moments of excellence that occured at BCIT in 2013. They reflect the determination of our students, the contributions of our alumni, the dedication of our faculty and staff, the innovation of our researchers, and the commitment of our donors and industry partners. They highlight only a small fraction of what is happening daily at BCIT. We hope you will celebrate these successes with us.

A new welding ventilation system, installed as part of the Factor Four sustainability project and funded by the Ministry of Advanced Education, provides a cleaner, quieter learning environment for trades students.

Factor Four aims to reduce energy and materials usage fourfold

Students in BCIT's welding shop are enjoying an improved learning environment, thanks to a $2.7 million upgrade that includes an intelligent, on-demand ventilation system. Funded by the Ministry of Advanced Education, the new system will save BCIT up to $125,000 a year in electricity, natural gas, and maintenance costs, and reduce emissions by up to 270 tonnes of CO_2 annually.

The welding ventilation improvements are just one component of the Factor Four initiative—an experiment in sustainability in and around a cluster of seven buildings at the BCIT Burnaby Campus.

The global scientific community has identified the need to reduce current energy and material usage by 75 percent, or a factor of four, in order to achieve ecological sustainability. We aim to explore whether such a reduction can be achieved without compromising service or comfort levels.

In addition to focusing on improving energy- and materials-related resource productivity, the Factor Four initiative includes several urban and ecological restoration projects created in partnership with Facilities and Campus Development and students in the Interior Design and Ecological Restoration programs. In effect, the project has become a living lab for students, who are using the Factor Four area as a place to innovate and to hone skills learned in class.

Improvements including LED lighting upgrades, container plantings, and new outdoor seating areas have created a more pedestrian-friendly environment in the Factor Four area. Vibrant signage marks the location of an underground stream—Guichon Creek—drawing attention to plans for its eventual daylighting. And thanks to input from the Centre for Architectural Ecology, indigenous plants will be included both within the streetscape and on building facades in the form of green walls.

Top, L–R: Mechanical Engineering students Aaron Hufsmith, Clayton McMunn, and Tariq Shobab with their acclaimed motorcycle trailer at the Western Engineering Competition.

Bottom: The project, supervised by faculty members Dr. Cyrus Raoufi and Kevin Peffers, was inspired by the lack of options faced by those wishing to transport large items by motorcycle.

Students design award-winning motorcycle trailer

Transporting items by motorcycle is about to get a lot easier, thanks to three creative Mechanical Engineering degree students. Aaron Hufsmith, Tariq Shobab, and Clayton McMunn designed and built a single-wheel recreational trailer for motorcycles. The “Third Wheel” features a long frame that allows the user to haul large recreational items including bikes, surfboards, and kayaks or to attach a cargo box that can accommodate up to 200 lbs.

The students’ design won the Applied Research category in the 2013 BCIT Student Innovation Challenge, an annual competition that encourages and supports BCIT students who have innovative ideas.

The trailer also won first place in the 2013 Western Engineering Competition, and accolades at the 2013 Canadian Engineering Competition. The students hope to have the “Third Wheel” on the streets by summer 2015.

BCIT in the Media

Solar-powered BCIT

BCIT's solar projects garnered significant media coverage this year, from *The Globe and Mail*'s national coverage of our smart microgrid to the *Burnaby Newsleader*'s story on the newly erected Solar Oasis: solar arrays and electric-vehicle charging stations that make up one of the biggest solar installations on a Canadian campus.

Alternative energy was a focus of research and education at BCIT well before a modest strip of solar panels was added to a south-facing wall on the Burnaby Campus in 1998. The panels, that, on a sunny day, were said to provide enough power to run at least 10 personal computers, were just the start of our foray into solar power. Since then, we have seen solar panels become a critical component of our goal to become a net-energy producer.

The Vancouver Sun featured a solar panel project at Princess Margaret Secondary in Surrey. BCIT and Princess Margaret have a partnership that allows high-school students to take part in our electrical trades apprenticeship program.

Nautical Sciences graduate is second officer on world's largest cruise ship

Nautical Sciences grad Garrett Beier was featured in *Metro* for his envy-inspiring career. Garrett is second officer with Royal Caribbean's *Oasis of the Seas*, the biggest passenger ship in the world. In the article, Garrett credits BCIT, home to one of the two largest marine campuses in Canada and the only training facility of its kind in Western Canada, with providing him the support and hands-on training he needed to launch his career.

Students light up the night

BCIT students and staff volunteered their time once again to help erect the annual St. Paul's Hospital Foundation's Lights of Hope display, *The Vancouver Sun* reported.

The Lights of Hope campaign illuminates St. Paul's Hospital with a spectacular display of holiday lights. Since 1998, donors have given millions to St. Paul's through the program. The display of lights is built entirely by volunteers using donated materials.

This is BCIT's 13th consecutive year of participation in the campaign. Electrical Foundation students dedicate over 800 hours to the cause and are responsible for tasks such as testing, set-up preparations, and wiring the display, which uses more than 700,000 lights.

Students are led by Don Zaklan, instructor of the BCIT Electricity and Industrial Electronics Foundation program at Princess Margaret Secondary.

Instructor Keith Turner and students Crystal Chau and Gavin Lim display some cherry tree cuttings.

BCIT students help to preserve some of Vancouver's rarest cherry trees

BCIT's Biotechnology program caught the attention of *The Vancouver Sun*, CBC, and others with a unique project aimed at saving threatened varieties of Vancouver's historic cherry trees. Acting on a request from the UBC Botanical Garden, Biotechnology instructor Keith Turner provided his class with material from the rare trees. After some time in a test tube, the resulting plants will be gradually acclimatized to life outdoors. Since 2011, students have successfully established in-vitro cultures of three rare cultivars, and in 2013, started working to initiate cultures of another four.

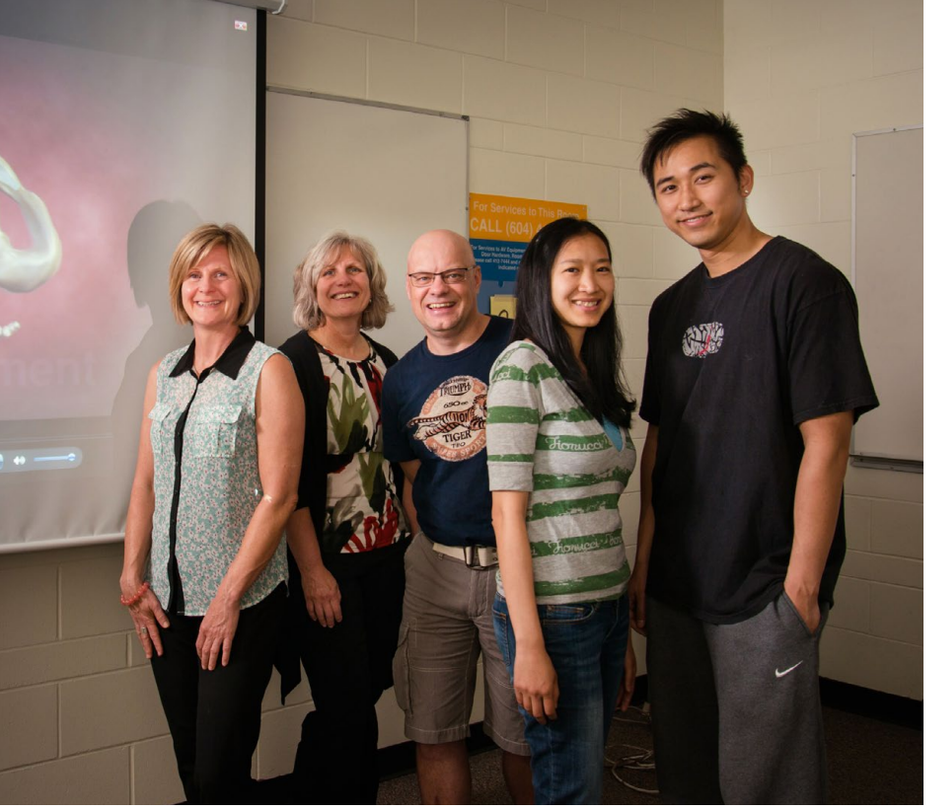
Fish, Wildlife and Recreation students restore Burrard Inlet wetlands

Students and faculty in the Ecological Restoration degree program, in combination with the BCIT Rivers Institute and several other organizations, have embarked on a large-scale, multi-year ecological restoration of the residual pocket estuaries in Burrard Inlet.

BCIT will use the restoration of the Lynn Creek estuary as a real-world lab for students, *The Vancouver Sun* reported. The goal is to recreate a naturally functioning ecosystem for cutthroat trout, steelhead, and Pacific salmon. Estuaries are among the most productive, yet most endangered, aquatic habitats in British Columbia and beyond.

Meeting the need for skilled tradespeople

With almost half a million jobs in the skilled trades needing to be filled in the next decade in BC, BCIT has become the go-to institution for news reporters covering the subject. In acknowledgement of our leadership on this issue, news outlets such as *The Vancouver Sun* have interviewed our subject-matter experts for stories on apprenticeship training and on meeting the increasing demand for skilled tradespeople in industries such as shipbuilding.



Top, L–R: Perinatal Nursing instructor Nancy Hewer, Instructional Development Consultant Michelle Kearns, Technical Illustrator/ Graphic Artist Alistair Boakes, Multimedia Developer Vienna Ly, and 3D Modeler Jason Yu with a projection of the 3D model.

Bottom: The perinatal 3D simulator allows students to interact with course material. With the click of a mouse, students can reposition mother and fetus: an invaluable tool in understanding the progress of labour.

Revolutionizing the way we learn to care for women in labour

Perinatal Nursing instructor Nancy Hewer has a new tool in her teaching arsenal: one that may have implications not just for nursing students, but also for hospitals, prenatal instructors, medical students, and pregnant women.

"The Perinatal Specialty Nursing program has a combination of distance and on-campus learners," said Nancy. "On-campus students can refer to the model pelvis we have in the lab, but distance learners were having a harder time visualizing things like the progress of the fetus through the birth canal. I thought, 'Wouldn't it be great if there were a way to show this online?'"

Thanks to the CUBE—BCIT's Simulation Development Lab—and the team at the BCIT Learning and Teaching Centre, Nancy got her wish. "Working collaboratively, we created a 3D perinatal model that has become an invaluable learning tool," said Nancy.

The 3D model helps perinatal-nurses-in-training visualize the cardinal movements (the descent and rotation of the fetus during its passage through the birth canal). The model also shows how the positioning of the mother affects the progress of labour.

"This could have a huge impact on how we care for women in labour," said Nancy. "Imagine showing women how their positioning affects fetal progress. We could say, 'This is why we want you standing up instead of lying down'."

The model was launched in spring 2013, and is currently being used by distance and on-campus students in the Perinatal Nursing program.

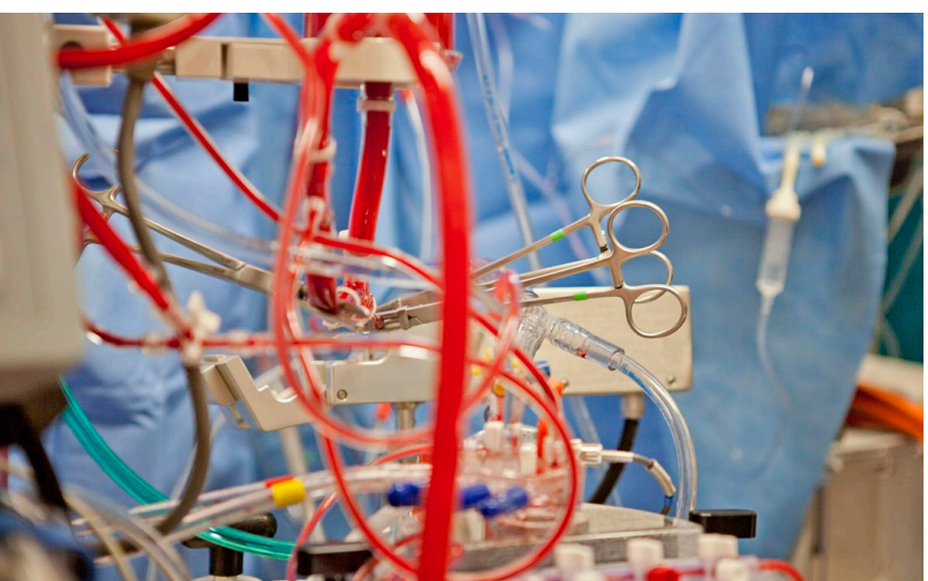
Highlights

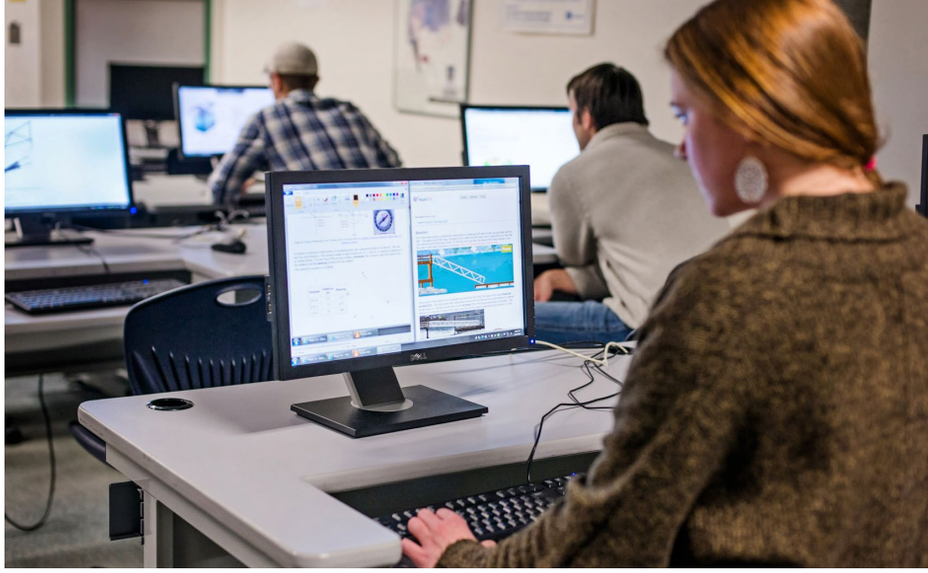
> For BCIT's leadership team, 2013 was a year of transition. In February, Don Wright stepped down after a successful five-year term as president. Chris Golding, vice president of Institute Planning, Learning and Technology Services, provided excellent interim presidential leadership for the remainder of the year. In October, **Kathy Kinloch was appointed president**, effective January 2014. Kathy is a widely recognized educational leader and most recently served as president of Vancouver Community College.

> Thanks to an agreement between BCIT and the BCIT Student Association, the BCIT Burnaby Campus is now home to a **fully licensed childcare centre**. The facility welcomes up to 25 children, with BCIT students and staff receiving preference for available spaces.

> The first graduates of the **Advanced Certificate in Cardiovascular Perfusion** program are at work across BC, operating the artificial blood pumps that keep a patient alive during open-heart surgery. Prior to course development, perfusionist training was available only outside of BC, while demand for certified perfusionists was high and growing. The result of a partnership between BCIT, the provincial government, Cardiac Services BC, and a number of BC hospitals, BCIT's Cardiovascular Perfusion program addresses a critical need in healthcare across the province.

Perfusionists play a key role in cardiac surgery, monitoring and controlling the patient's blood circulation, and overseeing the technology that becomes the patient's heart during their operation.





Building Better Math, BCIT's online database of real-world math problems, was designed to encourage and inspire high-school students to consider careers in science and technology.

> BCIT's Math Department launched **Building Better Math**, an innovative database of real-world mathematical problems. The database uses technology-specific applications to engage high-school students in the art of mathematical problem solving. Designed by professionals in their field, the questions help to clarify and cement concepts teachers have covered in class lessons. As a result, students are able to see math's critical role in specific areas of study, from science and health care to engineering and technology.

> Student members of the BCIT Marketing Association brought home a number of awards and accolades from the **American Marketing Association's International Collegiate Conference**, winning the case competition for an unprecedented two years in a row.

> Dr. Paula Brown, director of the BCIT Natural Health and Food Products Research Group, was awarded the **Canada Research Chair in Photoanalytics**. With an emphasis on natural health product sources and quality standards, Paula's research focuses on health policy, product formulation, botanical authentication, analytical method development and validation, and therapeutic monitoring for preclinical and clinical studies. Paula's award makes this the third Canada Research Chair for BCIT.

> BCIT School of Business expanded its popular **Summer Field School** to include programs in Austria and Germany. The program, designed to provide an enriching academic and cultural experience for its participants, offers students the opportunity to receive credits for academic courses while examining European business practices and exploring cultural sights.

> BCIT was selected as one of **Canada's Best Diversity Employers for 2013** by Mediacorp, the organization behind Canada's Top 100 Employers. BCIT was chosen for having a clearly defined strategy to reach diversity goals, along with review and tracking measures.

> Broadcast and Online Journalism graduate Ceilidh Millar was awarded the **Queen's Diamond Jubilee Medal** for her efforts in bullying prevention. The W. Garfield Weston Scholar volunteers as a reporter, spokesperson, and peer advocate. Upon her graduation this year, Ceilidh was hired as a BCIT ambassador.

> Students at the Skeetchestn Indian Reserve received completion certificates following a **historic 12-week BCIT House Inspection program**. The course is the first of its kind in Canada and follows negotiations with CMHC and Aboriginal Affairs and Northern Development Canada.

> Polytechnics Canada challenged student teams to produce a custom case for the Raspberry Pi, an inexpensive computer board designed to enable experimentation in programming. With guidance from the Product and Process Applied Research Team, BCIT students and student researchers took on the challenge, **earning top prize** for their innovative case at Polytechnics Canada's Annual Conference.

> Thanks to a partnership between BCIT and BMW Canada, students in the BCIT Automotive Service Technician program now have an opportunity to take part in **BMW's Apprentice Mentoring Program**, designed to recruit top-calibre apprentice technicians for BMW.

> BCIT faculty member Sheila Early was **elected president of the International Association of Forensic Nurses**, an organization with 3,100 members globally. A pioneer in the forensic nursing field, Sheila was the first forensic nurse examiner in BC, establishing the Surrey Memorial Hospital Forensic Nursing Services Unit—the first in the province.

> BCIT awarded **honorary doctorates** to Tamara Vrooman, president and chief executive officer of Vancity; Don Lindsay, chief executive officer of Teck Resources Limited; and Jill Leversage, managing director of Highland West Capital. The degrees, awarded during BCIT's 2013 convocation ceremonies, acknowledge outstanding and sustained achievement.

BCIT honours exceptional alumni

The 2013 BCIT Distinguished Alumni Awards recognized five outstanding individuals for distinguished achievement in their careers and community endeavours. This was the 11th annual gala event recognizing BCIT alumni achievement.

Craig Crawford, a graduate of the Building Technology program and vice president of Operations for BC Housing, was recognized for his work championing the creation of affordable housing for British Columbians.

Bill Dow, Nuclear Medicine alumnus and dean of the BCIT School of Health Sciences, was honoured for his professional leadership in education and within the medical community.

Gillian Findlay, host of *CBC TV News: The Fifth Estate* and a BCIT Broadcast Journalism graduate, was recognized for excellence in investigative journalism.

Robyn Worcester, Fish, Wildlife and Recreation alumna and conservation programs manager for the Stanley Park Ecology Society, was honoured for her dedication to environmental education, research, and advocacy.

Ceilidh Millar, a 2013 Broadcast Journalism graduate, received the Outstanding Student Leadership Award for her academic achievements and tireless work as a national advocate for bullying prevention.

L–R: The 2013 BCIT Distinguished Alumni Award recipients: Robyn Worcester, Ceilidh Millar, Craig Crawford, Gillian Findlay, and Bill Dow.

Alumni Achievements

> A company run by BCIT Business Operations Management alumni Kenneth Loi, Eugene Dong, and Aman Mann hit the big time after Dallas Mavericks owner **Mark Cuban decided to invest**. Their venture, Procurify, a cloud-based solution that helps companies track their spending, was initially developed as a BCIT project.

> BCIT Computer Systems Technology alumnus Markus Frind was named Ernst & Young's 2013 Pacific Region Information Technology **Entrepreneur of the Year** for his success as the founder of the online dating service Plenty of Fish.

> You'll be seeing more of Shyp, a San Francisco-based startup that aims to simplify shipping. CEO Kevin Gibbon, a Computer Systems Technology grad, recently **saw his company raise $2.1 million** in its seed round.

> Airport Operations alumna Vanessa Griffiths was **named Executive Director**, BC Aviation Council.

> Noting the proliferation of USB-enabled cyber-attacks, Technology Management graduate and Una Tech founder Faik Eljezovic developed a hardware-based technology that acts as a USB port firewall, restricting the operation of unauthorized USB devices. He was **invited to present** the technology at the Cyber Security Summit in Washington, DC.

Students shine at Skills Canada

BCIT competitors earned three medals at the 2013 Skills Canada Competition. Skills Canada pits the best of the best in an Olympic-like atmosphere of friendly competition that involves practical challenges designed to test—and prove—that competing students have the skills to excel in trades and technology occupations.

BCIT had eight competitors participating in total—all were Skills BC gold medalists and were competing against the top competitors in their category from across the country.

"The opportunity to compete in Skills Canada at both the provincial and the national level has been a great experience. It has validated the excellent skills I have learned during the course of my studies at BCIT," said Jonathan Unger, Computer Information Systems Administration student, who won bronze in the IT Network Systems Administration category.

Joinery apprentice Tyler Simpson took home silver in the cabinetry competition, while Jesse Brown, a millwright apprentice, grabbed the bronze medal in the millwright competition. Congratulations are due to all competitors.

Jesse Brown earned a bronze medal for his skills as a millwright at Skills Canada 2013.

Top: Student mentors were covered with ceremonial blankets in recognition of their support for first-year students.

Bottom: Students invited their families and friends to share in their accomplishments.

Honouring Ceremony celebrates Aboriginal achievements

"We all have a purpose in life, and mine is to open doors so others can fulfill their dreams," said Joanne Stone-Campbell, coordinator of BCIT Aboriginal Services.

So when Joanne learned that peer mentor and Bachelor of Business Administration student Yahoel Van Essen dreamed of celebrating Aboriginal student success with family, friends, and communities, she was determined to work with him to make it happen.

"We wanted to celebrate with our students and to show them how proud we are of their graduation," said Joanne. "For some, they are the first in their families to graduate."

"We knew the importance of celebrating, feasting together, and honouring our people," continued Joanne. "We wanted to show everyone that education is a tool to which we all have the right."

In June, enabled by a generous donation from Dave Tuccaro of Tuccaro Inc., and with the support of BCIT staff, Aboriginal students, and alumni, BCIT Aboriginal Services held its first-ever Aboriginal Convocation Honouring Ceremony. The event celebrated the achievements of graduates and student peer-to-peer mentors, and formally recognized the unique journey of our Aboriginal graduates.

More than 160 guests were able to experience this special event, which also honoured the late Jason Dennis, a BCIT student who passed away in March 2012.

Plans are already in the works for the second annual Aboriginal Convocation Honouring Ceremony, to be held in June 2014.

International Student Ambassador program provides perspective

Travelling to China as part of the BCIT Student Ambassador program wasn't even on Charles Gallagher's radar when he began studies here three years ago. But after his class received a notice from BCIT International describing the opportunity, the third-year Mechanical Engineering degree student jumped at the chance. He's glad he did.

"The cultural understanding that I gained during the trip was priceless," said Charles, who, along with a group of BCIT instructors and fellow students, spent a week touring cultural venues in Beijing and Shanghai, and a week at Wenzhou Vocational and Technical College, one of BCIT's international partner institutions.

"We tutored students during lectures, assisted our accompanying instructor during practical labs, and even led the class in demonstrations," said Charles, explaining his role as ambassador. "We spent a lot of time socializing and getting to know the students while answering questions about Canada. The students and faculty members from Wenzhou are some of the nicest people that I've ever met and it shines through in their society. I now feel more comfortable than ever while travelling abroad."

The Student Ambassador program was designed to enable BCIT domestic students to develop international competencies and to provide mobility opportunities and international work experience. To date, over 100 BCIT students have taken part.

Industry, alumni, and students show support for BCIT

> T.J. Moon, a student in the Electrical and Computer Engineering program (Telecommunications and Networks option), **donated $500 to support Presentation Idol**, a competition he won during his first year of studies. The annual competition is a collaboration between BCIT's Communication and Engineering departments, designed to help students polish their communication and presentation skills.

> Students in the Environmental Health and Food Technology programs will enjoy the use of a **new autoclave**, a sterilization device necessary for performing most types of microbiology laboratory work, thanks to a generous donation from Compass Group. The company's Chartwells division manages BCIT's retail food services, while their Eurest Services division manages facility and janitorial services on campus.

> Thanks to a generous gift from the estate of an anonymous BCIT graduate, students and faculty in the Medical Radiography program—and others—are now teaching and learning on newly upgraded equipment. The legacy gift has allowed the department to replace outdated equipment with a **digital, state-of-the-art X-ray unit**.

Medical Radiography instructor Vanessa Crawford *(centre)* demonstrates how to position a patient for a skull X-ray for students Soon Lau *(left)* and Melissa Steeves.

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