New approaches to education promote student entrepreneurship and engagement

E ntrepreneurs in Western Canada are converging to create a vibrant learning environment that encourages innovation and engagement. This is the story of Dr. Kim Grimes, the director of EntrepreneurSHIP, a networking centre that offers students the opportunity to learn about and participate in social change, both in Canada and abroad. Grimes’ vision is to help students develop the skills needed to work for change.

“Saskatchewan Polytechnic is a leader in applied learning, where students work in teams, engaging in real-world settings,” says Grimes. “This type of experience helps them understand how they can implement what they have learned in the classroom and contribute to the community.”

In E101, a course taught by Grimes, students are exposed to others through an “alterverse,” which is designed to break down those silos, inviting individuals from across disciplines to build teams and develop ideas instead of just brainstorming in silos. “E101 is designed to teach business savvy, including viability of a business is often ‘siloed’ across disciplines,” says Grimes. “We want to help students understand how they can implement what they have learned in the classroom and contribute to the community.”

Grimes describes the EntrepreneurSHIP HUB as an incubator for students who want to be entrepreneurs and job creators. “We’re trying to introduce students to the idea of doing business from the perspective of doing it differently,” says Grimes. “We want to help students understand how they can implement what they have learned in the classroom and contribute to the community.”

The course is open to students in any year and in any discipline, attracting everyone from food and fashion to engineering and computer science. Part of the course is being taught in the school’s EntrepreneurSHIP HUB, a networking centre that offers students the opportunity to learn about and participate in social change, both in Canada and abroad. “This type of experience helps them understand how they can implement what they have learned in the classroom and contribute to the community.”

For example, students who want to work for change are encouraged to participate in social change through week-long placements at non-profit organizations. “We’re trying to introduce students to the idea of doing business from the perspective of doing it differently,” says Grimes. “We want to help students understand how they can implement what they have learned in the classroom and contribute to the community.”

“The program is more than just another cog in the wheel,” says Grimes. “It’s about being an entrepreneur requires the skills, knowledge, and experience to be successful.”

Engaging students in and out of the classroom. From top: At the University of Alberta, students from all disciplines can immerse themselves in entrepreneurship. Associate professor David Leach at the University of Victoria is looking at ways to increase engagement through interactive media. At the University of Manitoba, the National Collaborative for Service-Learning is launching in partnership with the University of Winnipeg. SUPPLIED

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**Interdisciplinary program immerses students in global issues of water and sustainability**

**GLOBAL CITIZENSHIP AT A GLANCE**

**Major**
- Social Justice
- Anthropology
- Geography
- History

**Theme**
- Water, Sustainability and Social Justice

**Start date**
- September 2015

**Number of students**
- 40, from any major

**Required one-course sequence**
- Anthropology, Physical Geography, Knowledge and Liberal Education

**Outcomes**
- Bachelor's degree in student's program of study + Certificate of Global Citizenship

Students in the University of Lethbridge's Global Citizenship program will use a holistic, interdisciplinary approach to deepen their understanding of the interconnections between water, social justice and sustainability.

"Water is a global issue, and students within this program will emerge as global citizens," says Dr. Cooper. "This is someone who understands how local decisions have impacts for beyond the local community and who addresses problems from multiple perspectives and is able to engage with different systems."

"This program will give students the tools so that when they come across a problem they will have the curiosity and skills to look at it in new ways and come up with innovative solutions."

Dr. Craig Cooper is the University of Lethbridge's dean of arts and sciences.

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The construction industry called for more qualified leaders and NAIT answered. In January 2015, the Bachelor of Technology in Construction Management (BTCM) degree was introduced. This bachelor’s degree in construction management welcomes its first group of students at NAIT’s campus in Edmonton. This baccalaureate degree will teach you how to plan, manage and direct large construction projects from start to finish. After graduation, you will immediately add value to your company, the industry and the economy through effective project leadership.

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**A LEADING POLYTECHNIC COMMITTED TO STUDENT SUCCESS**

**PERSPECTIVES**

**INTERVIEW**

B.C.'s research universities meet the needs of today's job market

A Q&A with UBC president Anvind Gupta

"Putting Degrees to Work" report found that unemployment rates are lower for arts graduates – half the Youth unemployment rate – salaries are rising and over 90 per cent of arts graduates are working in fields that require a post-secondary education.

"What do you say to those who argue that universities aren’t doing enough to adapt their programming to a fast-changing world?" says Anvind Gupta. "Today’s students are very career. They are making smart choices about their future. And those choices are reflected in university programming. For example, B.C.’s engineering schools have seen a surge in life sciences and the biomedical sector is generating new jobs and increased demand from students. The number of life and physical sciences graduates has increased by 10 per cent in only the last five years. And the same trends are seen in other high-demand fields. So there is a direct link between university programming and the job market – a link that is shown by the choices students are making about their futures.

"Putting Degrees to Work" also looked at the impact universities have on the economy through research and innovation. How big is that impact in British Columbia?" asks Gupta. "British Columbia is emerging as a research powerhouse. In 2012 alone, B.C.’s research universities brought over $300-million to the province from federal agencies and the private sector. And the B.C. Knowledge Development Fund has attracted almost $1-billion to B.C. During this success, British Columbia’s economy has become increasingly innovative, diverse and resilient, with more than 700 spinoffs and 250 new knowledge industries that are supported by the provincial research that is happening in British Columbia.

"The construction industry called for qualified leaders and UBC responded. In January 2015, the Bachelor of Technology in Construction Management degree was introduced. This bachelor’s degree in construction management welcomes its first group of students at NAIT’s campus in Edmonton. This baccalaureate degree will teach you how to plan, manage and direct large construction projects from start to finish. After graduation, you will immediately add value to your company, the industry and the economy through effective project leadership."

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WESTERN SCHOOLS

A student at Saskatchewan Polytechnic is working with a local brewery to identify the genetic identity of the hops’ proprietary yeast cultures – just one of many partnerships between industry and the polytechnic.

POLYTECHNIC EDUCATION

Applying learning and research benefits students, industry

With a new name and a new look, Saskatchewan Polytech- nic is sending out a clear mes- sage to potential industry partners that it’s open for business. “As a polytechnic, we are underscoring the point that we are student-focused and employer-driven,” says Dr. Larry Rosia, president and CEO of Saskatchewan Polytechnic. “What makes us different is our emphasis on applied learning that meets labour market needs, thus equipping students to build rewarding careers.”

The newly branded school, previ- ously known as the Saskatchewan Institute of Applied Science and Technology, offers a full suite of programs – including apprenticeship training certificates, two-year diplomas and bachelor degrees – with the depth of programming based on workplace requirements, particularly in the areas of technology, biomedical sciences, health and business.

For Saskatchewan Polytechnic, it’s open for business. “As a polytechnic, we are underscoring the point that we are student-focused and employer-driven,” says Dr. Larry Rosia, president and CEO of Saskatchewan Polytechnic. “What makes us different is our emphasis on applied learning that meets labour market needs, thus equipping students to build rewarding careers.”

Although Saskatchewan Polytechnic works with corporations and small conducting product and process optimization research, prototyping, design and testing, proof-of-concept work, redaction-to-practice and just about anything else that has to do with technology, it is particularly well-suited to small and medium-sized businesses. “They are truly the engines of growth and the job creators in our economy,” says Ms. Holguin-Pando. “They have many good ideas but fewer resources with which to test them. We can help them offset their R&D costs and signifi- cantly lower their risk factor. That’s good for them and allows our students to be engaged in cutting-edge research with the companies of tomorrow.”

Saskatchewan Polytechnic is open for business at campuses in Moose Jaw, Prince Albert and Saskatoon, with all 1,000 students ready, willing and able to help business find solutions.

ENVIRONMENT

UNBC landscape ecology research guides Mount Polley monitoring program

When the tailings pond at the Mount Polley mine breached this summer, University of Northern British Columbia (UNBC) students and staff were among the first people on site to monitor the impact of the environmental disaster.

UNBC operates the Dr. Max Blouw Quesnel River Research Centre (QRRC), located approximately 70 kilometres south-east of Quesnel, British Columbia, Canada’s only research facility dedi- cated to landscape ecology research and teaching. Since 1996, UNBC professors Ellen Petticrew and Phil Overton have overseen landscape ecology research programs at the QRRC, looking at how activities in the watershed, such as agriculture, logging and mining, affect natural systems and water quality.

“We have been studying this area for nearly 20 years, and our understanding of the watershed and our existing baseline data are able to inform the monitor- ing and sampling programs,” says Dr. Petticrew. “For example, we know that the water level in the lake Noahs back and forth, which means that the plume of suspended tailings and eroded fine sediment moves down-lake towards the river – so you would expect – but also runs up the river towards important salmon spawning habitats.

The UNBC team is using their special- ized knowledge and expertise to sample and monitor the very fine sediment in the plume, which extends over tens of square kilo- metres deep in Quesnel Lake. According to Dr. Petticrew, the lake was “relatively pristine” prior to the disaster.

UNBC will continue to research the impact of the tailings pond failure on the watershed, along with partners from the University of British Columbia and Fisheries and Oceans Canada.

Quesnel River Research Centre manager Sam Albers samples water and sediment in Quesnel Lake. SUPPLIED

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The paleo record is important, because it tells us what was happening in terms of the earth’s natural processes over the past ten thousand years, providing a backstop from which to interpret the extreme environmental changes we are experiencing today, says Dr. Dallimore. Given that our existing records—from seismographs or data on fish populations—date back just over one thousand years, the paleo record dramatically expands our knowledge about everything from biodiversity and climate change to extreme events.

These same techniques are being used by Mr. Nicol and Dr. Dallimore in their research on clam gardens, work their investigation into First Nations’ clam gardens, some of which are almost a thousand years old, applies techniques from marine geology to environmental areas where First Nations communities modified the beach and expanded the intertidal zone to create something akin to large-scale fish farms.

“We know that First Nations communities built boulder walls at the very earliest times,” says Mr. Nicol. “These boulder walls trap sediments that both improve and expand clam habitat.”

Dr. Dallimore adds that recent research suggests these techniques to enhance more biodiversity than today’s commercial shellfish industry on the West Coast—and that they did so on a sustainable basis.

For Dr. Chris Ling, director of RRU’s School of Environment and Sustainability, the ability, the collaboration between students, faculty and community is what makes our approach to education. “Our students, says the institute’s president and CEO Glenn Feltham, who notes that NAIT has been working with several universities. In 2013, the Northern Alberta Institute of Technology (NAIT) power engineering technology program received Canadian engineering standards at every spot available—an acceptance rate of less than seven per cent. Although she has a master’s degree in science, Ms. Cross knew she wanted to work in the electrical industry for decades and is able to tailor exactly what you’ll encounter secondary trades or work experience. They choose NAIT because they know the education they receive will match up with what employers want. “We offer our students a truly hands-on and competency-based technical education,” he says. “They’re ready to find employment in their field and create an outstanding career.”

Dr. Feltham says the institute’s president and CEO Glenn Feltham, who notes that NAIT has been working with several universities. In 2013, the Northern Alberta Institute of Technology (NAIT) power engineering technology program received Canadian engineering standards at every spot available—an acceptance rate of less than seven per cent. Although she has a master’s degree in science, Ms. Cross knew she wanted to work in the electrical industry for decades and is able to tailor exactly what you’ll encounter in the field. She began researching technical programs and liked what she saw.

Mr. Cross says the education she’s getting at NAIT is completely different from what she experienced at university. It’s a skills-based educational environment where, she says, “All the instructors are people who’ve been in industry for decades and are able to tell you exactly what you’ll encounter.

Alberta and Canada desperately need graduates in the polytechnic area, and our expansion will help us meet these current and emerging needs.”

Dr. Glenn Feltham, president and CEO of Lethbridge, we foster the next generation of researchers, innovators, entrepreneurs and leaders.

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