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MESSAGE FROM THE DEAN

It is my distinct pleasure to welcome you to the inaugural Annual Report of SFU’s Faculty of Environment. We are proud that the new Faculty is the only one of its kind in Western Canada and one of a handful of environmental Faculties in Canada as a whole.

In the coming pages, you will read updates about our student achievements, as well as our ongoing community-engaged, cutting-edge research, our innovative teaching and learning initiatives, our international awards and accomplishments and much more.

Throughout, you will see that the Faculty of Environment’s passion is about a unique attitude – one that is focused on discovering innovative, restorative solutions to environmental problems, productive bridge-building and respectful collaborations - all dedicated to constructing a better, more livable and healthier world in a spirit of hope, confidence and affirmation.

It is certainly true that there is growing awareness of the environmental challenges that face our planet. Daily, we hear about the problems of climate change, water and food security and a range of challenges that we face in building a sustainable world. The extent and severity of the environmental problems that face us can leave us feeling helpless, apprehensive and pessimistic.

But we believe that we have the tools to make a genuine difference. Now is the time to take our interdisciplinary understanding and collectively implement solutions to these complex problems. The new Faculty of Environment replaces despair with determination; despondency with dedication; dejection with hope; isolation with engagement.

SFU’s Faculty of Environment supports some of the world’s leading environmental researchers and scientists, the most insightful students, and community leaders who are partners in a mission of building new success stories when it comes to the environmental challenges that we face.

We invite you to peruse some of our highlight moments from last year, and to join us in shaping a more just and sustainable world in future.

Ingrid Leman Stefanovic
Professor and Dean
Faculty of Environment
The Faculty of Environment is a hybrid Faculty housing three academic departments and several academic programs including the new Bachelor of Environment and the recently approved Master of Science in Ecological Restoration.

* Bachelor of Environment/ Master of Science in Ecological Restoration

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**NOTABLE AWARDS AND DISTINCTIONS**

- **Nicholas Blomley**, an SFU geography professor, and **Brian Owen**, SFU Library’s associate university librarian, are key players in a 7-year, $2.5-million SSHRC Partnership Grant, for a project entitled “Landscapes of Injustice”, a multi-sector interdisciplinary project that explores and chronicles the dispossession of Japanese-Canadians and shares this history with audiences across Canada and beyond.

- **Archaeology professor** Mark Collard, was elected Fellow of the Society of Antiquaries of London (FSA), a highly prestigious honour.

- **Valorie Crooks**, an associate professor in Geography and a Michael Smith Foundation for Health Research Scholar, is a health geographer who specializes in health services research. She was recently awarded a Tier 2 Canada Research Chair in Health Geographies.

- **Tom Gunton** (Principal investigator) and **Murray Rutherford** (Co-investigator) received a MITACS Accelerate Cluster project totaling $413,334, in collaboration with the Metlakatla First Nation called “Strategic Planning for Cumulative Impact Assessment in Metlakatla Territory,” with much of the funding going towards the Graduate Research Internship Program.

- **REM professor** Wolfgang Haider, received a 4 year SSHRC grant valued at $480,000 to develop coupled social–ecological models for monarch butterflies that migrate between Mexico, the US and Eastern Canada, and for the Rainbow trout recreational fishery in BC.

- **Nick Hedley**, Geography professor and Director of SFU’s Spatial Interface Research Lab, won the People’s Choice Award in the Communicating Coastal Risk and Resilience category of the Massachusetts Institute of Technology’s (MIT’s) for his CLIVE (Coastal Impact Visualization Environment) project.

- **Ross Jamieson**, associate Archaeology professor, was awarded a 3 year SSHRC grant valued at $197,000 as a co-applicant with Universidad San Francisco de Quito on the University of Victoria-led project entitled “Historical ecology of the Galapagos Islands”.

- **Archaeology professor Dana Lepofsky** and collaborators received the 2014 Theodore C. Blegen Award from the Forest History Society for the best scholarship in forest and conservation history published in a journal other than Environmental History.

- **Ken Lertzman**, REM professor, has been awarded an Honorary Membership – the top honour of the Association of B.C. Forest Professionals (ABCFP).

- **Archaeology professor George Nicholas** and his IPINCH team participated in the SFU President’s Dream Colloquium for spring 2015 to address the theme “Protection of Indigenous Cultural Heritage”. George’s SSHRC Major Research Initiative consortium (IPINCH) was also recognized nationally by the 2014 inaugural SSHRC Impact Award ($50,000).

- **Anne Salomon**, assistant professor in REM, received the International Recognition of Professional Excellence Prize (IRPE) for young scientists under the age of 40, awarded by the International Ecology Institute (ECI) in Germany.
NEW PROGRAMS IN FENV

BACHELOR OF ENVIRONMENT

The first degree introduced at SFU since 1992, the Bachelor of Environment recognizes that finding solutions to contemporary environmental challenges requires an interdisciplinary approach. The BEnv is founded on a broad vision of the environment, including the biophysical, social, and built environments. BEnv majors build toward a balanced understanding of human-nature relationships, sustainability, and decision-making.

Each BEnv major begins with a core in the social and natural sciences, and requires advanced courses in methodology, practice and communication. Students learn research methods and tools, apply them to environmental problems, and communicate their results and experience to academic and wider audiences. BEnv majors emphasize the complexity and integration of environmental systems, and culminate in a capstone course that uses all those skills in collaborative team projects.

The BEnv in Environmental Resource Management prepares students to work in BC’s vital and growing resource sector. Students learn the biophysical properties of resources such as fisheries, forests, fossil fuels and mines; they evaluate legislation, policy and regulations governing resource use and management; and they develop skills in community consultation and conflict resolution.

In the Global Environmental Systems major, students seek careers in the understanding of climate change and the mitigation of its consequences. They learn about major human-environmental systems at the global scale, including atmosphere and ocean dynamics, energy sources, technologies and transitions, and land use and the carbon cycle.

The Joint Major in Sustainable Business prepares students for careers in green entrepreneurship and innovation, supply chain management, environmental impact assessment and mitigation, and accounting for sustainability and the triple bottom line. The Joint Major is a collaboration between the Faculty of Environment and the Beedie School of Business, combining the core business curriculum in economics, finance, marketing and management with the core environmental curriculum in earth systems, ecology, and environmental ethics, stewardship and sustainability.

MASTER OF SCIENCE IN ECOLOGICAL RESTORATION

Many ecosystem services and natural habitats have been severely impacted due to the cumulative impacts of previous and ongoing anthropogenic influences, for example: urban sprawl, industrial expansion, invasive species, and contamination of soils and water resources. These factors, and the need to improve habitat for threatened and endangered species, have led to the requirement for ecosystem restoration work across the province, Canada, and internationally.

The MSc in Ecological Restoration combines the applied technical ( experiential) emphases at the British Columbia Institute of Technology ( BCIT) with the fundamental (contextual) basic science and community engagement expertise at Simon Fraser University ( SFU) to provide a unique joint-degree program that will fundamentally advance both the practice and science of ecological restoration.

The four-term program will produce graduates who will be capable of using critical thinking, adaptive management, and research within an applied problem-solving framework. This combination of skills will be applied to the identification of factors responsible for degraded ecosystems and to the restoration of ecosystems functions, while advancing the scientific knowledge of this rapidly emerging discipline.

Graduates will have the critical and theoretical skills needed to set priorities, develop a structured approach to restoring degraded ecosystems, and critically assess their success in highly complex and unpredictable environments with significant uncertainties.

Inherent in the program are the development of essential skills for project management, communication, and respectful community consultation. The program will leverage expertise at both institutions, and the setting of the region, to understand how to approach ecological restoration in diverse sociocultural and biophysical settings.

PROFESSIONAL ONLINE MASTERS PROGRAM IN HERITAGE RESOURCE MANAGEMENT

The profession of archaeology is no longer centred in universities and museums across the globe. Rather, heritage conservation programs, heritage legislation and government regulatory bodies have led to a two plus billion dollar industry for private sector archaeological consultants.

The vast majority of Archaeology undergraduate students accordingly are hired directly after degree into this industry. Recognizing the difficulties of gaining graduate training in support of their careers, the Archaeology Department successfully proposed to Graduate Studies the development of a Professional Masters Degree in Heritage Resource Management beginning September 2016.

This program targets existing archaeological practitioners with experience in the Heritage Resource Management field. It is planned as a two-year degree with on-line course work in Heritage Law and Policy, Professional Practice and Ethics, Archaeology Practice and Research Design as well as Business Management for Heritage Professionals.

Students are to additionally prepare and defend a written MA thesis meeting SFU and Department standards. The thesis is compulsory for admission to the North American Register of Professional Archaeologists and for acquisition of archaeological permits in several provincial jurisdictions in Canada.

A grant to assist course preparation in collaboration with the Centre for Online Distance Education was received from the Faculty of Graduate Studies through POST (Professional Online Scholarship and Training Initiative).
CENTRE FOR COASTAL SCIENCE AND MANAGEMENT

Entering its 15th year, the Centre fosters partnerships that seek solutions to complex environmental problems. It promotes interdisciplinary research, education and dialogue on Canada’s coastal freshwater and marine ecosystems. It also addresses issues related to global ecosystems.

Since 2011, the Centre has hosted a highly popular public lecture and discussion series, A Planet Under Pressure: Citizens and Scientists Taking Action on Global Warming and Other Threats that uses a variety of lenses to clarify and discuss the unprecedented global change that we are facing. Featuring international and local experts on a variety of topics, it has addressed population growth, paleoecology and much more.

In the spring of 2015, five talks focused on global security with the tag line, Climate Change: How Safe Are YOU? The talks explored disease, food security, environmental health, human security and values. SFU Dean of Environment, Ingrid Leman Stefanovic, tackled this last issue with a provocative presentation, Safety and Risk: Why Values Matter.

In the Fall and in response to suggestions from attendees, the discussion turns to Solutions and YOU: Combating Climate Change. Invited speakers will present complex but underappreciated issues such as how to have informed public discussion about complex scientific ideas in the face of political opposition, and the economic costs and implications of climate change and extreme weather events. Respondents will be invited to suggest concrete actions that individuals can take based on information shared through each presentation.

Presentations are recorded and posted on SFU’s YouTube channel to help the public engage the public. The 4,500 participants who attended this series, represent an eclectic mix of backgrounds including municipal, resource managers, community groups, First Nations, students and provincial and federal government employees, industry, ngo’s, safety and environmental decision making.

In restoring kelp forest ecosystem resilience.

Kelp Forest Ecosystems Project
Anne Salomon (REM) focuses on the ecological effects of predator depletion and the role of spatial planning in restoring kelp forest ecosystem resilience.

Clam Gardens Project
Dana Lepofsky (Archaeology) and Anne Salomon (REM) explore how, for thousands of years, local First Nations have cultivated the marine ecosystem to enhance the productivity of clams by building rock terraces on beaches.

Kwakshua Watershed Program
Ken Lertzman’s (REM) project seeks to understand and model the flux of terrestrial materials from land to sea – the origins, pathways, processes and food web consequences – in the context of long-term environmental change.

As a relatively recent ‘convert’ to science, I think these kinds of free public lectures are a great idea. My background is in the fine arts and as a writer of fiction, it is a shame that art and science are often presented as either/or disciplines. Making science less impenetrable for those of us who haven’t gone down traditional paths of science education can only have a positive influence. The series is the best one we have ever attended – wish more in this vein were available.

Participant Testimonial

As Kelly Brown, the director of the Heiltsuk Integrated Resource Management Department noted, “We [the Heiltsuk] take our responsibility to look after this area seriously. We want to walk beside people like those of SFU … and to work with them.” By connecting local knowledge with science, the research entails a holistic approach that is relevant, addresses community needs, and aids decision-making.

In the Pacific Water Research Centre was launched in June 2015, attracting accolades from both media and an international audience in attendance at the 6th Annual Canadian Water Summit in Vancouver.

Drawing together faculty and students from across the Faculty as well as a diverse and vibrant group of community partners, the Centre provides a base for stronger coordination and collaboration along a broad spectrum of water research.

A number of features distinguish the current activities of the Centre. First and foremost, our community engagement defines and drives our mandate. Community partners are invited to help to identify priorities and to actively contribute to the work of our research teams. Those partnerships include close collaboration with Aboriginal and First Nations who often face unique water challenges within their own communities. Our local, coastal focus helps to inform both regional, as well as national and international priorities.

As the only Faculty of Environment in Canada that houses a Department of Archaeology, our forensic research organization that is part of the Tula Foundation. It also works with coastal First Nations on resilience, sustainability and conservation.

As Kelly Brown, the director of the Heiltsuk Integrated Resource Management Department noted, “We [the Heiltsuk] take our responsibility to look after this area seriously. We want to walk beside people like those of SFU … and to work with them.” By connecting local knowledge with science, the research entails a holistic approach that is relevant, addresses community needs, and aids decision-making.

For more information, please contact:
Dr. Murray Rutherford, Director (murray.rutherford@sfu.ca), Steve Conrad, Associate Director (steve.conrad@sfu.ca), Wanda Dekleva, Director of Advancement (wdekleva@sfu.ca)
The Department of Archaeology was created in 1971 in the Faculty of Arts and Social Sciences, joining the Faculty of Environment in 2011. It is one of only a small number of independent Archaeology departments across North America with course delivery and graduate programs in both Archaeology and Biological Anthropology. The Department has a full time equivalent faculty complement of 11.5 individuals whose expertise largely is focused in three areas – archaeological and environmental science, First Nations heritage/resource management, and biological anthropology including Forensic sciences. Housed within the Department are the SFU Museum of Archaeology and Ethnology, the SFU Archaeology Press, the Human Evolutionary Studies Program, the Centre for Forensic Research (with Criminology), the joint SFU/Jilin University Centre for Bioarchaeology, and the SSHRC Major Collaborative Research Initiative on Intellectual Property Issues in Cultural Heritage (IPinCH).

The Archaeology Department offers undergraduate BA honours, major, minor and joint major (Anthropology, First Nations Studies) programs as well as a Certificate in Cultural Resource Management. In 2014/2015 there were 250 majors/minors, 60 students registered in the CRM certificate and overall course enrolments that have been steadily increasing. A traditional strength of the Department has been its PhD and MA programs with a present complement of 50 students equally split between the two.

Over the past couple of years, our students, both undergraduate and graduate, have done well. Mathew Go, as a third year undergraduate, received international press acclaim for his role in the discovery and excavation of the tomb of a Moche Princess in Peru. Marina Elliott (PhD 2014) and Mana Dembo (PhD in progress) were selected as a present complement of 50 students equally split between the two.

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Our alumni equally excelled. RCMP Sergeant Diane Cockell (PhD 2006) received a 2014 SFU Alumni Award as one of Canada’s leading “forensic archaeologists”. Current UBC faculty member Professor Michael Richards (BA, MA 1994) was elected Fellow of the Royal Society of Canada. And Dr James Delgado (FRGS) (PhD 2006), Director of the US Department of Maritime Heritage, was given the National Oceanic and Atmospheric Administration’s Bronze Medal in 2014 and made an Officer of the Order of Civil Merit, Knights Cross, by King Juan Carlos of Spain.

FACULTY RESEARCH AND AWARDS

Academic research in the department is well funded, interdisciplinary and truly international in scope. Cumulative research funds over the past five years have been in the $1.2 million range per annum with programs and collaborations in China, Japan, Indonesia, Australia, Tahiti, Tonga, Fiji, Portugal, France, Greece, Turkey, Ethiopia, South Africa, Israel, Jamaica, Ecuador, the Galapagos and the United States. The Department also maintains core research strength in the Pacific Northwest through coastal and interior plateau studies. Student mobility and participation across these programs is high.

There have been several national and international recognitions for archaeology faculty in the past year. Professor Mark Collard was elected Fellow of the Society of Antiquaries of London (FSA), a highly prestigious association established in 1707. Professor Brute Galicza delivered the 2014 keynote address to the Wildlife Conservation Film Festival held at the Steinhardt School, NYU, New York. Professor Dana Lepofsky and collaborators were given the 2014 Theodore C. Blegen Award by the Forest History Society for the best scholarship in forest and conservation history published in a journal other than Environmental History. Professor George Nicholas and his IPinCH team were given the 2014 SFU President’s Dream Colloquium for spring 2015 to address the theme “Protection of Indigenous Cultural Heritage”. They also were awarded the inaugural SSHRC Impact Award for accomplishments through their IPinCH consortium. And finally, newly appointed faculty member Assistant Professor Francesco Berra received strong praise in a letter to President Petter from the Israeli Ambassador to Canada for his work on human origins of fire use in Manot Cave, Israel.

IN THE MEDIA

Assistant Professor Rudolph Reimer (joint with First Nations Studies) was appointed co-host of “Wild Archaeology”, a 13 episode TV series produced by the Aboriginal Peoples Television Network for airing in 2016. Rudy is a member of the Squamish First Nation and, through a cross Canada survey of archaeological sites, bridges the respective roles of science and indigenous histories for interpretation of the ancient past.

The desecration and potential destruction of an ancient burial ground on Grace Islet off the coast of Salt Spring Island in BC led Professor George Nicholas and his IPinCH group to pen a “Declaration on the Safeguarding of Indigenous Ancestral Burial Grounds as Sacred Sites and Cultural Landscapes”. Signed by a range of academics and others, it received widespread attention through stories in the National Post and other media outlets. The declarations calls upon federal, provincial and local governments to act immediately in protecting First Nation ancestral burial grounds from destruction, damage, and alteration and to develop effective consultation mechanisms with First Nations communities to address these problems in the future.

And finally, the Museum of Archaeology and Ethnology spent much time in 2014 revamping its exhibits as well as hosting Tla’amin carver, Jackie Timothy, as Artist in Residence. The Museum is now planning a set of exhibits for the SFU 50th anniversary in the coming year.
The Department of Geography was a founding member of the University back in 1965 and has since become one of the strongest Geography departments in North America. We rank 7th of all Geography departments in Canada (5th in terms of citations per paper), and 2nd amongst Canadian comprehensive universities in the 2015 QS World University Rankings. We currently number 22 research faculty, amongst them Canada Research Chairs, Michael Smith Scholars, Fellows of the Canadian Geographical Society, SFU excellence in teaching awardees, and other award holders.

Geography's enduring strength relates to its nature as an interdisciplinary discipline. Geography may be defined as how place and space shapes physical and social processes, and their interactions, as they work themselves out in differentiating and integrating the earth's surface. Geography as a discipline has no monopoly on this perspective but concerns for how and why places around the globe are different and how and why places are integrated (across space) are at the heart of modern geographical thinking.

RESEARCH STRENGTHS

Our members have research strengths in geographical political economies, global environmental change, water sciences, the city, spatial health and spatial information theory. We explore topics as disparate as, economic development, medical tourism, cultural theory, augmented reality, mountain tourism, sustainable development, health services, the politics of property, cellular automata, environmental economic geography, urban planning and policy, limnology, industrial location dynamics, landscape ecology, resource depletion, health informatics, conservation, port cities, political economy, soil-plant relationships, political ecology, fluvial geomorphology, policy transfer, ecological modelling, climate change, and paleogeoclimatology.

Underscoring our national and international acclaim, this year we hosted the 9th annual Critical Geographies mini-conference, the 64th Canadian Association of Geographers annual meeting (~400 participants) and the 16th International Medical Geography symposium.

GRADUATE AND UNDERGRADUATE PROGRAMS

We have more than 50 graduate students in the MA, MSc and PhD programs who are collaborating on research projects with our award winning faculty and ~500 undergraduate student majors enrolled in BA and BSc programs. We also offer Certificates in Urban Studies and Spatial Information Science and our BSc program fulfills the curricular requirements for Professional Environmental Geoscience and Professional Agrologist accreditations. Our students actively participate in co-op and exchange programs, and, with large numbers of geography students sampling what geography has to offer (more than 80 courses spanning human geography, earth system dynamics and geographic and spatial information science), course enrolments exceed 4300 each year.

COMMUNITY ENGAGEMENT

This year Geography faculty have been engaged in several community projects. The EcoUrbanism research project is investigating what is happening to urbanism on the ground in model sustainable neighbourhoods. The Food as harm reduction (FaHR) project is investigating the health effects of food for people who use drugs.

The Landscapes of Injustice project is documenting, explaining and analyzing the process when the Canadian government uprooted over 21,000 people of Japanese ancestry from coastal British Columbia and began the forced sale of Japanese Canadian property destroying their neighbourhoods, and betraying the promise that the Canadian government would “protect and preserve” their land and possessions.

The (Re)Claiming the New Westminster Waterfront project is collecting and sharing the stories of the people who worked on the waterfront in New Westminster.

We have also made inroads into alumni engagement through invitations to special events and the inaugural publication of a Departmental newsletter.

The field is our natural laboratory and we value experiential learning in its many varied forms. Most of our Earth System Dynamics courses and several Human Geography courses feature field trips that range from local activities within lecture courses to regional and international residential field schools. Students learn about Urban Geography through an innovative U-Pass Field Trip on their own schedules. Several upper division capstone courses are designed around collaborative research projects with community participants. ~50 geography students per year participate in the Co-op program.

DEPARTMENT OF GEOGRAPHY

http://www.sfu.ca/geography

In October 2014 the Globe and Mail highlighted SFU Geography as one of the top Geography programs in the world*

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“*The most important thing I have learned in my degree is a geographic approach to problem solving. Geography reminds us that space and place are important, and an education in geography provided me with a nuanced understanding and appreciation for spatial variation and difference, as well as a critical suspicion of generic ‘one-size-fits-all’ approaches and interventions.”

Jeffrey Morgan, Faculty of Environment Dean’s Convocation Medalist 2015.
The School of Resource and Environmental Management (REM) provides an opportunity for interdisciplinary research and education on natural resource and environmental issues of local, national, and international interest. REM offers graduate programs in various areas of resource and environmental management and a selection of undergraduate courses that can complement a wide array of undergraduate degrees at SFU.

The School of Resource and Environmental Management was founded in 1979 with a mandate for interdisciplinary and applied graduate education and research. REM currently has 19 faculty members (3 of them are cross-appointed with other units within SFU), 47 Adjunct Professors, and 6 postdoctoral fellows, as well as an average enrollment of just over 100 graduate students, including about 25 PhDs. REM has built a strong international reputation as a top Canadian graduate program in resource and environmental management.

**GRADUATE PROGRAM**

The curricula of both the Master of Resource Management (MRM) and the PhD expose students to knowledge-based scientific integration among the core disciplines of resource and environmental management (i.e. ecology, other natural sciences, economics, policy and planning). The graduate students in the planning stream complete a MRM (Planning) that is certified by the Planning Institute of British Columbia. Masters students also have the opportunity to participate in Co-op to gain valuable work experience during their degree program.

**UNDERGRADUATE PROGRAM**

Beginning Fall 2015, REM has expanded into undergraduate programming with a Minor in Resource Management. This minor is open to all SFU students as it will complement a diverse array of major degrees. Solving contemporary environmental problems requires an academic background that integrates both natural and social sciences. The Minor in Resource and Environmental Management will provide SFU undergraduate students with the basic skills and understanding they need to integrate natural and social systems concepts into resource management applications.

**Canadian Study: Fewer Orangutans left? - Radio Canada International**
SFU environmental PhD candidate, Brent Loken, published study on Orangutans features the use of camera trap to estimate population numbers.

**UNESCO Scientists Call For 70% Emissions Reduction by 2050 - Hybrid Cars**
SFU environment professor Jonn Axsen says strong climate policy is the most important way to encourage widespread adoption of PEVs.

**Falling oil prices pose another delay for B.C. pipelines - The Globe and Mail**
Mark Jaccard, an energy economist at Simon Fraser University and climate activist, said companies plan such projects on a much longer timeline, even if price crashes shock the public, the media and sometimes politicians.

**What does the Pineapple Express actually mean for BC? - The Vancouver Sun**
SFU REM Professor, Dr. Karen Kohfeld, explains the weather phenomenon referred to as a Pineapple Express.

**Water resources - CBC Radio - On the Coast**
SFU Ph.D. candidate Steve Conrad talked about the SFU Pacific Water Research Centre and what the Centre is doing to help conserve water.

**Wet Boot Science - Globe and Mail**
The Libre Ero Foundation wants to give researchers like Jonathan Moore the freedom to tackle crucial conservation problems in new and novel ways.
ENVIRONMENTAL SCIENCE

The Environmental Science Program (EVSC) provides a broad multidisciplinary undergraduate education with a solid background in the natural and mathematical sciences. Our goal is to train the next generation of scientists to deal with the environmental problems that we face today and new problems as they emerge. Students are engaged in local communities, across Canada and internationally. EVSC graduates work in environmental consulting, industry, government and a wide variety of non-governmental organizations, applying what they learned at SFU to real-world environmental problem solving. Students take a common first year of courses in environmental science, geography, earth science, biology, mathematics and statistics, chemistry and physics. Then students specialize in one of four concentrations: 1) Applied Biology, 2) Environmental Earth Systems, 3) Water Science and 4) Environometrics (statistics applied to environmental problems).

2014 Accomplishment

1) The program has grown rapidly from a small undergraduate program with approximately 40 students to the second largest program in the Faculty of Environment with ~230 majors.

2) “Introduction to Environmental Science” is now being taught 5 times per year at the Burnaby, Surrey and Vancouver campuses with plans to expand the offerings to 7 times per year, exposing hundreds of undergraduate students to the science underlying environmental problems.

3) The program continues to attract some of the top undergraduate students in the province who consistently win the top entrance scholarships at SFU for their study of Environmental Sciences (see the student profiles).

The large network of environmental scientists at SFU provide research experiences for our undergraduates in their labs and in the field. Experiential learning opportunities are a core component of many of our courses via field trips, field work and hands on demonstrations. Our co-op program offers further opportunities to work for a wide range of environmental consultancies, NGOs, industry as well as municipal, federal and provincial governments. For example, Tessa Ramburn is a co-op student working on Drosophila suzukii or the Spotted Wing Drosophila, an invasive pest in North America as well as in Europe, at the Centre for Agricultural Bioscience International (CABI), in Delémont, Switzerland.

Our graduates are active in the community are passionate scientists. Tesica Truong, a second-year Environmental Science student, was named on Starfish's Canada's Top-25 Environmentalists Under 25 in both 2012 and 2013, and was nominated for the Greenest City Leadership award in 2015, and is involved in a wide range of other environmental leadership activities.

DEVELOPMENT AND SUSTAINABILITY

The Development and Sustainability Program (DEVS) is tasked with confronting what are arguably some of the most important global and local issues of our time – increasing inequality and the sustainability of our environment and our communities. We offer innovative and dynamic programs at the graduate level with a Graduate Certificate and now at the undergraduate level with the recent launch of a minor in Development and Sustainability.

The DEVS program is an exciting approach because it is founded on a collaboration of minds and disciplines. DEVS is driven by a steering committee of highly qualified and committed faculty and staff drawn from across the University. The DEVS group, a larger group of academics at SFU, further support the program through DEVs related research, teaching, graduate student supervision and as guest speakers. The design of the academic programs reflects the FENV vision that there is no single disciplinary answer to sustainability and development.

Our society needs solutions that span the sciences, the humanities, social sciences, business and the arts. Real sustainability and true development require mutual learning between the Global North and the Global South and the willingness to disband approaches that have failed and be courageous as we forge new directions. Our academic programs, by design, draw on this collaborative inter-disciplinary approach to provide an incubator for change agents. We aim to expand our students' intellectual horizons and career choices so that they can confront the development challenges that face all societies.

SUSTAINABLE COMMUNITY DEVELOPMENT

Sustainable Community Development (SCD) aims to integrate economic, social and environmental objectives in community development. SCD builds on the relationship between economic factors and other community elements such as housing, education, the natural environment, health, accessibility and the arts. SCD has emerged as a compelling alternative to conventional approaches to development, a participatory, holistic and inclusive process that leads to positive, concrete changes in communities by creating employment, reducing poverty, restoring the health of the natural environment, stabilizing local economies, and increasing community control.

The mission of the SFU Centre for Sustainable Community Development (CSCD) is to support the sustainable development of communities through education, research and community mobilization. It provides research, training and advisory services throughout BC and Canada as well as internationally.

CSCD offers an undergraduate certificate and post-baccalaureate diploma (also available through distance education), graduate support, and non-credit professional programs.

CSCD's strength in research and teaching lies in the fact that these activities are highly interconnected. Our academic and professional courses draw heavily from our research record, and in turn, our teaching informs our research. The diversity of sustainable community development approaches creates multiple avenues for research. This diversity also translates into a broad and interdisciplinary curriculum that appeals to a range of students, who are attracted to the principles of sustainable development and are searching for ways to integrate these principles into their own work. In our professional programs, our course participants demand up-to-date and relevant courses. As such, our strong record of research puts us at the forefront of sustainability education, again attracting a range of interested and highly motivated students.
PROFESSIONAL DEVELOPMENT

In addition to serving student needs through undergraduate and graduate degree options, the Faculty of Environment is building a Professional Development Unit, focused on delivering training through certificates and advanced certificate programs. The offerings are geared towards environmental professionals in need of skills upgrading as well as non-specialists who wish to be better informed about the environmental challenges that touch each and every one of us.

For further information, please contact Dr. Joanna Ashworth, Director of Professional Programs (jashwort@sfu.ca).

COMMUNITY ECONOMIC DEVELOPMENT CERTIFICATE

The Certificate Program for Community Economic Development is a part-time program that is built to give students maximum learning and hands-on experience, while still giving them the ability to balance other life obligations. It starts with a one-week in-person intensive, followed by three live, scheduled web-conference courses over the course of several months, and finishes with another one week in-person intensive.

Our goal is to empower students to begin building a sustainable, local economy today. We only teach methods that work, methods that move us to sustainability, and methods that can be implemented by neighborhoods and communities with limited resources.

Course topics include Indigenous Economics, Principles & Practice for Local Prosperity, Sustainability, Social Entrepreneurship & Enterprise, Co-operative Economics, a Social Enterprise Study Tour, Community Organizing and Cultural Diversity and Economic Decentralization (to name a few). And, for the past two years, we have awarded $25,000 to our students in our annual capstone course: Social Innovation Challenge.

For further information contact Nicole Chialand (certed@sfu.ca).

WORKING WITH UNIVERSITY OF TORONTO

A two-day workshop focused on Greenhouse Gas Emissions Accounting and Reporting will be offered in collaboration with the School of the Environment, University of Toronto, on October 1-2, 2015 in downtown Vancouver. Tools and techniques will be presented for effective greenhouse gas inventory quantification – from planning, calculating, managing and reporting GHG emissions in the context of changing regulations and climate change legislation.

For more information, please contact Laurie Wood at lauriew@sfu.ca or Leigh McGregor at leighm@sfu.ca.

FENV EVENTS

BREAKING THE ICE

On December 2nd, 2014, the Faculty hosted a series of Lightning Talks, Poster sessions and a Seasonal Gathering to highlight interdisciplinary research and "break the ice" across the individual units.

Presentations included:

- Archaeologist Dennis Sandgathe, showing how more effective cold-weather clothing could explain why modern humans outlived their Neanderthal genetic cousins;
- Geographers Kirsten Zickfeld and Geoff Mann, on Carbon Emissions, Climate Change science, adaptation and policy implications;
- REM’s Jonn Axsen assessed Canada’s readiness to adopt electric vehicles, in place of the standard internal combustion engine;
- Archaeologist Dana Lepovsky described a “clam garden” research collective combining ecological experiments, archaeological surveys and excavations with traditional, Aboriginal knowledge along the Pacific Northwest;
- Geographer Paul Kingsbury explored cultural geographies of desire and power, showing how social bonding through community events contributes to spontaneous cultural combustion;*
- REM’s Frank Gobas explored the feasibility of electric vehicles, in place of the standard internal combustion engine;
- Archaeologist Dana Lepovsky described a "clam garden" research collective combining ecological experiments, archaeological surveys and excavations with traditional, Aboriginal knowledge along the Pacific Northwest;
- Geographer Paul Kingsbury explored cultural geographies of desire and power, showing how social bonding through community events contributes to spontaneous cultural combustion;*
- REM’s Frank Gobas explored the feasibility of constructed wetlands for the treatment of contaminated water generated through the oil sands process;
- Geographer Nadine Schuurman illustrated how GIS mapping can contribute to understanding global health and providing access to meaningful health services.

Graduate student research posters from Sinead Murphy, Jonathan Cripps, Dana Ehler, Joseph Bailey, Antonia Rodrigues, Julia Jackley, Alisha Gauvreau, Dave Scott, Ross McElrory, and Laurie Darcus – ensured that exemplary student research was equally profiled on this important day.

Wrapping up with a social gathering of cocktails and appetizers helped to bring a spirit of camaraderie and companionship across the borders of individual units – a spirit that the Faculty of Environment will continue to foster through similar events in future.

THE CANADIAN WATER SUMMIT AND SFU BLUE

Beyond building internal collaborations, it is equally important to engage external partnerships in support of key environmental challenges. For this reason, we were pleased to support the 6th Annual Meeting of the Canadian Water Summit, convened in Vancouver from June 24-26, 2015, attracting industry partners, academics, students, NGOs and members of the broader community to discuss the water/energy nexus.

And on June 24th, the Faculty of Environment hosted SFU BLUE, showcasing some of our leading water researchers together with their community partners, in the beautiful Morris J. Wosk Centre for Dialogue, Asia Pacific Hall. Themes covered water-related research in areas of Ecological Conservation, Socio-economic issues, Health, Climate Change, Urban Sustainability, Governance and Technological Innovations.

 Contributors included Jonathan Moore, Liber Ero Chair in Coastal Science and Management, with community partners, Harvey James Russell Jr. and Jen Gordon from the Lax Kw’alaams Fisheries; Leah Bendell with partners from BCIT and the Tsel-Waututh Nation; Tim Takaro, Health Sciences; Mike Smith, UBC, with SFU Geographer Jeremy Venditti; John Clague (Earth Sciences); Deb Hartford (ACT SFU); Jesse Galicz, UniverCity; Murray Rutherford (REM); Mark Roseland (REM); Steve Conrad (REM); Sean Markey, Associate Dean and Associate Professor, REM, and Carmen Rosen, Artistic Director of the Still Moon Arts Society.

We were also pleased to highlight the water research underway at other leading universities, such as the University of Victoria POLIS project, PICS, UBC, BCIT and the Urban Water Research at Ryerson University.

A keynote presentation from BC’s Minister of Environment, the Honourable Mary Polak was followed by a lunchtime address by SFU President Andrew Petter, and a closing session, hosted by the Honourable Judith Guichon, Lieutenant Governor of British Columbia.

Finally, the event helped us to launch the Pacific Water Research Centre, ensuring that similar activities would be supported in future.

There are a number of special events that are either organized or supported by the Faculty of Environment. Here we report on two such events, each unique in their own way.
WESLEY REGAN
SFU GEOGRAPHY ALUMNI

Wes holds a BA in Human Geography, a certificate in Urban Studies and completed the Community Economic Development certificate, a program in which he went on to teach. While completing his bachelor’s degree, he was placed in a co-op work term with Building Opportunities with Business, a non-profit, Vancouver-based community economic development agency. This led directly to his six-year term as the Executive Director of the Hastings Crossing Business Improvement Association, Canada’s first Social Innovation Business Improvement Area. Here Wes worked with a range of non-profit, government and private sector partners on projects relating to community economic development, social innovation and social inclusion, sustainability and community engagement in Vancouver’s DTES. Just recently, he made a career change and is currently running to represent the communities of Vancouver East in Parliament.

Passionate about his city and his neighbourhood, Wes serves on numerous volunteer boards including LOCOC BC, CRED BC (Conversations for Responsible Economic Development) and is also a member of the BC Partners for Social Impact, a Provincial Think Tank working to support social innovation and social enterprise throughout the Province. He is also passionate about food systems and urban sustainability and is a founding board member of the Vancouver Urban Farming Society and co-founder of Urban Stream, a food systems technology start-up with operations in BC and Alberta.

TESICCA TRUONG
ENVIRONMENT UNDERGRADUATE STUDENT

Tesicca is a fourth-year Environmental Science Honours student, minoring in Environmental Education. Her passions lie at the intersection of sustainability, youth empowerment and community building. She was named on Starfish’s Canada’s Top-25 Environmentalists Under 25 in both 2013 and 2014, and was awarded the 2015 Greenest City Leadership Award with the City of Vancouver.

During her first year at SFU, Tesicca became the youngest member on the Mayor of City of Vancouver’s Engaged City Task Force. She also chaired the Board of Sustainable SFU and the Environmental Representative for SFU Senate and the Simon Fraser Student Society.

Academically, she participated in ‘Change Lab’—a course that encourages students to develop sustainability projects and co-founded Play without Plastics, an intergenerational environmental education program.

Currently, she works at both SFU Public Square organizing We the City 2015 Community Summit and within the Faculty of Environment coordinating the first Enviro Frosh. Feel free to connect with her at ttruong@sfu.ca.
We would like to take this opportunity to thank the many alumni, faculty, staff, individuals and organizations who have made gifts to the Faculty of Environment over the past year. Their contributions are providing much needed support for research, students and community engagement activities.

Canadian Pacific, Helicat Canada, Avalanche Canada Foundation, Canadian Avalanche Association, and Avalanche Canada for their support of Dr. Pascal Haegeli, who will hold an academic appointment at the School of Resource and Environmental Management and a Research Chair in Avalanche Risk Management (recently approved by SFU Senate and pending Board of Governors’ approval in late September, 2015). This research chair will combine the traditional, physically oriented studies with human dimensions research on risk perception, decision-making, risk communication and health behavior. This innovative research perspective will create the interdisciplinary foundation necessary for the development of more effective prevention initiatives.

The Bertha and Louis Weinstein Research Fund for their support of Dr. Francesco Berna’s research, which examines prehistoric settlements by searching for traces of the fires they set. This gift is helping us understand the occupation pattern and the use of fire in the Upper Palaeolithic Site of Manot Cave in Western Galilee.

David and Alix Patterson for their ongoing support for the Alix Vikki Patterson Endowment Fund. Passionate about creating and implementing the dynamics for a world that offers quality of life for all, Alix established a successful green company that sold an extensive line of products that were sustainable, environmentally friendly and ethically made. This award provides much needed support to Faculty of Environment students hoping to transform the world in their own way.

The Community Evolution Foundation for their support of community economic development initiatives in Bolivia. This important project will lead to greater community self-reliance, helping residents manage economic activities not only to create wealth and income, but also to support social and environmental well-being.

Tony Allard for his contribution to two important initiatives in the Centre for Coastal Science and Management. Support for salmon research in Rivers Inlet is helping SFU researchers address some of the pressing questions regarding the decline of the Central Coast sockeye salmon populations, including the possibility of pathogens that can cause substantial mortality in salmon farms transferring from farmed Atlantic salmon to nearby wild Pacific salmon and vice versa – and then spreading to more remote populations. A gift to Take A Stand is bringing filmmakers, SFU scientists, high school educators and graduate students together to help educate BC youth on protecting our coastlines and environment.

DONOR RECOGNITION

The Bertha and Louis Weinstein Research Fund

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IN MEMORIAM

Tragically, not all news this year is positive. It is with the deepest sadness that we report on the August 2015 passing of our wonderful friend and colleague, Dr. Wolfgang Haider, Director of the School of Resource and Environmental Management.

It is hard to imagine the Faculty of Environment without Wolfgang’s presence. He was a staunch believer and defender of REM’s extraordinary legacy and international reputation, just as he was also a gentle soul with a kind heart and the warmest smile.

Despite my relatively recent arrival to SFU, we had become friends rather than simply colleagues over this past year. Those who knew Wolfgang will understand how it was impossible to spend time with him - discussing REM strategic plans, faculty renewal, tourism research and always, his wife and children – without becoming his friend.

Perhaps it is all the more genuine a testimonial to his impact to recognize that he will be sorely missed not only by those who were his friends for years but also, those whose lives were made richer knowing him for a shorter time.

Certainly, we will each have our stories and our irrepressible memories of Wolfgang - an extraordinary colleague, mentor, intellectual leader and friend.

In that important sense of how he touched us all, we will each keep him close. If you would like to support a scholarship fund for REM students in Dr. Haider’s memory please contact Wanda Dekleva (wdekleva@sfu.ca) at 778 782-8859.

Ingrid Leman Stefanovic,
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