

Message from the Directors

It is remarkable how quickly this year passed. With the support and encouragement of enthusiastic faculty and students, we chose to use our time as Acting Co-Directors of the Environment & Sustainability (E&S) program to be “innovators”, not “caretakers”. Our major goal was to develop a rewarding research and teaching program to attract faculty, students and staff from across campus as well as an exceptional Director to lead us from Program, to Centre, and ultimately to a School of Environment and Sustainability. We emphasized the importance of relationship building. We set ambitious targets, and we were able to reach (most of) them!

Administrative highlights include the creation of an E&S program unique to Canada with three participating Faculties – Science, Social Science and Engineering – and two affiliate professional schools – the Richard Ivey School of Business and the Schulich School of Medicine & Dentistry. On the basis of this partnership, a Program Advisory Committee was formed comprising two faculty representatives from each of the participating Faculties, Ivey and Schulich. This group was essential in reviewing, commenting and approving the many program changes that were introduced this past year. Our E&S staff grew from one person – our Program Administrator Holly Sanderson – to now include a full-time co-op placement manager and a part-time communications specialist and special events coordinator. As our E&S program expanded, we outgrew the cozy confines of the Collip Building, and we now anxiously anticipate our new home in the Natural Sciences Centre.

Academic highlights include developing policies and practices. We reformed the graduate curriculum in several ways. We created a “Foundations of Sustainability” course where students from both the MES (course-based) and collaborative (thesis-based) graduate programs came together to learn sustainability through different disciplinary lenses. We also integrated professional workshops and inter-active seminars with core courses for MES students. We created paid co-operative placements for our MES students, with some students competing (and succeeding) with co-ops open to students across the country! We applied for internships for some of our collaborative students who spent a semester abroad to learn about sustainability in developing countries. To create a sense of community, we established “E&S Reads”, which allowed readers to discuss a sustainability-themed book with its author. We created a seminar series that brought in “big thinkers” in sus-

tainability, with support from Science, Social Science, Engineering, Ivey and Schulich. We also revamped this E&S Newsletter with staff support. In many of these initiatives, we collaborated with other individuals and groups on campus to help finance, organize and/or advertise events. Some of these people include Professor Charles Trick (jointly appointed in Science and Schulich and the Beryl Ivey Chair for Ecosystem Health) and Professor Tima Bansal (appointed in Ivey and Director of the Centre for Building Sustainability Value). We also invited the public to many of our events to further linkages to our community. The outstanding participation in these events illustrates the breadth and depth of interest in environment and sustainability at Western and suggests we should be optimistic about our future.

Research highlights include faculty coming together to design models for community sustainability. As E&S researchers, we sought to solve problems and not just define them. For example, faculty and students from several faculties worked in a community-based participatory research group to improve the sustainability forecast of the Lake Naivasha basin in Kenya. The group included doctors, lawyers, scientists, engineers, and community representatives, as well as colleagues from Egerton University in Kenya. With funding from International Development Research Centre (IDRC) we look forward to building a significant research and teaching program at Lake Naivasha over the next five years.

We believe that E&S has and will continue to play a critical role in profiling sustainability, both locally and globally. We believe an interdisciplinary approach works best when each discipline has a clear and strong voice around the table. Together, we can build upon the strengths of individual disciplines and create synergies that promote the development of innovating ideas among great and dedicated thinkers. The limitations imposed by disciplinary thinking evaporate! We encourage each of you to continue your involvement in E&S events and to share this newsletter with others who may be interested in joining the E&S community (contact hsanders@uwo.ca to be added to the E&S community).

Thank you for the privilege of leading the E&S program this past year.

Sincerely,
Irena Creed (icreed@uwo.ca) and
Dan Shrubsole (dashrubs@uwo.ca)

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In Memoriam



Dr. M. Anwar Maun (Jan 1, 1935-Sept 24, 2007)

Photo courtesy of Irene Krajnyk

Family, friends, colleagues and students gathered on Earth Day, April 22, 2009, for a memorial lecture to pay tribute to Dr. M. Anwar Maun, Professor Emeritus in the Department of Biology, renowned Ecologist and founder of the Environmental Science Graduate Program (MSc and PhD) at Western. The lecture was delivered by a former colleague of Dr. Maun, **Michael Barbour**, a professor in the Environmental Horticulture Department at the University of California Davis.

Dr. Maun was awarded a Certificate of Recognition by the Ontario Government for his work in the development of resource management programs in

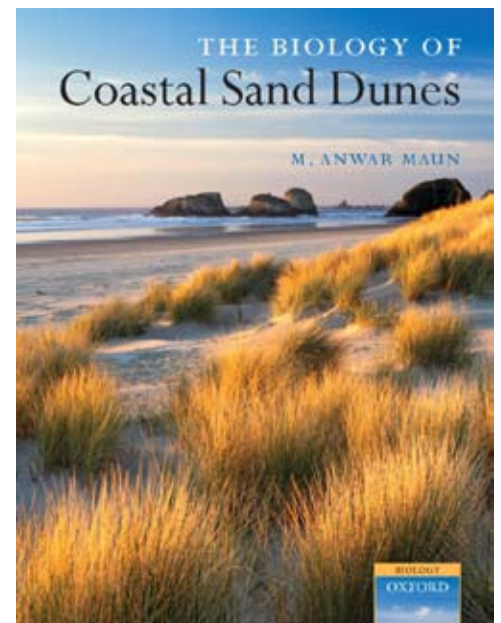
Pinery and Ipperwash Provincial Parks. His work on coastal sand dunes earned him the George Lawson Medal by the Canadian Botanical Association in 1997. In 2003, Anwar was awarded Recognition of 25 years of Excellence in Research by the president of the Natural Sciences and Engineering Research Council of Canada.

Dr. Maun was the founder of the interdisciplinary Environmental Science Graduate Program (MSc and PhD) at Western, which brought together faculty from five faculties – Science, Social Science, Engineering, Law and Medicine. He was the Director for seven years until his retirement in 2000.

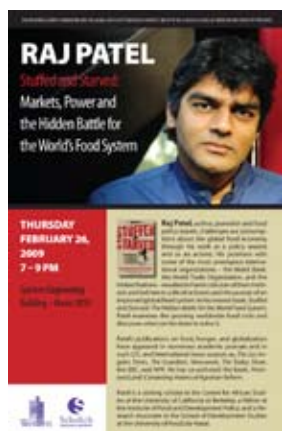


Dr. Michael Barbour of UC Davis gave the Maun Memorial Lecture.

A tree was planted in living memory of Dr. Maun on the south side of the North Campus Building earlier in the day. Dr. Maun's final book, *The Biology of Coastal Sand Dunes*, was recently published by Oxford University Press.



Special Event Lecture Series



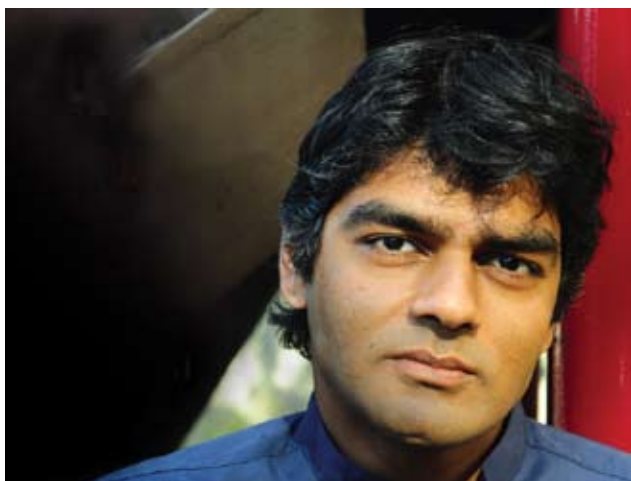
Through the collaborative efforts and resources of groups, departments and faculties at Western, the Environment and Sustainability program was able to present a number of exceptional speakers as part of the Special Events Lecture Series. The Global and Ecosystem Health Group, from the Schulich School of Medicine and Dentistry, played a key role in organizing distinguished speakers, and funding came from The McConnell Family Foundation, the Schulich School of Medicine and Dentistry, the Department of Geography, the Department of Biology, the Richard Ivey School of Business, and the Environment and Sustainability program. The Special Events Lecture Series started in January and finished in April.

Gerald Butts – Walking the Talk

Gerald Butts informed students that political involvement and taking part in government is an effective way to bring about change. Above all, he said, avoid apathy, and understand that efforts put towards environmental causes make a difference. As President and CEO of World Wildlife Federation – Canada, Butt talked about working in a not-for-profit organization and asked students to consider the nature of career rewards. For Butts, monetary considerations were low on the list. His reward, he said, was the legacy of wildlife preservation and the conservation and preservation of the natural world that he would pass on to future generations.



Raj Patel – Stuffed and Starved



Food activist and author, Raj Patel, delivered an engaging and animated talk based on his research and book, *Stuffed and Starved: Managing Markets, Power and the Hidden Battle for the World's Food System*. Patel shared his views from his work in the World Bank, the World Trade Organization, and the United Nations, and spoke critically about current trade practices and “so-called” fair trade, which he said, was anything but fair. Patel advocates for reform in the food distribution system, among other things, and insists there’s not much time to waste. Based on recent studies, the current industrial agriculture system won’t work by 2050, when there will be 9 billion people to feed, due to insufficient energy and water. Factory farming and food distribution will have to come under considerable reform in order to achieve sustainability. Patel talked about the obesity/famine crisis, a dichotomy that sees people die of hunger while others die from complications due to obesity.

Dr. Samantha Nutt – Starting an AGO, Staying Motivated and the Power of Media

Dr. Samantha Nutt, Founder and Executive Director of War Child Canada, spoke of her experiences as a medical doctor with more than a decade working in war zones. Her commitments to peace, human rights and social justice led her to her work helping war-affected women and children. She has helped children in some of the world's most violent flashpoints, working with War Child Canada, the United Nations and non-governmental organizations (NGOs) in Iraq, Afghanistan, The Democratic Republic of Congo, Liberia, Sierra Leone, Somalia, Iraq. She spearheaded efforts to provide direct humanitarian support and long-term programming to war-affected children and their families, and to promote greater awareness concerning the rights of children everywhere. Dr. Nutt told several stories about her direct experiences in war zones and how she came to be deeply affected and personally motivated to provide help to children, the innocent victims of war.



Edward Burtynsky – In the Wake of Progress



A large interdisciplinary audience came to hear famous Canadian photographer, Edward Burtynsky. Burtynsky's large-scale photographs of 'manufactured landscapes' – quarries, recycling yards, factories, mines, dams, shipyards, coal heaps, give graphic evidence of civilization's materials and debris. The photographs, stunning and beautiful, depict enormous environmental devastation, thus raising questions about ethics and aesthetics without offering easy answers. The China pictures capture the effect of that country's industrial revolution with pictures of the Three Gorges Dam, a factory that extends over one kilometre, and Shanghai's urban renewal, and reveal the astonishing magnitude of industry and geographical changes. Burtynsky searches for images on a grand scale that describe our changing and complex relationship to nature.

William Rees – Global Change and the End of Growth

Dr. William Rees from the School of Community and Regional Planning, UBC, spoke to a large audience in early April on Global Change and the End of Growth. Cited as one of British Columbia's top "public intellectuals" by The Vancouver Sun, Dr Rees's teaching and research examine public policy and the planning implications of global environmental trends and the necessary ecological conditions for sustainable socioeconomic development. Much of this work is in the realm of human ecology and ecological economics where Prof Rees is best known as the originator of 'ecological footprint analysis.' Dr. Rees argues that growth continues to be the primary and the over-riding public policy objective of most national governments and international development agencies. Increasing GDP per capita is deemed necessary to eliminate poverty and enhance general well-being. However, in high-income countries, rising GDP per capita no longer contributes to objective well-being and is only tenuously (sometimes negatively) associated with felt well-being. Paradoxically, most income gains are wasted on the already wealthy, while the world's poor, who would actually benefit, receive almost nothing. Meanwhile, climate change science, ecological footprint analysis, etc., suggest that the human enterprise has already overshoot the long-term bio-capacity of Earth by 25-40%. The global economy is growing, in part, by depleting essential 'natural capital.' What intelligent species would continue to pursue policies that consistently fail to meet their stated objectives while simultaneously undermining the biophysical basis of life? Whatever else it may imply, Dr. Rees claims that achieving sustainability requires the end of material growth in the developed world.



Features

Through a Complex Lens- Foundations of Sustainability



The Environment and Sustainability graduate course on Foundations of Sustainability, which brings together MES and collaborative students, examined sustainability issues through an interdisciplinary lens. The course instructors, Professors **Charlie Trick** (Biology & Schulich School of Medicine and Dentistry), and **Tima Bansal** (Richard Ivey School of Business), used a combination of guest speakers, films, articles, and books to engage graduate students in lively discussions, “that ranged from the history of our relationship to the environment, to the contemporary dialogue occurring within and between disciplines,

and the struggles, disagreements and increasingly, the consensus concerning the problems and their solutions.” Guest speakers came from many departments throughout the university, as well as from outside the Western community, to deliver a host of interdisciplinary topics: **Charles Weijer**, Bioethics; **Sara Seck**, International Law, Human Rights and Environment; **Robert Lannigan**, System Resilience and Sustainability; **Brian Luckman**, Climate Change Through the Ages; **Chantelle Richmond**, Sustainability in the Aboriginal Context; **Karen Pennesi**, Human Relations with the Environment; **Isaac Luginaah**, Health Geography;

Alan MacEachern, Environmental History; **Oana Branzei**, Sustainability in Emerging Markets; **Mark Achbar** and **Siobhan Flanagan**, Sustainability and Film, The Corporation; and **Peter Duinker**, Scenario Analysis as a Tool to Achieve Sustainability.

At the end of the course, which ran from September to mid-February, students were asked to write their “reflections”, an analytical compilation of observations, arguments, impressions and questions based on the course seminars and associated readings.

For many students, the study of the Foundations of Sustainability began with the question about the meaning of the word itself. **Stephen Marklevitz** wrote, “Sustainability is an all encompassing theory – it is not ecology, business, human rights, or human health, it is the combination of all of these factors.” The notion of complexity held for **Anika Steblin**’s consideration of the term. “After spending numerous hours discussing it, I am no closer to a firm definition, but the idea is abundantly obvious. Sustainability implies not utilizing resources and adversely impacting the environment for future generations.” **Carolyn Tunks** thought that, “Sustainability like many words, is misused, misunderstood and ambiguous. The word itself needs a “make-over” and its definition requires a new meaning, one that is precise, comprehensive, well represented and holistic.”

Jennifer Locke cites a definition which, she states, appears simple, but which doesn’t completely reflect the

nature of the issue. “Sustainability, as defined by the Brundtland report, means to meet one’s needs, social, environmental, and economic, without compromising the ability of future generations to meet their own needs. This broad definition, at first glimpse, seems simple enough to implement, but after an entire semester and a half of the course, I am recognizing that it is not ... issues related to sustainability, whether they be social, environmental, or economic, are infinitely more complex than I first realized.”

Exposure to innovative scenario analysis and sustainability frameworks in the course were key for providing **Lauren Bates** with a useful prototype in a changing world. “The act of trying to define sustainability is difficult and frustrating. ...the notion of sustainability as a type of environmental adaptability came out of the discussion on scenarios with Peter Duinker, and struck me as being a particularly useful way of understanding what the goals of environment and sustainability should be. This was solidified for me by our introduction to the Natural Step Framework. Sustainability need not be (and in fact, should not be) a static, concrete set of parameters, such as having exactly “x” number of cars on the road, or “y” emissions from smokestacks. Although concrete parameters may be set, they are most useful when used with general principles of sustainability without concrete guidelines on how to reach them. This seems to be practical and achievable, but also incredibly smart, because as the world changes, humans must adapt, and setting concrete rules in an always-changing world could spell disaster.”

The limits of planet Earth appeared as a central issue in every Reflections paper. **Lauren Rakowski** wrote, “The common theme in regard to sustainability itself reflected the idea

that the human demand for resources has put the earth over its natural carrying capacity. As a consumerist society, we have externalized environmental and social costs, placing the burden onto others. This was made extremely apparent



through watching the Story of Stuff, which really opened my eyes to lifecycle thinking. As increases in health problems and dwindling resources now and for the future are more apparent, it is becoming more obvious that such a mindset will not carry us indefinitely. It has become evident that we must collaborate and incorporate ideas of social responsibility, ethics, accountability, legislation, complexity, historical data, traditional ecological knowledge, and health impacts. Just as any object cannot be fully understood and appreciated from one angle, so too will a singular approach to environmental issues be detrimental.”

Ryan Sorichetti pointed to the inextricable connection between business and its impact on the Earth’s ecosystems. “As we learned in the film, The Corporation, the business sector is not only known to have detrimental effects on the environment, but also on individuals worldwide in harsh and unequal working conditions. ...I have come to the conclusion that business is not going to change its ways without constructive pressures.”

A consensus emerged among the graduate students that as environmental problems become increasingly more complex, an interdisciplinary perspective, a pooling of knowledge and sharing view points across disciplines, is the right approach.

Also important to the development of sustainability is an interpretation of the past that will benefit the future. **Amar Singh** wrote, “In order to improve our perspective on where we are as a society and in what direction we are headed, we explored various versions of historical analysis. ... Using the totality of recorded history within a powerful computer database, models can constantly be generated to give insight into possible futures... precisely what Isaac Asimov envisioned with his fictional concept of “psychohistory” ... armed with a historical perspective on how we got to this point, and having thoroughly described the problems we are facing, we must discuss solutions and frameworks for action.”

On the ability of society to rebuild and achieve sustainability, the Reflections papers expressed a general mood of optimism. Many saw the necessity of engaging leaders in government, industry, academia, and non-governmental organizations in effecting change, with emphasis placed on the need for dialogue to transcend boundaries. However, as many students indicated, the need for progressive change comes down to the individual too, a change which many predict will take time as society recovers from a disassociation with nature. As **Arlen Leeming** explained, “Developing change is a mindset that incorporates a new understanding of what it means to be human and requires a shift in the current scope and focus that many humans have. No longer will there be room for individualistic greed or detached attitudes with regards to daily life in a social

system for the new definition of humanity will have to be built on the understanding that our strength as a species is derived from our ability to make decisions as a whole, and that we are all part of a closed system that is dependent on the actions of each one to ensure the survival of all.”

Above all, the Reflections papers supported the importance and the need for a dialogue on the Foundations of Sustainability that transcends all barriers and disciplines and that this dialogue has only just begun.

Premiere of the Foundations of Sustainability Video Projects

An important and challenging component for the MES graduate students in the Foundations of Sustainability was The Video Project. MES students were asked to produce a video of up to six minutes in which they had to identify a single social or environmental issue, describe the consequences to society for overlooking the issue, and then offer solutions that may be taken by government, business and individuals. Solutions had to be practical or doable and had to be up-and-running within a reasonable time frame. With the technical help and expertise of **Brent Potter**, Media Specialist for Learning Technology Resources at the Richard Ivey School of Business, students produced a number of films covering a wide spectrum of social and environmental issues and discovered the potential of this powerful medium to convey a message. The following is a list of Foundations of Sustainability Short Films and their collaborative film producers, with a mini-recap of their contents.

“There’s No Place Like Home”
Or home-made toxic soup! We all know about the pollution that creates poor air quality outside but this video makes an air-tight case to look for toxic culprits inside our

own homes. These pollutants can build to dangerous levels within enclosed environments and threaten our health. Produced by Meghan Brien, Mary MacDougall, Christina Baranik, Jen Locke

“The Future of Alternative Fuels” is an oil-slick and darkly comic take on our dangerously combustible dependency on fossil fuels and the by-gone era of trading in the planet for a short-lived cruise in a gas-guzzling jalopy. Produced by Ahmed Warsame, Carrie Sheaffer, Sam Bennett.

“Sustainable Communities” covers a wide range of sustainability issues within a community setting while using an upbeat and inspirational delivery. Produced by Pam Reid, Kristen Delaney, Lauren Bates.

The death-blow to poverty will not be dealt by hand-outs but by hand-held devices. *“Information Communication Technology”* makes the live connection between the spread of modern communication technologies and the eradication of dismal economic, education and health care conditions that hold millions of people in the grasp of abject poverty. Produced by Jennifer Reid, Amar Singh, Carolyn Tunks.

“Petroleum is a Finite Source” and we are nearing the finish line at a reckless speed. If only we would choose to see the sun in a new light or imagine a building designed to function like a tree. Time has come to change course by harnessing our understanding of science and using modern technologies to convert both our living spaces and our short-term concepts of what is convenient into something timeless. Produced by Mollie Cates, Sara Puppi, Anika Steblin

“The Value of Water” bursts open the myth that Canada is a country flush with fresh drinking water. The

film turns the tap on the bottled water industry and sets us awash with new ideas about how to stop the mindless draining of this invaluable resource.. Produced by Abena Amoako-Tuffour, Lauren Rakowski, Arlen Leeming.

In *“Waste Diversion”*, as in nature, there is no such thing as “away”, as in “thrown away”. The concepts of down-cycling and up-cycling waste are introduced on a continuum of increasingly sustainable solutions starting with landfill and ending with you, the discerning consumer. Produced by Krista Desrochers, Peter Zolotar, Devon Waters.

Winner of the People’s Choice Award, *“Corn-fed Beef and Sustainability”* links the prevalence of certain health conditions in both animals and humans and the rise of antibiotic resistant superbugs to a diet divorced from nature and overly industrialized methods of animal husbandry. At both ends of this chain reaction controversy is the ubiquitous kernel of corn, causing a gross imbalance in the diet and health of animals that is passed on to those who consume them. The film presents a classic illustration of how the grass is always greener on the other side. Produced by Phaedra Henley, Kimberly Schwartz, Katerina Klimas, Isabelle Gingras.



The Interdisciplinary Consulting Project



Many graduates of the MES program will seek employment in the environmental consulting industry, and the Interdisciplinary Consulting Course provides students with a creative and practical introduction to the field in a non-academic setting.

This year, a workshop titled “The Consultant’s Survival Guide” was introduced to orient students to the demands of an environmental consultant. Students were taught the differences between consultants and contractors, how to develop a company profile, conceptualize a project and define a work plan, how to run meetings and conference calls, and how to write research reports. They were also introduced to the importance of environmental networking, as well as the steps involved in obtaining such professional designations as the Canadian Certified Environmental Practitioner (CCEP) and Canadian Environmental Practitioner-in-Training

(CEPIT) certifications by **Dr. Michael Moss**, a representative of ECO Canada, an organization that develops programs that help individuals build meaningful environmental careers, provides employers with resources to find and keep the best environmental practitioners, and informs educators and governments of employment trends in this growing sector to ensure its ongoing prosperity.

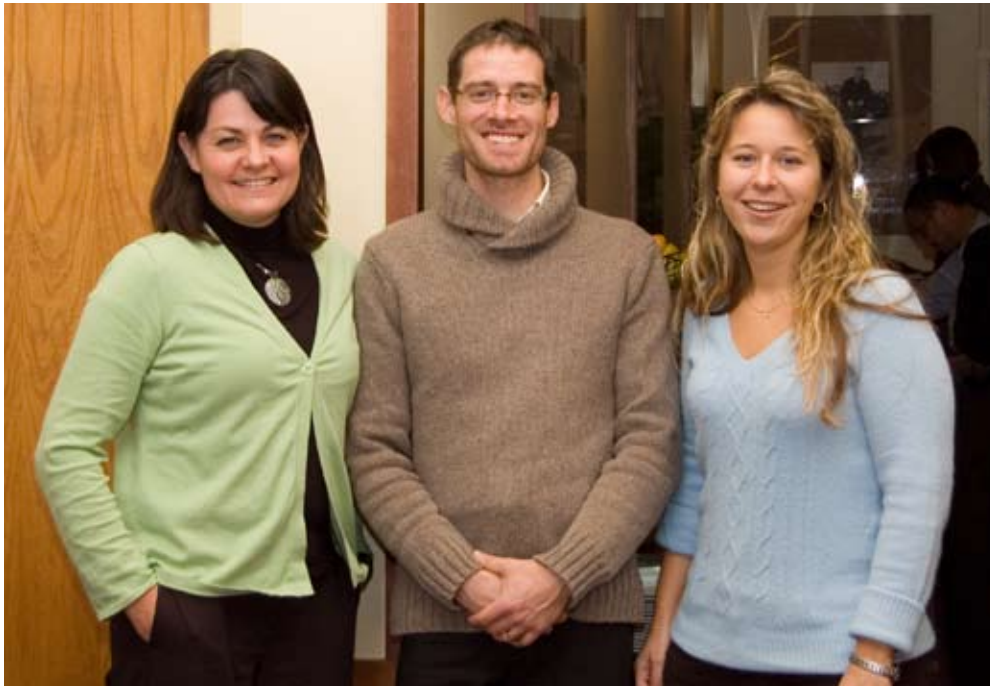
Dr. Irena Creed, the instructor for the course, recruited local government, non-government, industrial and academic organizations to serve as clients for the student consulting groups. She formed consulting teams, identified faculty mentors for each team, and facilitated the process from conception to completion of each project. Faculty mentors were drawn from the E&S community and included Charlie Trick, Jack Bend, Kul Bhattia, Tima Bansal, Gabor Sass, Mike Buzzelli, Rachel Bezner-Kerr and Tony Weis.

An innovation for this year is that Dr. Creed formed a partnership with The Natural Step, an international non-profit organization, to serve as “sustainability coaches” for the consulting teams. The Natural Step provides a science-based framework that gives businesses and organizations practical tools and information to make sustainable business decisions (see sidebar). The organization has worked with global corporations like Nike and IKEA, but the partnership with Western represents their first collaboration with a North American academic institution. Students first met their clients at a Project Design workshop, facilitated by **Chad Park** and **Bart Robinson** from The Natural Step, and started to plan their projects. After being introduced to The Natural Step sustainability framework at the workshop, many of the clients and consulting project teams incorporated the sustainability framework into their project design, with some clients continuing the relationship with The Natural Step into summer co-ops.

The consulting groups had about eight weeks to plan, conduct and communicate their projects, culminating at the IDEAS Conference held on April 27th at Western. Each group did a fantastic job of integrating all that they had learned from their other MES courses into real world situations.

2009 Interdisciplinary Consulting Projects:

Preparation of a cohesive framework to inform the City of London on environmental issues when making decisions on future developments.
Client: City of London
Consulting Group: Aeiforia Consultants (Meghan Brien, Arlen Leeming, Carrie Sheaffer, Peter Zolotar)



Dr. Irena Creed, Acting Co-Director E&S (L), and Ms. Iwona Ciesielka-Reed, Manager of Science Career Services and the Internship Program (R), meet with Chad Park of The Natural Step Canada.

Identifying political, financial and social barriers facing a program that would allow individuals and groups to sell produce grown in urban gardens.

Client: London Community Resource Centre

Consulting Group: Sprouting Community Consultants (Abena Amoako-Tuffour, Phaedra Henley, Pamela Reid)

Reviewing the Hamilton Harbour revitalization to evaluate whether the different stakeholders have been using the same holistic definition of health.

Client: Community of practice in ecosystem approaches to health (CoPEH) (Led by Dr. Bruce Hunter, Professor of Pathobiology, University of Guelph)

Consulting Group: Hydravation (Christina Baranik, Mollie Cates, Krista Desrochers)

Investigate the ecological, social and cultural health of the Lake Naivasha community in Kenya with the hope of eventually achieving the internationally recognized Eco-Village status.

Client: Lake Naivasha Sustainability Project (Led by Dr. Charlie Trick, Western's Ecosystem Health Chair)
Consulting Group: Biyo Consulting (Kristen Delaney, Isabelle Gingras, Ahmed Warsame)

Developing a sustainability assessment survey that will be used to evaluate the health of the Walpole Island wetlands for generations to come.

Client: Walpole Island First Nation's Heritage Centre

Consulting Group: March to May Consulting (Jennifer Locke, Sara Puppi, Jennifer Reid)

Investigating short- and long-term methods to help GoodLife become a more environmentally sustainable company.

Client: GoodLife Fitness
Consulting Group: GreenSteps Consulting (Katerina Klimas, Mary Macdougall, Devon Waters)

Evaluating three different aspects of this UV filtration company's operations and made recommendations that make sense both environmentally and economically.

Client: Trojan Technologies

Consulting Group: Towards Sustainable Solutions Consulting (Amar Singh, Anika Steblin, Carolyn Tunks)

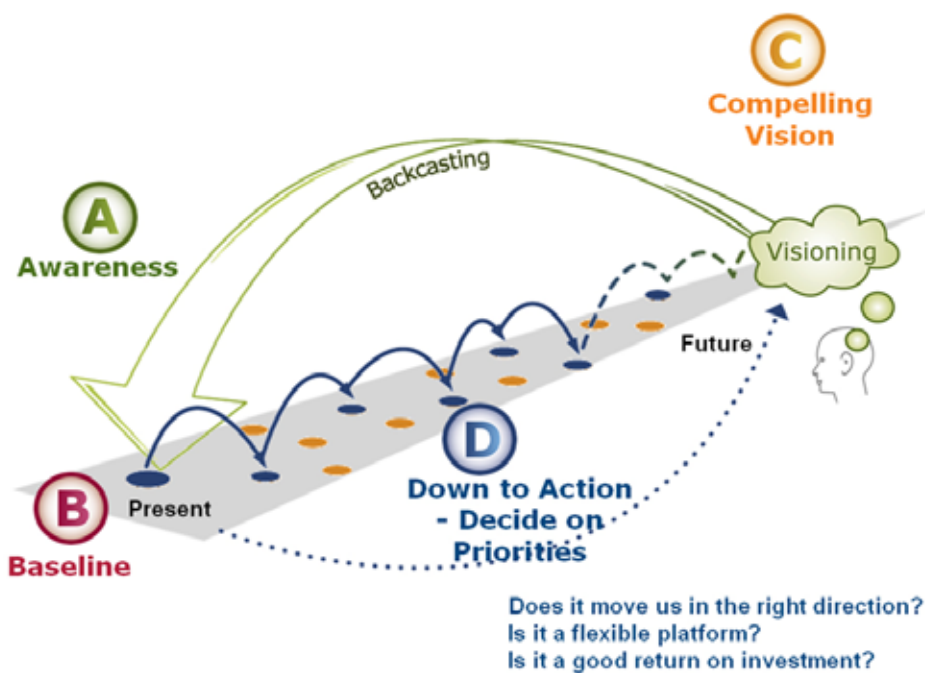
Investigating the obstacles to improving environmentally sustainable behaviours among Western's community of staff and students.

Client: UWO President's Office

Consulting Group: Brainstorm Consulting (Lauren Bates, Sam Bennett, Lauren Rakowski, Kimberly Schwartz)

Snapshot Overview of The Natural Step Framework

ABCD methodology



The A-B-C-D method to applying The Natural Step Framework consists of four steps which are repeated as an organization progresses toward sustainability: **A = Awareness and Visioning**, which involves the creation of a common language and shared vision. Consultant and client create a language around the understanding of sustainability and a vision of the organization in a sustainable future; **B = Baseline Mapping**, uses sustainability principles to conduct a sustainability 'gap analysis' of the major flows and impacts of the organization to analyze activities that run counter to sustainability principles; **C = Creative Solutions**, encourages organizations to work towards solutions highlighted in the baseline analysis without constraints; **D = Decide on Priorities**, encourages organizations to set priorities and move step-by-step towards implementation, action planning and methods used to teach change.

The E&S Summer Co-op Experience



While the month of May feels like the end of the academic year around the university, for some it is a time of new beginnings. For the 26 students in the Master's in Environment and Sustainability (MES) program, May began the final requirement of their degree – the Summer Co-op.



Urban E&S initiatives go beyond “the great outdoors.” Take Amar Singh’s placement with the Ontario Realty Corporation as an example. Amar’s summer placement has him working to establish the province as a leader in sustainable buildings.

The MES Summer Co-op placement follows the two academic terms and spans the months of May through August. The co-op provides an opportunity for students to apply the skills and knowledge obtained during the academic terms in a real-world, real-work setting. There is no list of prescribed skills or experience that the student must obtain, as the types of co-op positions and employers are varied; however, the work must involve Environment & Sustainability themes, and it is expected that the students will develop skills relevant to their particular co-op position. The employer and the student will determine appropriate learning objectives

early in the term to ensure a meaningful experience for both.

This summer, MES students are working with the federal government (Transport Canada, Parks Canada, the Canadian Environmental Assessment Agency and the DFO); with provincial agencies (the Ontario Realty Corporation and the OMNR); and with municipalities (City of London, Town of Essex, and the Township of King). MES students are working in the consulting field (North-South Environmental Inc., the Guelph Food Technology Centre and Impakt Corp.), and for various non-government organizations (Canadian Institute for Environmental Law and Policy and the London Community Resource Centre). MES students are also engaged in private sector businesses and industry (TRY Recycling, GO Transit and GoodLife Fitness), and university research programs at Western and elsewhere.

From one year to another it is impossible to predict the location of co-op placements. This year, a number were based here in London, as well as Toronto, Ottawa, and other Southern Ontario locations. One MES student has gone to a southern Gulf Island in British Columbia and another went north for two months in Algonquin Park – all part of the job!

Five of this year’s MES Summer Co-op positions are part of a pilot program between the University of Western Ontario (E&S) and The Natural Step Canada (TNS), an Ottawa-based company that supports businesses and organizations engaging in

sustainability analysis and planning. These students work directly for the client organization while being mentored by TNS professionals and UWO faculty. This enables students to develop marketable project leadership skills while providing the desired sustainability planning for their employer.

In late August, students will reconvene on campus for a conference to present and share the outcomes of their co-op experience, exchange work experiences related to E&S, and to discuss practical applications that may be applied in environmental careers.



Anika Steblin is working to establish green initiatives such as a windfarm (an example is shown above), recently approved for the town of Essex.

From the Co-op Front



It's summertime and life is busy, especially out in E&S's co-op placement world. With summer not yet half over, students are already heavily involved in their projects and, by all reports, gaining valuable, hands-on experience.

On Salt Spring Island, British Columbia, **Phaedra Henley** is working on phase two of the community-driven "Healthy Ecosystems, Healthy Community Initiative" project. Phase one assessed the health of the ecosystems along with the health and well-being of the community. The second phase will focus on freshwater issues across the island by synthesizing information about water quality and quantity, how water is used, what practices affect its availability and quality, community members' perceptions about water, and other critical issues. Phaedra will employ the Natural Step Framework to design a survey to assess islander awareness of issues related to water and activities in the watersheds that impact its quality and quantity. Phaedra looks forward to working with local schools to introduce hands-on projects.

Anika Steblin is working as a Sustainability Planning Assistant for the Town of Essex, a small rural municipality near Windsor. Anika is raising sustainability awareness among town staff and the community, and she is implementing sustainability initiatives, the first steps in the development phase of a Sustainability Master Plan for the town. Anika is excited by the scope of projects that Essex is planning

in support of greener, cleaner development, such as a wind farm, which has recently been approved. Her observations in the field lead her to conclude that municipal settings are ideal for encouraging sustainability initiatives due to their high visibility with the public and the opportunities for sustainable business growth.



Phaedra Henley at Salt Spring Island

Pamela Reid's placement at the London Community Resource Centre (LCRC) is a continuation of her group consultation project from the E&S Interdisciplinary Consulting Project Course. In her position, Pamela is assisting co-workers with the Community Gardens Project, the annual picnic and garden tour, and has applied for the \$5,000 Community Spirit Award for LCRC. This summer she will complete the recommendations set forth in the development stages of the consulting project, which may lead to a full-time

position. She will be drawing from The Natural Step Framework and models of sustainability to justify the project to prospective funders. LCRC will highlight the educational components of the urban farming model being proposed. Pamela feels that the community response for a more sustainable food system is gaining momentum, especially providing healthy food for citizens living in poverty.

Amar Singh draws on the E&S Engineering Solutions, Interdisciplinary Consulting Project, and Foundations of Sustainability courses for his placement at the Ontario Realty Corporation (ORC). Amar is involved with several projects: the greening of the Ontario government's real estate portfolio to establish the province as a leader in sustainable buildings; the internal sustainability framework; the construction sustainability design standards manual; a sustainability scorecard for new developments; consulting for the ORC's first corporate responsibility report; working with the Canadian Green Buildings Council on certification for four buildings, and tracking the baseline performance of a new building and monitoring the design team's current efforts to achieve environmental excellence.

No matter the setting - rural, city, non-profit, or corporate - the need for sustainable policies and practices is necessary, and co-op students are making significant contributions towards this movement. Special thanks to these E&S students for reporting "from the co-op front."

Earth Day Colloquium



The Sixth Annual Earth Day Colloquium, held this year on April 17th, is a one-day event that celebrates the interdisciplinary nature of Environment and Sustainability. Organized by a committee of graduate students in the Environment and Sustainability Program, The Earth Day Colloquium has experienced growing momentum over time, and this year followed this trend, thanks to the addition of the Video Projects produced by MES students and growing regional participation. This year we welcomed speakers from Western as well University of Guelph, Wilfred Laurier University, York University, University

of Windsor, Trojan Technologies, and Reyouzd.com. The growing momentum was possible by the dedicated team of students who worked tirelessly in its planning, including collaborative students **Shauna Solomon, Katie Stammler, Sonja Teichert, Nikhil Lobo, Jon Berge, Lindsay Crawford, Ross Breckels, Mike Kenigsberg, Ian Power, Farrukh Chistie**, and MES students **Meghan Brien, Anika Steblin, and Arlen Leeming**.

Keynote Speaker **Dr. Gordon McBean**, began the day of presentations with his talk, "How science and scientists influence public policy."

The day consisted of two concurrent sessions of presentations, interspersed with a number of invited speakers. The roster of invited speakers and their topics included **Dr. Jeremy McNeil** ("How will migratory insects cope with climate change?"), **Tom Ewart** ("What is business sustainability research and why should you care?"), **Dr. Jason Gerhard** ("Industrial pollution of urban environments and brownfield restoration"), and **Dr. Jack Bend** (Environmental pathology and ecosystem health research: a

multidisciplinary, participatory, community-based approach).

The Earth Day colloquium provided a forum for a broad range of topics in the sciences, engineering, social sciences, business, policy and management. Throughout the day, presentations were made on such diverse topics as conifer seed predation by rodents, evaluating the success of Ontario's blue box program, numerical modeling of thunderstorm downbursts, habitat effects on native and exotic avian populations, comparing fish consumption habits and hair mercury content of women of reproductive age – to name only a few.

The Colloquium provided an excellent opportunity for students, faculty, and individuals and groups from government, industry and the community to join together to discuss Environment and Sustainability.

This year's event was a great success thanks to the eager participation of all of our presenters and attendees. We are very proud of the Colloquium and thankful for the ongoing support from our sponsors and the E&S faculty. We are already looking forward to next year's event – hope to see you there!



Opening address by Dan Shrubsole

The IDEAS Conference with Keynote Speaker Bob McDonald

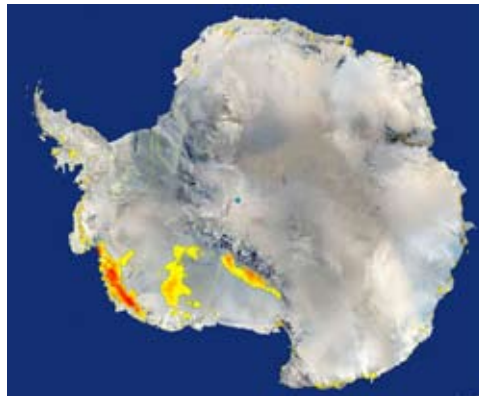


The second annual IDEAS (InterDisciplinary Environmental Actions for Sustainability) Conference, held on April 27th at Western, was the culmination of the Interdisciplinary Consulting Course. For weeks, student consultants and clients met to discuss methods of achieving sustainable practices in their organizations. The IDEAS Conference enabled the student consulting teams to formally present the results of their research analysis and, based on their results, make sustainable recommendations to their clients.

Following welcoming comments by **Dean David Wardlaw** and **Dan Shrubsole**, the IDEAS Conference got underway with a talk by Keynote Speaker, **Bob McDonald**, the popular CBC radio host of the science show *Quirks & Quarks* and a well known science journalist and author. McDonald discussed Environmental Conundrums,

a situation that arises when impractical, destructive or even unhealthy

environmental practices continue despite scientific warnings and contra-indications. McDonald spoke of the polar icecap melt and its implications on the planet, the impending problem with water, the continued and unsustainable need for oil, and the ability for us to turn the situation around before the planet suffers greater damage. McDonald's



Above: NASA's QuikScat satellite detected extensive areas of snowmelt, shown in yellow and red, in west Antarctica in January 2005. Image credit: NASA/JPL

talk, entertaining and animated, was not all doom and gloom. He lauded the MES students for their commitment to environmental studies and encouraged them to keep on spreading the message of environmental sustainability as students, consultants, and on into their future, emerging careers. Through work such as theirs, McDonald said, the rate of damage to the planet caused by man can be slowed, stopped and reversed. The future, he said, holds the promise of creative environmental solutions.

Chad Park, a founding member and Senior Sustainability Advisor for The Natural Step (TNS) Canada, spoke at the IDEAS Conference about the TNS Framework. He provided a history of The Natural Step and its founder in Sweden, and gave an overview of how the TNS model is applied in business

practice, an application used by some of the consulting teams. Park has facilitated hundreds of presentations and training workshops for a wide variety of audiences, and he has advised municipalities and community groups throughout Canada.

Irena Creed then served as Master of Ceremonies for the rest of the Conference. Each of the student consulting teams presented their projects to an audience that included their clients, faculty and students, and members of the community.



MES Class of 2009 poses with Acting Co-Directors of the E&S Program, Drs. Irena Creed and Daniel Shrubsole, at the 2nd Annual IDEAS Conference.

E&S Happenings



MES students A. Singh and A. Steblin, Interdisciplinary Consulting Project Launch Workshop, Windermere Manor in March.



Collaborative and MES program students, faculty and staff learn about The Natural Step (TNS) Framework as a tool for integrated sustainability planning and education, November 2008. L-R: S. Teichert, M. Brien, A. Singh, I. Creed, D. Velasquez, I. Ciesielka-Reed, G. Sass, C. Park (TNS), S. Elliot, T. Ewart.



Dr. Gordon McBean delivers the keynote address, "How Science and Scientists Influence Public Policy", at the 6th Annual Earth Day Colloquium in April.



Western graduate Dr. Rob Nicol and students from the University of Guelph Ridgetown campus travelled to London to deliver a talk on, "Evaluating the success of Ontario's blue box program", at the 6th Annual Earth Day Colloquium in April.



Participants gather for coffee reception at the 6th Annual Earth Day Colloquium, an interdisciplinary gathering to showcase research projects underway across campus and beyond.

Facing: S. Teichert, PhD candidate (Biology and Environment & Sustainability) and one of the event organizers.



Lindsay Crawford, PhD candidate (Biology and Environment & Sustainability) and event organizer, enjoys a coffee break during a busy day at the 6th Annual Earth Day Colloquium held in April.



Students from the Ontario Veterinary College (Guelph), the Schulich School of Medicine and Dentistry, and the Environment & Sustainability Program at Western, hit the road in March to participate in a field course on Comparing Ecosystem Approaches to Human Health, using Hamilton Harbour as a case study. Instructors Dr. Bruce Hunter (5th from left) and Dr. David Waltner-Toews (4th from right), both of the University of Guelph, join them in this photo.



*Edward Burtynski, the celebrated Canadian photographer whose work is the subject of the film *Manufactured Landscapes*, fields questions from a Western audience during his visit to campus in March.*



*Dr. Brian Fagan, author and Emeritus professor of Anthropology (University of California, Davis), poses with Dr. Irena Creed (Acting Co-Director E&S) and Dr. Alan MacEachern (Dept. of History and NiCHE meeting organizer), at the close of his visit to Western in October, where he spoke on history and climate change. Dr. Fagan is the author of *The Little Ice Age*, this year's selected work for "E&S Reads."*



Stephen Marklevitz, a collaborative student with Biology (Dr. Yolanda Morbey supervisor), gave an excellent presentation at the 6th Annual Earth Day Colloquium. His presentation featured his Masters of Science work on "talking" salmon (oh the tales that they tell!). Stephen was recognized by E&S faculty for his excellent contributions to the E&S programs.



MES students gather together for class (crunch!) time this spring. With a significant increase in the enrollment for 2010, the MES program will receive some breathing room when it moves to Natural Science Building this autumn.



MES Program student members of the Lake Naivasha Consulting team: Isabelle Gingras, Kristin Delaney (centre) and Ahmed Warsame (right) meet with Eric Enanga (left) and Alexandra Kleiman (2nd right) at the Interdisciplinary Consulting Project Launch Workshop.



Medical doctor, author and founder/Executive Director of War Child Canada, Dr. Samantha Nutt, poses with Dr. Charles Trick, Beryl Ivey Chair for Ecosystem Health, Schulich School of Medicine and Dentistry, during her visit to Western for a special lecture, "Starting an NGO, Staying Motivated and the Power of the Media" in March.



Author and journalist Dr. Raj Patel fields questions from students in the audience. Patel's lecture on markets, power and the world's food system drew a large, standing-room-only crowd.



*Dr. Raj Patel receives a speaker's gift from a member of the Global and Ecosystem Health Interest Group. Patel visited Western in February to deliver a compelling lecture based on his book, *Stuffed and Starved: Markets, Power and the Hidden Battle for the World's Food System*.*



MES student consulting teams pose with their clients at the close of the Interdisciplinary Consulting Project Launch Workshop held at Windermere Manor in March. The workshop brought students together with their first "real-world" clients and faculty mentors.

A Look Back

SEPT 3

Welcome reception for the E&S community, including faculty, students and staff.

OCT 23

E&S reads **Dr. Brian Fagan**'s book, *The Little Ice Age*, and attends his seminar: "And on that day the earth will be burned to ashes: Looking at ancient climate change" After reading from *The Little Ice Age*, the E&S community was given the opportunity to meet and discuss the book with the author. Dr. Fagan visited UWO to participate in the "Canadian Climate History" workshop organized by **Dr. Alan MacEachern** (History, UWO) and **Dr. Liza Piper** (History, Univ. of Alberta) on behalf of NiCHE (Network in Canadian History & Environment).

Sponsors: Office of the Vice-President, Faculty of Social Science, Department of Geography, Department of Anthropology, Department of History, NiCHE, McConnell Family Foundation, and E&S

OCT 29

Seminar by **Chad Park**: "Sustainability driven innovation based on The Natural Step Framework". Park works with organizations and communities to support the use of The Natural Step Framework as a tool for integrated sustainability planning and education.

Sponsor: E&S

NOV 6

Seminar by **Dr. Peter Duinker**: "Scenario analysis for understanding forest policy: Experiences with European and Canadian forests". Following the seminar, Dr. Duinker led a "hands-on" workshop to introduce the graduate students in the Foundations of Sustainability course to scenario analysis and its potential application to sustainability.

Sponsor: E&S

JAN 21-22

Film Viewing and Q & A with **Mark Achbar** (producer/director) and **Siobhan Flanagan** (consultant): "The Corporation". The award-winning film applies the psychopathic checklist used by modern psychiatry to fit the corporate personality. Discussion centred on the power of film to convey a message, as well as the complex and often contradictory issues of corporations needing to serve shareholders while behaving as good social and environmental citizens.

Sponsors: McConnell Family Foundation, Global and Ecosystem Health Interest Group at the Schulich School of Medicine & Dentistry, Richard Ivey School of Business and E&S

JAN 27

Seminar by **Peter Calamai**: "The art of science reporting". An award-winning, veteran science reporter for the Toronto Star and the Ottawa Citizen, Calamai encouraged students to consider careers in science journalism and described his own experiences that have taken him all over the world. Science journalism, Calamai said, is an often overlooked, rewarding field.

Sponsors: Biology and E&S

FEB 4

Seminar by **Gerald Butts**, President of World Wildlife Fund (WWF) Canada: "Walking the talk: How to make a difference and inspire others". The WWF's mission is to stop the degradation of the planet's natural environment and build a future in which humans live in harmony with nature by conserving the world's biological diversity; ensuring the use of renewable natural resources is sustainable; and promoting the reduction of pollution and wasteful consumption. Butts discussed how taking individual action and inspiring others is the leading force for change in conservation.

Sponsors: Science and Career Services, Faculty of Science, Biology, and E&S

FEB 26

Seminar by **Dr. Raj Patel**: “Stuffed and starved: Markets, power and the hidden battle for the world’s food system”. The author, journalist and food policy expert challenged our presumptions about the global food economy through his work as a policy analyst and as an activist, examined the growing worldwide food crisis and discussed what can be done to solve it.

Sponsors: McConnell Family Foundation, Global and Ecosystem Health Interest Group at the Schulich School of Medicine & Dentistry, and E&S

MAR 6

“The Interdisciplinary Consulting Project Launch Workshop” facilitated by **Chad Park** and **Bart Robinson** from The Natural Step. The E&S Program challenges MES students with a “real world” problem about which they will formally research, analyze and document for the benefit of their clients. An all-day workshop brought MES students, their faculty mentors and consulting project clients together to discuss TNS project framework, introduce key concepts and derive the terms of reference for each project.

Sponsor: E&S

MAR 9-13

“Comparing ecosystem health approaches to human health: A case study of Hamilton Harbour”. This one-week joint educational initiative between the Ontario Veterinary College at University of Guelph (**Drs. Bruce Hunter** and **David Waltner-Toews**) and the E&S Program (**Drs. Irena Creed**, **Charlie Trick** and **Jack Bend**) at UWO demonstrated the importance of an interdisciplinary approach when investigating complex environmental problems that have significant human health concerns. The Hamilton case study required students to consider a broad range of factors including basic scientific evidence, human value systems, and community participation.

Sponsors: Ontario Veterinary College at University of Guelph and E&S

MAR 25

Seminar by **Dr. Samantha Nutt**: “Starting an NGO, staying motivated and the power of the media”. A medical doctor and author, Samantha Nutt has worked for more than thirteen years in the world’s most active war zones with War Child Canada, the United Nations and non-governmental organizations (NGOs). As Founder and Executive Director of War Child Canada, she spearheaded efforts to provide direct humanitarian support and long-term programming to war-affected children and their families, and to promote greater awareness concerning the rights of children everywhere.

Sponsors: McConnell Family Foundation, Global and Ecosystem Health Interest Group at the Schulich School of Medicine & Dentistry, and E&S

MAR 26-27

Film screening of **Edward Burtynski**’s “Manufactured Landscapes” and seminar by Edward Burtynski: “In the Wake of Progress”. One of Canada’s most respected photographers, Edward Burtynski took us around the world in photographs, revealing places rarely seen. An advocate for sustainable living practices, his images illustrated a vital discussion about the colossal effects of economic and industrial growth upon our planet.

Sponsors: McConnell Family Foundation, Schulich School of Medicine and Dentistry, Richard Ivey School of Business, Department of Geography, and E&S

APR 3

Seminar by **Dr. William Rees**, Professor at Simon Fraser University: “Global Change and the End of Growth”. William Rees is best known for originating and co-developing the concept of “ecological footprint analysis.” The book *Our Ecological Footprint* has been translated into eight languages. As a human ecologist and ecological economist, his research and teaching focus on the biophysical prerequisites for sustainable societies in an era of accelerating global ecological change.

Sponsors: McConnell Family Foundation, Global and Ecosystem Health Interest Group at the Schulich School of Medicine & Dentistry, Geography, and E&S

APR 17

6th Annual Earth Day Colloquium: Organized by E&S graduate students in the Collaborative Program, this event featured a wide variety of presentations on research underway across campus within the field of environment and sustainability. The keynote speaker was **Dr. Gordon McBean**.

Sponsors: Faculty of Science, Faculty of Engineering, Faculty of Social Science, Research Western, Society of Graduate Students, NOVA Chemicals (Sarnia), and E&S

APR 22

Dr. Michael Barbour: "Anwar Maun Memorial Lecture". Family, friends, colleagues, and students gathered on Earth Day for a memorial lecture to pay tribute to Dr. M. Anwar Maun, Professor Emeritus of the Department of Biology, renowned Ecologist and founder of the Environmental Science Graduate Program (MSc and PhD) at Western. Friend and colleague Dr. Michael Barbour, from the Environmental Horticultural Department, University of California, Davis, gave the lecture.

Sponsors: Biology and E&S

APR 27

2nd Annual IDEAS conference: Organized by E&S graduate students in the MES program, this event showcased the interdisciplinary consulting projects to their clients and the E&S community. **Bob McDonald**, of CBC's Quirks and Quarks, delivered the keynote "Environmental Conundrums." Canada is one of the worst consumers of energy and water in the world. Scientists have been sounding alarm bells about environmental decline for decades. Why is real social change so slow in coming? Are there realistic solutions? **Chad Park** reviewed The Natural Step Framework for the audience, and the MES students followed with presentations of their consulting projects.

Sponsor: E&S

Alumni Profile



Emily Bailey, a MES graduate from our inaugural class of 2008.

than 20% of Ontario's electricity.

Emily recently sent us this update: "I just thought I should let you know how the MES program has allowed me to achieve the position. Shortly after completing the MES program, I was

Emily Bailey (MES 2008) was recently appointed as a Senior Technical Engineer/Officer for the Site Services Safety Support and Environment Section at Bruce Power, Canada's first private nuclear generating company and the source of more

hired as a Nuclear Operator in training at Bruce Power. I thought it would be an excellent opportunity for me to learn the nuclear science aspects of the company. After eight months into the two-year operator training program, an opportunity to work in the Environment Section of the company came up. It was a tough decision to leave Operations because I was learning so many valuable skills. On the other hand, I was thrilled because the job related to my academic studies and it was in line with the way I pictured my future after graduation - I could not turn down the offer.

While I have been in this new role for only six weeks, I have been given significant responsibilities that include: ensuring that centre of site continues to comply with environmental legislation; participating in the development of plans to ensure new environmental policies are known and followed; participating in the

internal ISO 14001 audit; and reporting to various regulatory authorities. As a Centre of Site Environment Officer, my responsibilities encompass the parts of our facility outside the generating stations such as the sewage processing plant, steam plant, administrative buildings, and wetlands. Our generating facilities have their own specific Environment Officers.

I am very excited about being part of this team for Bruce Power. I wanted to let you know that the MES program definitely contributed to my obtaining this position. The MES interdisciplinary consulting project gave me many professional skills that I have been able to carry over into the working world and hopefully make a difference."

Congratulations on your professional success Emily! We look forward to future updates from our other alumni.

Our Graduating Classes

The Environment and Sustainability Program is pleased to present the **2009 Award of Excellence for the Masters in Environment and Sustainability**, course based, to the following recipients in recognition of their overall outstanding achievements in the Environment and Sustainability Graduate Program:

Arlen Leeming, MES
Amar Singh, MES

The Environment and Sustainability Program is pleased to present the **2009 Award of Excellence for the Collaborative Program**, thesis based, to the following recipients in recognition of their overall outstanding achievements in the Environment and Sustainability Graduate Program.

Eric Enanga, MSc (Biology)
Ryan Sorichetti, MSc (Biology)
Stephen Marklevitz, MSc (Biology)
Shauna Solomon, MA (Anthropology)
Shahram Amirnia, PhD (Chemical & Biochemical Engineering)
Sonja Teichert, PhD (Biology)
Jon Berge, PhD (Electrical and Computer Engineering)
Ian Power, PhD (Earth Sciences)

Honourable Mentions for Overall Excellence in the Environment and Sustainability Graduate Program go to students who have made significant contributions in all aspects of the program.

Nora Casson (Biology)
Lindsay Crawford (Biology)
Katie Stammler (Biology)

The Environment and Sustainability Program would like to congratulate its **2009 Graduates of the Collaborative Program**:

Nora Casson, MSc (Biology)
Crisia Tabacaru, MSc (Biology)
Jennifer Smith, MSc (Biology)
Daria Koscinski, PhD (Biology)
Adam Yates, PhD (Biology)
Laura Donkervoort, MSc (Earth Sciences)
Blessing Iserhienrhien, MSc (Physics & Astronomy)
Shahram Amirnia, MSc (Chemical Biochemical Engineering)
M. Feisal Rahman, MSc (Civil & Environmental Engineering)

E&S Administration

Steering Advisory Committee (SAC) 2008-09

David Wardlaw, Dean of Science (Chair)
Hesham El Naggar, Assoc. Dean Research, Faculty of Engineering
Paul Charpentier, Dept. of Chemical & Biochemical Engineering, Faculty of Engineering
Julie McMullin, Assoc. Dean Research, Faculty of Social Science
Rick Secco, Assistant Graduate Studies, Faculty of Science
Irena Creed, Dept. of Biology, Faculty of Science and Acting Co-Director for Programs in E&S
Daniel Shrubsole, Dept. of Geography, Faculty of Social Science, Acting Co-Director for Programs in E&S

Program Advisory Committee (PAC) 2008-09

Chair

Irena Creed, Acting Co-Director (Academic) for Programs in Environment and Sustainability

Faculty representatives from each of the five faculties

Science – Ron Martin (with Elizabeth Webb as sabbatical replacement effective January 2009)
Social Science – Rachel Bezner-Kerr
Engineering – Denis O'Carroll
Medicine and Dentistry – Jack Bend
Business – Pratima Bansal

Newsletter Consultants

Catharine Leggett
Johnston Miller
Mitchell Zimmer

Faculty instructors in the E&S graduate programs

Policy and Planning – Dan Shrubsole
Sustainable Business Practices – Tom Ewart
Ecosystem Health – Charles Trick
Engineering Solutions – Argyrios Margaritis
Interdisciplinary Consulting Project – Irena Creed
Workshop & Seminar Coordinator – Irena Creed

Graduate Students

MES Graduate Program – Amar Singh
Collaborative Thesis Graduate Program – Ian Power

Coordinator for Co-ops (not voting) – Iwona Ciesielka-Reed

Program Administrator for Environment and Sustainability (not voting)
– Holly Sanderson

We are publishing **DISPATCHES** to provide detailed information about progress in the Environment & Sustainability Program at The University of Western Ontario. Submissions to this newsletter, suggestions about content and corrections to previous editions are always welcome. If you are interested in contributing materials, please call or send email to: Dr. Irena Creed [icreed@uwo.ca; (519) 661-4265].