

MCGILL

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ENVIRONMENT

NEWSLETTER



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Graduate Employed to Establish Common Ground

Alexander MacDonald, BSc'02, a graduate of the MSE in Renewable Resource Management, is halfway through a pivotal nine-month career-development internship in Nova Scotia. After graduating as last year's Valedictorian at the Macdonald Campus Convocation, Alex was hired as the Executive Director of the non-profit Valley Watershed Stewardship Association (VWSA) whose mandate is to facilitate, promote and encourage stewardship of water resources.

The VWSA is responsible for the six-hundred square kilometre, sixty-thousand people, and five watersheds that make up the Annapolis Valley. The Association serves primarily as a forum for water resource stakeholders who meet every month

to discuss their concerns about the Valley's water supply. Stakeholders in this area are a diverse group, with agricultural, residential, commercial, recreational and environmental interests in the watersheds. The main priority of the VWSA is to establish a common ground between all of the stakeholders on water issues.

As Alex explains, "due to the varied nature of the stakeholders' concerns and interests, the job

is not always easy." For example, "many environmentalists and residents of the area are concerned by contaminated runoff in agricultural areas, while those in the agricultural community are worried about their livelihood and any restrictions that might be imposed by those with other interests." Alex is discovering that his broad-ranging education from the MSE has supplied him with, what he describes as, a fluency in many different areas of environmental concern enabling



graduates, like him, to understand the priorities and interests of people who have very different backgrounds and depend on resources for very different reasons. Alex admits, however, that the greatest difficulty in his new job has been to set aside his personal environmental beliefs in order to come to a consensus which is acceptable to all

stakeholders.

When asked about his next career move upon completion of the internship, Alex says that he plans to undertake graduate studies in ethnozoology. He participated in the Panama Field Study Semester as an undergraduate and would love to continue doing research in the tropics.

Photo: Alex MacDonald during the Panama Field Study Semester.

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The MSE Continues to Flourish



It has been said that the “health” of the MSE can be defined by the level of general excitement. If that’s the case, we are certainly VERY healthy. Thanks to the energy and enthusiasm of **Gregory Mikkelson** (MSE /Philosophy), we launched a weekly seminar series which engages undergraduate students, graduate students and professors from 8 different Faculties in discussions ranging from a behind-the-scenes look at the history of the Species at Risk legislation in Canada, to dam removal, to trade and environment conflicts. The seminar series has proven to be a tremendous success in strengthening links between faculty members and students at McGill.

As in previous years, we are delighted to welcome new faculty who have joined our swelling ranks. Our first jointly appointed Associate Professor, **Arun Agrawal**, will continue his investigations on community-based conservation and migrant pastoral peoples, examining the interplays among ethnicity and gender, politics and markets, resources and the state. **Rebecca Hardin** is jointly appointed with the Department of Anthropology. Her work on tourism and trophy hunting in equatorial African protected areas included comparisons with logging, and critical analysis of the forest concession as a unit of management. She chairs an interdisciplinary, international working group on emergent viral disease and forest use, and is beginning to compare corporate/community interfaces in logging and mining concessions in South Africa and Central African Republic. The arrival of **Lisa Sideris** into a joint appointment with the Faculty of Religious Studies brings expertise in the interface between evolution, religion and ethics, in particular the relevance of natural selection for environmental ethics. She is currently co-editing a commemorative collection of essays that celebrate the 40th anniversary of the publication of “Silent Spring” by Rachel Carson - a book that is considered the beginning of the modern environmental movement. The MSE and McGill University have joined the movement to re-focus attention on Carson’s important work through two Beatty Memorial Lectures, the first by Sandra Steingraber that was held on December 3, and the second by Herman Daly to be held on March 26 (see page 6 for details).

Our professoriate is not the only MSE group that is growing, so to is our student body. The number of applications that the MSE receives annually has increased significantly since 1998, resulting in a climb in enrollment from 75 in 1998-1999 to 340 in 2002-2003. In addition, there is an increasing flow of MSE graduates stepping out into the world equipped with new knowledge gained from our undergraduate and diploma programs. After this year’s Fall Convocation there are 94 graduates, 45% of whom have achieved honours.

And so, as you read through the following pages you will see that as the MSE heads into 2003, our students, faculty and graduates are flourishing with a steady stream of enthusiastic ideas about how to improve our relationship with the environment.

Marilyn Scott, MSE Interim Director



MSE Faculty members: (from bottom left) Lisa Sideris, Colin Duncan, Frédéric Fabry, Sylvie de Blois, Marilyn Scott, Madhav Badami, Anthony Ricciardi, Arun Agrawal, Gregory Mikkelson, and Rebecca Hardin.

T Congratulations MSE Scholarship Recipients

This year’s in-course scholarships were awarded to MSE students **Rebekah Marie Kipp** (recipient of the Diane Hasley Scholarship in Environment) and **Melanie Lapointe** (Judith Mappin Scholarship in Environment recipient).

In addition, new this year, J.W. McConnell Family Foundation Entrance Scholarships in Environment were awarded to exceptional students entering the MSE. Recipients of these awards were **Julie Fortier, Jessica Hawryshyn, Elizabeth Heller, Michelle Lee, Krista Nerland, Leigh Pharand, and Katrina Seckar.**

Climate Change in the Classroom

The hotly debated question of whether or not to ratify the terms of the 1997 Kyoto Protocol is ubiquitous in Canadian politics, and the evident and untold consequences of rising temperatures are being grappled with around the globe. Students and Professors at the MSE are no exception.



“The Global Environment,” one of the core courses of the MSE curriculum, taught by a team of associate member and jointly appointed professors inquires into how human activities modify the composition of the Earth’s atmosphere. Students, led by Charles

Lin (Atmospheric and Oceanic Sciences), Anthony Ricciardi (MSE/Redpath Museum) and Nigel Roulet (Geography), are using the Kyoto debate to understand what the future global climate might look like.

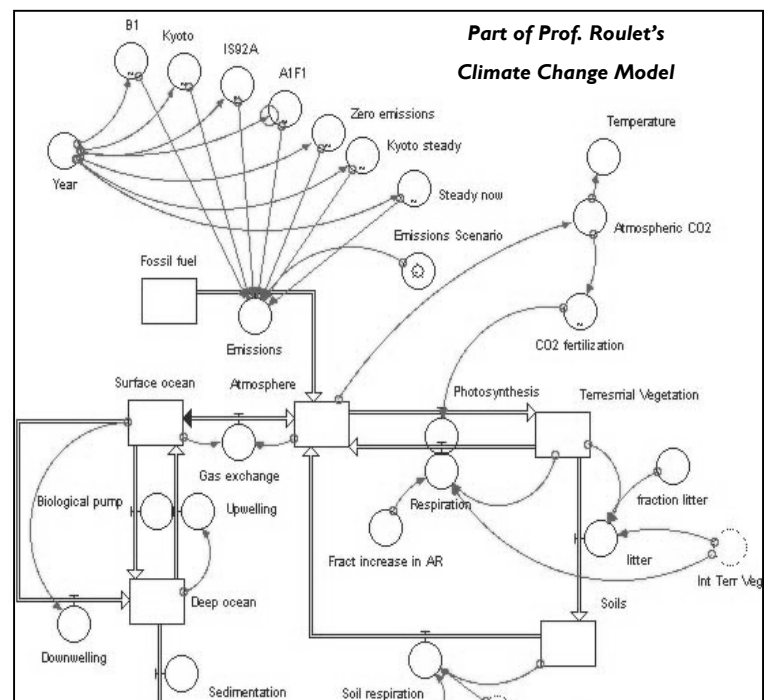
The team of professors’ primary concern is that students learn how to predict, scientifically, future climatic conditions. In one of the course’s innovative assignments, students are asked to assume the role of scientists who will inform the Minister of Environment. A computer program, developed by Professor Roulet, presents students with seven different scenarios ranging from; green house gases resulting from human activity permanently cease to be emitted into the environment to one in which there is steady economic growth with a rapid increase in greenhouse gas emissions. Somewhere in the middle stands the Kyoto Protocol, which aims to reduce the collective global emissions of greenhouse gases by 5.2% of 1990 levels. Based on their own scientific inquiry, students must predict the percentage of global climate change that will have occurred by the year 2100, under the conditions of each of the seven scenarios.

The assignment, which uses a “systems approach,” looks at the earth as an interrelation of sub-components that control

carbon dioxide in the Earth’s environment. Following from a scientific understanding of these sub-components, their ability to absorb greenhouse gases, and the amount of greenhouse gases that would be in the environment according to each hypothetical scenario, students can begin to predict what the future global temperatures would be in each situation. They must then answer questions such as “is there sufficient evidence to argue that climate change is occurring and will continue to occur if no action is taken?” And, “what are the environmental, economic and social consequences of reducing greenhouse gas emissions?”

Prof. Roulet remarks that many of his students find the course particularly challenging because they do not rely solely on other people’s findings, but are expected to draw upon what they have learned in the course or through their own independent research to come to their own conclusions.

Yet it seems that the challenge is worth it, for thanks to this team of professors, students develop the abilities to make informed decisions.



McGill Honours Ambitious Students

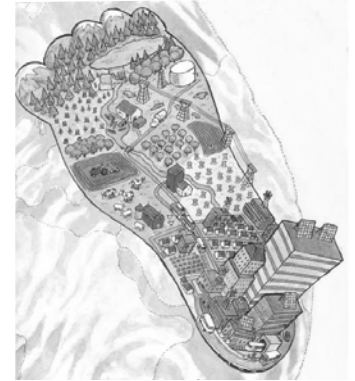
MSE students Farrah Ali-Khan, Melanie LaPointe, Carolyn Ross and Maryse Bourgault have partnered with Mark Kneesker and Flannery Denny, to form BAGBUSTERS. The group is bound together by the belief that actions in day-to-day living greatly affect the environment. Plastic bags are an excellent case in point partly because they are so widely used. “They pile up high in garbage dumps, never to decompose, and invade fragile ecosystems, killing birds, sea mammals and fish,” said Ali Khan.

Last October, BAGBUSTERS was one of ten student projects honoured by McGill for progressing to the final selection stage of the Forces Avenir application process. Forces Avenir is a Quebec foundation, supported by 17 Universities, that distributes 33 prestigious grants totalling \$115,000, to student projects that contribute to their community and the advancement of society. At the event the students were presented with certificates that recognized their outstanding achievements. *continued on page 4...*

High School Students Learn to Tread Lightly

Students of Trafalgar School for Girls in Montreal, are stepping a little more lightly these days as a result of an educational program, developed by students in the McGill School of Environment (MSE), to inform youth in Montreal about the “weight” of their ecological footprint. Supported by a generous gift from an anonymous donor, four MSE students, Phelps Turner (Environment and Development), Myriam Broué (Renewable Resource Management), Suzanne Higgs (Biodiversity and Conservation), and April Kinghorn (Ecological Determinants of Health in Society), worked with MSE Program Coordinator, Pete Barry, and a PhD student from the Faculty of Education to plan a series of exercises to help students see how their

resources that went into making each product. This amounts to the total, individual space we use on the earth—or the size of our ecological footprint. Students were very eager to calculate the size of land needed in order to support their individual lifestyles. Over the course of three weeks the students learned that the



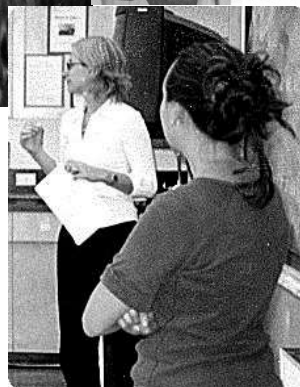
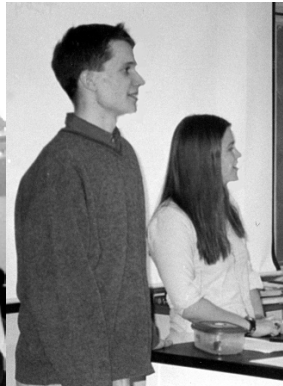
ecological footprint is not an abstract idea but that each person, through normal, everyday consumption, takes up actual space upon the earth. An analysis of these footprints showed that they are spread across the globe, because most of us consume food and other items produced outside of Canada.

Through the series of exercises, the students learned that measuring one’s ecological footprint is very important. Due to the rapid increase in the world’s population, there is a real danger of depleting the earth’s resources faster than they can be renewed. Hence, the students were urged to start

thinking now about the impact of their consumer choices on the planet, and were encouraged about ways in which they could “tread” more gently. Some examples of their suggestions were: to walk, rather than drive, whenever possible; to conserve water by taking short showers instead of baths; and to turn off lights when they are not in use.

The success of this year’s project has been so great that the MSE hopes the Program means that more Montreal youth will be “stepping” lightly into the future.

To calculate your own footprint, visit www.mse-research.mcgill.ca/ecofootprint.



daily life has a real impact on the earth’s resources.

The high school students, who were the first to receive these newly developed lesson plans, were extremely responsive to the project. The purpose of the exercise was to show that everything we consume can be traced back to the natural

Photos: (left) Phelps Turner & Students (right) Phelps Turner & April Kinghorn (bottom right) Suzanne Higgs & Myriam Broué.

continued from page 3...

During the past year, BAGBUSTERS has worked hard to inform the McGill community about the environmental damage caused by plastic bag waste. Last semester, they headed a week-long campaign when they sold over 500 reusable cloth grocery bags. Still more important, Ali-Khan explains, is “spreading awareness and promoting the ethic of re-using old plastic bags.” Kneeskern points out that, less than 10% of plastic bags are recycled, because most bags are contaminated by the time they reach the recycling box. “The mission of BAGBUSTERS”, says Lapointe, “is to spread awareness of these facts and to get people to stop generating unnecessary waste. This is an expanding ethic” she explains, “which opens the door to a greater environmental consciousness.”

To learn more about BAGBUSTERS, e-mail Mark at raindogfalls@yahoo.com.



BAGBUSTERS: Mark Kneesker, Farrah Ali-Khan, Melanie LaPointe, Carolyn Ross & Maryse Bourgault

Touring the *Earth from Above*

On a beautiful early September evening, the MSE welcomed 35 donors, friends and alumni of the School to take part in a walking tour of Yann Arthus-Bertrand's breathtaking outdoor exhibition of aerial photographs, "Earth From Above". The event proved to be an excellent opportunity to pay tribute to the support given by donors to the School over the past four years, as well as to enhance awareness about some of the environmental issues documented by Arthus-Bertrand.

"Earth From Above" is the product of over 10 years of photojournalistic research conducted in 85 countries. The collection of 120, 6 x 4 ft. prints, highlighting different aspects of the planet, were taken at altitudes from 30 to 3,000 meters. Professors Arun Agrawal (MSE/ Political Science), Madhav Badami (MSE/ Urban Planning), and Renée Sieber (MSE/ Geography) each guided a group through a selection of the awe-inspiring photographs.

Prof. Badami kicked off his tour with Arthus-Bertrand's bird's eye view of a worker from the Ivory Coast resting on a mound of freshly picked bails of cotton. He then moved on to a photograph of a grounded boat on the drastically dried-up shore of the Aral Sea in Kazakhstan, identified as one of the greatest ecological disasters of our time. He explained that the link between the two photographs was that the Aral Sea lost nearly 50 percent of its area and 75 percent of its water volume due to an irrigation network built for the cultivation of cotton in the region. The resulting increased salinity of the sea caused the disappearance of more than 20 species of fish. Furthermore, the salt carried by the wind to the shore has burned all the

vegetation within a one hundred mile radius, contributing to the increased desertification of the environment.

The link made by Prof. Badami illustrates the trans-disciplinary approach upon which the MSE has been founded. As Professors Colin Duncan (MSE/History), Frédéric Fabry (MSE/Atmospheric and Oceanic Sciences), Gregory Mikkelsen (MSE/Philosophy), and Lisa Sideris (MSE/Religious Studies), floated in and out of the various groups, this interdisciplinary approach was even more evident. Intrigued by the rich discussions taking place, a few bystanders joined the groups as they wove through the breathtaking billboard-sized photographs.

All tour groups reconvened at the MSE, joined by Interim Director Marilyn Scott and Professors Sylvie de Blois (MSE/Plant Science) and Rebecca Hardin (MSE/Anthropology) to continue their discussions about the



thought-provoking photographs over an informal wine and cheese reception. The evening event provided a wonderful opportunity for donors, friends and alumni of the MSE to get to know each other and to meet some of McGill's newest academic leaders.

Photos: (top) Prof. Arun Agrawal & Guests, (middle) Guests at the Reception, (left) Prof. Renée Sieber & Guests

News from the Development Office

The first half of this year has brought an influx of Alumni and Friends renewing their financial support MSE—twice as many as last year at this time.

Generosity from Alumni and Friends helps the MSE enhance its educational program to improve the experience of our students.

Last year, annual gifts to the School enabled students to attend conferences outside of Montreal, meet with guest lecturers, and organize events with their peers.

This year, the MSE hopes to raise additional funds for much needed scholarships and Field Study Semester travel bursaries for our students.

Support from Alumni and Friends helps to strengthen McGill's reputation as one of the top Universities in North America. **Thank you** for your generosity.

For more information about gifts to the MSE please contact **Sari LaBelle** at (514) 398-8977 or sari.labelle@mcgill.ca.

Upcoming Events:

Beatty Memorial "Rachel Carson Commemorative Series" presents **Herman Daly** on ecological economics.

Thursday, March 26, 7:30 p.m.

Stephen Leacock Bldg. Rm. 132

MSE Opens Doors at Homecoming

The MSE opened its doors on both McGill campuses in September, during Homecoming Weekend. The two events provided opportunities for McGill Alumni to learn more about what the new generation of McGill faculty and students and alumni are doing to keep the McGill tradition of academic excellence strong.

On Friday afternoon, Professor Anthony Ricciardi (MSE/Redpath Museum) launched the Open House on the downtown campus with a talk about the global economic, ecological, and health implications associated with the rapid rate with which invasive species are crossing international borders – a phenomenon he referred to as “global swarming”. Prof. Ricciardi cited many significant examples, including the recent spread of the West Nile virus into Canada and the attacks on spruce trees in Halifax by invading European beetles. Each case demonstrated the need for Canada to develop biosecurity measures to anticipate, detect and intercept invaders before they can become established. Prof. Ricciardi was recently awarded a research grant by the Quebec government which will allow him to continue to study the spread and impact of invasive species in freshwater ecosystems.



Prof. Joann Whalen (MSE/Natural Resource Sciences) made a presentation that was the highlight of the Saturday afternoon Open House at the Macdonald Campus. Alumni came from far and near to hear her speak about her research into the impact of earthworms on soil fertility. Previous research linking the presence of earthworms to soil health has been conducted in controlled laboratory or greenhouse conditions. Prof. Whalen's research is conducted on intensively-managed agricultural soil. Prof. Whalen explained that this research environment allows her team to take into consideration a variety of interconnected



variables, such as weather conditions and tillage practices affecting crop production, that cannot be simulated in the laboratory. Prof. Whalen hopes that her research will lead to conclusive evidence about how earthworms interact with other elements in the agro-ecosystem to contribute to soil health. Ultimately, this could result in a decrease in fertilizer use, which would contribute to long-term agro-ecosystem sustainability.

Both Open Houses presented a wonderful mix of recent and long-standing Alumni enthusiastically exchanging tales of their experiences at McGill.

Photos: (top right) Prof. Anthony Ricciardi, (bottom left) Prof. Joann Whalen & Guests

For information on more upcoming events, please visit our website: www.mcgill.ca/mse/.