

IRIS Annual Report 2009



Institute for Research and Innovation in Sustainability

York University – September 2009



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1. DIRECTOR'S MESSAGE

The older one gets, the faster time goes by, and I am no exception! The period July 1 2008 through June 30 2009 was the third year of the three-year term that I signed up for, as Director of IRIS, and it flashed by. Back in 2006, I was very open with VPRI in saying, that by the end of this three-year period, I would have an idea of whether a sustainability research institute at York was sustainable, and that I was prepared to be brutally honest in stating my opinion on this point. IRIS is, after all, York's second incarnation of a sustainability-themed ORU (organized research unit). Well, my prognosis was so positive, that I signed up for a consecutive two-year term, and will, by 2011, have served the standard five-year administrative term, albeit, in two chunks. At the very least, I have resolved for myself, the inherent tensions and contradictions that many people find emerging from the all-encompassing "motherhood and apple-pie" nature of sustainability, to the point where everyone agrees it's a good thing, but does little, other than saying that we *should* be sustainable.

Other people besides me were asking: should IRIS do international sustainability research or lead efforts to increase campus sustainability? To an ecologist accustomed to carrying out research that is multi-scale, once these conflicting, "everything including the kitchen sink" aspects of sustainability were described, I didn't have too much trouble believing that "we can and should engage with them all". To me, the challenge was to operationalize how this could be. The best way to do this was, I believed, to look at what IRIS could and did do from 2006-2008, and then build on the strengths. The other very useful thing was to ask myself the following question every day: "what does a university-wide ORU do that is distinct from departmental and faculty-based research endeavours?" And goodness knows, lots of other people were also asking this!

In June, with the assistance of David Sheridan, we were able to do some fun blue-sky visioning and to engage in strategic planning, and setting objectives. This past year, we organized a conference, "*Ecojustice: how will disenfranchised peoples adapt to climate change?*", held seminars, facilitated and helped to administer the course "*Design for Sustainability in the Built Environment: Interactive Workshop*", created opportunities for graduate students to engage in sustainability research, and participated in two large multi-million dollar research grant applications – both a SSHRC CURA and a SSHRC MCRI. And that's just the tip of the iceberg. When Kevin McKague, Exec Member and student member of York's Board of Governors, dropped by the office at the end of the summer to ask what we had been up to, he probably did not expect to hear a 30-minute monologue about IRIS activities. "You've been busy" the poor chap said afterwards.

In the past three years, I have discovered who our pillars of support are, and I thank you for your devotion to what is, truly, a very amorphous entity. In addition to our enthusiastic student and NGO members, there are key supporters of IRIS among York faculty and staff – and you are, aside from your service to IRIS, all very busy people, and leaders in your own departments and faculties. I hope that, in the next two years, you will see all the time and effort that you have expended on IRIS' behalf, paying off, on both a personal and institutional level. As for me, I am delighted that we obtained Observer Status for York University at the upcoming COP15 of the United Nations Framework Convention on Climate Change in Copenhagen. In 2008, I would never have imagined this, even in a blue-sky visioning workshop.

Dawn Bazely

2. MANDATE, VISION AND GOALS

Our mandate, vision and goals, which came out of the IRIS Executive facilitated planning and strategy workshop on June 3, 2009, in response to recommendations from our SCOR Review are as follows.

MANDATE

IRIS promotes practical sustainability solutions that encompass environmental, social and economic considerations at local, regional and global scales. Operating as a leading edge interdisciplinary university-wide research institute, IRIS is a hub for sustainability-related activities at York University. In this role we bridge internal and external interests through a policy of inclusivity, recognizing sustainability as a universal goal.

VISION

IRIS is a leader in the creation of a culture of sustainability within and beyond York University through practical, collaborative and interdisciplinary research and innovation driving change.

GOALS

1. Provide leadership, integration and dissemination of interdisciplinary research related to sustainability.
2. Establish a “next generation” visible and collaborative green curriculum at York University.
3. Serve as a leading source for policy and decision makers on a variety of sustainability issues which reflect the current interests of affiliated faculty and fellows.
4. Engage students, staff and faculty in campus sustainability research and innovation projects that include pursuing carbon neutrality and implementing renewable energy to reduce York’s environmental footprint.
5. Make IRIS an accessible jumping off point for people both within and outside of the York community to find out about sustainability research and related activities
6. Engage the broader community to effect change on sustainability.

3. ORGANIZATIONAL STRUCTURE AND MEMBERSHIP

EXECUTIVE BOARD

The Executive Board’s mandate is to approve the Institute’s policies, procedures, budgets, annual reports, and strategic plans and oversee their implementation. The IRIS Executive Board is chaired by the Director (ex officio) and is comprised of the Coordinator (ex officio); Core Faculty; up to four Senior Fellows; up to four Junior Fellows; ideally for a total of 15 members (based on decisions made in June 2009 at our Strategic Planning session). In September 2009, we have 23 members (3 staff, 12 Core Faculty, 5 Senior Fellows and 3 Junior Fellows), as we have not yet fully implemented our policies and procedures on governance. The Executive Board members are currently all appointed by the Director. Core Faculty, Senior and Junior Fellow

Board members are to serve two-year terms under our new governance structure. The Director is responsible for ensuring that the terms of approximately half of the Board members in each category expire each year. Over the next year, terms will be discussed with all board members. There is, at present, no limit to the number of terms a Board member may serve.

During 2008-2009, the IRIS Executive met seven times: April 29, June 17, July 13, September 22, October 21, 2008 and February 23, and June 3, 2009. Meetings in November and January were cancelled due to the strike. The Executive also formed three committees that did work prior to the facilitated strategic planning sessions. These were: governance, mandate and vision.

The following served on the IRIS Executive during 2008-2009.

<i>Name</i>	<i>Affiliation</i>	<i>Membership</i>
Abitbol, Eric	Associate Fellow	Senior Fellow
Alsop, Vanessa	MES student, FES	Junior Fellow
Arsenault, Nicole	Manager, Transportation Services, CSBO	Senior Fellow
Bazely, Dawn	Director IRIS, FSE	Staff
Bell, David	Chair, Learning for a Sustainable Future	Senior Fellow
Daugherty, Howard	Faculty, FES	Core Faculty
Dubreuil, Annette	IRIS Coordinator	Staff
Etcheverry, Jose	Faculty, FES	Core Faculty
Etkin, David	Faculty, Atkinson	Core Faculty
Glassman, Steve	Director Printing and Bookstore Services, CSBO	Senior Fellow
Gould, Arlene	Faculty Associate	Core Faculty
Henriques, Irene	Faculty, Schulich School of Business	Core Faculty
Leithwood, Melissa	IRIS Coordinator, PhD student, Queen's	Staff/Junior Fellow
McKague, Kevin	PhD student, Schulich	Junior Fellow
Morris, Tony	Graduate Student, IRIS Coordinator	Staff/Junior Fellow
Podur, Justin	Faculty, FES	Core Faculty
Psathas, Helen	Senior Manager, Environmental Design and Sustainability, CSBO	Senior Fellow
Rahder, Barbara	Dean, FES	Core Faculty
Rawat, Rajiv	Associate Fellow, webmaster	Staff
Schoenfeld, Stuart	Faculty, Glendon	Core Faculty
Schwartzberg, Pam	Executive Director, Learning for a Sustainable Future	Senior Fellow
Smith, Andrea	Invasive Species Post-Doc, IRIS	Staff
Victor, Peter	Faculty, FES	Core Faculty
Watson, Andrew	PhD student, LA&PS	Junior Fellow
Winfield, Mark	Faculty, FES	Core Faculty
Wood, Stepan	Faculty, Osgoode Hall	Core Faculty

ADVISORY BOARD

At this time IRIS does not have an external advisory board. However, we have had discussions of re-instating an advisory board, and have had conversations with Chuck Hantho (former Chair of York University's Board of Governors) about him acting as chair. The function of the advisory board would be to connect IRIS with the broader community and the range of views and ideas about the research needs of community-based sustainability initiatives.

MEMBERS

At the heart of IRIS are the people who collectively make it work. IRIS has four membership categories: the administrative staff of the Institute, Core Faculty, Senior Fellows and Junior Fellows. These categories cut across IRIS's core constituencies of faculty, students, staff, and members of the broader sustainability community.

STAFF

Administrative staff are those individuals employed on a full- or part-time basis by the Institute to develop and administer Institute projects and activities. The Institute has four administrative staff positions at present, plus a post-doc position.

- Director: Dr. Dawn Bazely (also Associate Professor, Department of Biology), 3-year term commencing 1 July 2006, renewed for an additional 2-year term 1 July 2009.
- Coordinator: Annette Dubreuil (May 2009-present), Tony Morris (September 2008-April 2009), Melissa Leithwood (May 2008-August 2008)
- Project Manager: Annette Dubreuil (May 2008-April 2009)
- Webmaster: Rajiv Rawat
- Invasive Species Post-doc: Andrea Smith

CORE FACULTY

Core Faculty are faculty members of York or another university, engaged in sustainability-related research or innovation, who are integrally involved with the activities of the Institute, including serving on the Executive (indicated with an asterisk). The following are IRIS' active 2008-2009 Core Faculty:

- Faculty of Fine Arts
 - Arlene Gould* (WGBC Summer School Course Director)
- Faculty of Liberal Arts and Professional Studies
 - Adrian Shubert (Ecojustice Conference Steering Committee and Conference founder; former AVP International)
 - Carla Lipsig-Mummé (CURA application Principal Investigator: Work in a Warming World)
 - David Etkin* (Atkinson)
 - Gabrielle Slowey (GAPS Project)
 - Richard Saunders (Ecojustice Conference Steering Committee, Chair of the South African session)
 - Sheila Embleton (Ecojustice Conference supporter and founder; former VP Academic)
- Faculty of Environmental Studies (FES)
 - Barbara Rahder* (Dean)
 - Ellie Perkins (Ecojustice Conference Steering Committee, Chair of the Brazilian session, and COP 15 Side Event)
 - Howard Daugherty*
 - Jim MacLellan (Ecojustice Conference Steering Committee)
 - Jose Etcheverry*

- Justin Podur*
- Kaz Higuchi (Ecojustice Conference Steering Committee)
- Mark Winfield*
- Martin Bunch (Ecojustice Conference Steering Committee, Chair of the Indian session)
- Peter Victor*
- Glendon
 - Stuart Schoenfeld*
- Osgoode Hall
 - Stepan Wood* (Co-applicant on Work in a Warming World, governance committee)
- Schulich School of Business
 - Irene Henriques* (Co-applicant on Working a Warming World, vision and mandate committee)

SENIOR FELLOWS

Senior Fellows are individuals, based at York or elsewhere, engaged in sustainability-related research or innovation, who maintain a substantial relationship with IRIS but do not fall into the category of Core Faculty or Junior Fellow. They may include faculty, post-doctoral fellows, staff, professionals, visitors to the Institute, and people working in government, the private sector or the voluntary sector. Executive members are indicated with an asterisk. The following are IRIS' active 2008-09 senior fellows:

- Learning for a Sustainable Future (Community Partner in Work in a Warming World CURA application)
 - David Bell*, Chair
 - Pam Schwartzberg*, Executive Director
- York University
 - York International
 - Carol Irving (WGBC Summer School; York International)
 - Campus Services and Business Operations (CSBO)
 - Anthony Barbisan, Director of Food Services (editor on the Food Report)
 - Helen Psathas*, Senior Manager, Environmental Design and Sustainability
 - Nicole Arsenault*, Manager, Transportation Services, CSBO (Vision and Mandate Committee, Speaker's Series Talk: Sustainable Transportation for the GTA)
 - Steve Glassman*, Director Printing and Bookstore Services (Governance Committee, Carbon Offsets project)
 - IRIS
 - Cecilia Tagliavia (UFORE, Invasive Species in NWT projects, and editor on the Food Report)
 - Thomas Morel (Community Member Volunteer, UFORE)
 - Faculty Members engaged in sustainability research at York University
 - Brenda Longfellow, Faculty of Fine Arts (Documentary Director of "[Weather Report](#)" shown at the Ecojustice Conference)

- Other Organized Research Units
 - Alicia Filipowich, YCAR Coordinator (Ecojustice Conference rapporter)
 - Afsan Chowdhury, (Ecojustice Conference Synthesis Discussion co-chair, Documentary Director of “[Does Anybody Care if Bangladesh Drowns?](#)” shown at the conference)



JUNIOR FELLOWS

Junior Fellows are graduate and undergraduate students of York or another university who engage in IRIS-led or IRIS-supported projects. Junior Fellows are appointed by the Director for a two-year term or a shorter term reflecting the expected duration of their substantial relationship with the Institute, i.e. Graduate Assistantships, Work Study program, RAY program, or simply volunteers. The 2008-2009 Junior Fellows include:

- Alana Kronstal – MA Student, University of Victoria (GAPS Project)
- Andrew Tanentzap – PhD Student, Oxford (GAPS Project, Deer)
- Andrew Waston – PhD Student, Faculty of LA&PS
- Ashley Royle – Graduate Assistant, MES Student (UFORE project)
- Caitlin Gascon – Undergraduate student (Volunteer, Food project)
- Christie Cestra – MSc student, Biology (Deer project)
- Consuelo (Volunteer, Ecojustice Conference)
- Dominika Czerwinska, – Graduate Assistant, MES Student (Speakers Series)
- Gesseca Goss – PhD Student, Biology (GAPS Project)
- Holly Ouellette – Undergraduate student (Volunteer, Food project)
- Isabella Jaramillo – Undergraduate student (Volunteer, Food project)
- Jennifer Jew – Graduate Assistant, MES Student (Ecojustice Conference)
- Josephine Mo – Undergraduate Work Study program
- Julia Christensen – PhD Student, McGill University (GAPS Project)
- Kevin McKague – PhD Student, Schulich School of Business and Board of Governors
- Laura Zeno – Undergraduate RAY program
- Lorenzo Varga – LA&PS student (Volunteer, UFORE)
- Lori Dagenais – Undergraduate student (Volunteer, Food project)
- Meagan Heath – MES student (Volunteer, Food project)
- Milissa Elliott – MSc Student, Biology (GAPS Project)
- Nora Saona – PhD Student, Biology (GAPS Project)
- Paul Marmer – MSc Student, Biology (GAPS Project)
- Pratyusha Muskula – Undergraduate Work Study program
- Tony Morris – Graduate Assistant, MES Student (Coordinator, Food project)

In addition, IRIS acknowledges the volunteer work of all other student volunteers, including those who did tabling in Vari Hall and at Glendon for the Food report. To read all our member profiles, please visit: <http://www.iris.yorku.ca/our-people/>

4. ACTIVITIES OF THE UNIT

Overall, in 2008-09 IRIS was involved in research projects covering a range of spatial scales: York-related projects (Campus Sustainability); pedagogy initiatives (International Summer School); regional projects (Trees and Deer; Invasive Species); national (CURA application); and international contexts (IPY GAPS). Finally, we mention our stakeholder engagement and innovation initiatives, including conferences (Ecojustice Conference), speakers series, and websites.

CAMPUS SUSTAINABILITY INITIATIVES

CARBON OFFSETTING PROJECT

Following the success of the course kits offsetting project (a collaboration between IRIS, the University Bookstore, and service provider Zerofootprint; now marketed by YORKWISE) and the publication of “What Do York Students Think About Climate Change?: Report on Results of Our Carbon Offsetting Survey”, an IRIS conducted survey and report, we continue the project to “institutionalize” carbon offsetting at York University. In April 2009, Annette Dubreuil, Dawn Bazely and Steve Glassman (IRIS Executive member and Director of the York University Bookstore, Mailing & Printing Services), met with Angela Zeno and Smita Shah from Research Accounting, and Melanie King from Procurement. This meeting culminated in the creation of an account code (#457400) which allows the University to track carbon offset purchases (NB – in dollar amounts, not tonnage).

In May 2009, Annette, Dawn and Steve also met with Brad Cochrane, Director of Energy, and Helen Psathas, Senior Manager, Environment and Sustainability, to discuss possibilities for utilizing carbon offsetting, either purchased from external providers, or internally through an informal “York University Sustainability Fund” which would fund energy retrofit and conservations projects. In follow-up to this discussion, Annette assisted Brad with the Net Present Value (NPV) calculation of a water conservation project, as part of analysis used to determine what Sustainable Energy Funds should be applied for, from the City of Toronto, for energy conservation projects on campus. These steps are just a few more steps on the road to reducing the carbon footprint of York University.

UFORE – URBAN FOREST EFFECTS MODEL

In the summer of 2007 IRIS initiated a project addressing the tree canopy of York University. Like all urban forests, the trees on campus provide many benefits, such as increased energy efficiency, aesthetics and pollution abatement. However, the urban environment also presents substantial stresses, including soil compaction, drought and disease. As such, in order to sustain and improve the ecological integrity of the University’s tree canopy we must first understand its structure and components, and in doing so, IRIS looked to UFORE:

the Urban Forest Effects Model. The UFORE model was developed by the United States Forest Service as a computer model for assessing the carbon sequestration capability of an urban forest using specific measurement protocols. Over the course of 2007 and 2008, IRIS researchers



initiated a complete inventory of the trees on campus collecting data on type of species, tree diameter, height, and plot size. The inventory included sample plots in each of the campus woodlots: Boyer woodlot, Danby woods, Boynton woods, Osgoode woodlot and Saywell woods. Subsequently, the UFORE computer model has analyzed the data and members of IRIS are finalizing their report. It will be released in the fall of 2009.

FOOD SUSTAINABILITY

Early in the summer of 2008, consultations began between IRIS and the management of food services at York about how we can introduce more sustainable food practices into the delivery of services at the various eateries on campus. From the beginning, it became clear that before proceeding, it would be necessary to understand the way food is managed at York University – which is very complicated and decentralized! The ultimate intention was to assist the management of York’s Food Services in any research they needed conducted as well as researching what other universities have done and the options available for changing University practices towards a more sustainable path. Upon building a rapport with the management of York’s Food Services, IRIS members decided to conduct another survey, this time into the attitudes and choices around food of members of the York community. The survey was completed in April of 2009 with over 1200 members of the York community responding. Analysis of the results is now complete, with the final report will be released in mid September 2009. The report includes the research into the environmental impacts of food production and consumption, debate around the pros and cons of available options, the survey results, and recommendations for the University administration.

The plan for next year (2009-2010) is to focus our work on the waste impacts of food, and the larger issue of waste in general. This will include e-waste, and build on some preliminary work done regarding cell phone recycling through YORKW!SE, which included conversations between IRIS, York University and the Toronto Zoo on launching a cell phone recycling program at York using the gorilla habitat protection program ECO-CELL. The 2009-10 campus sustainability initiative will include market research on how to engage the York population in energy conservation and proper waste disposal, in partnership with CSBO who is leading the creation of a Building Environmental Ambassadors program, after the successful “Res Race to Zero”, which followed a similar model and resulted with energy savings of up to 26%!

GLENDON

Students at Glendon have also been leading a number of food initiatives that IRIS has supported. In the first initiative, students, including Pier-Bernard Tremblay, are working to open a student run cooperative named L’Unik Café, due to open in September 2009. The second initiative, led by Darnel Harris, involves a proposal to utilize local food production, with a focus on organic farming and “exotic” heirloom varieties, to showcase the Glendon grounds, and to utilize this focus to catalyze the maintenance and protection of the Glendon forests. Students from both initiatives worked to conduct our food survey, and in return we are supporting them with the results and acting as facilitators as needed to move forward their respective projects.

BLUEPRINT FOR SUSTAINABILITY

IRIS: Campus Hub for Sustainability Research is the publication of our research on how to make York University a sustainable campus, largely based on the work of RA Nadine Gudz during 2007-2008. While the report is not a blueprint, it is a point of departure and debate on how York University should work toward

achieving campus sustainability. The report is intended to be a living document, with new versions as the re-conversation moves along. The report describes the unique role that IRIS plays in providing an interdisciplinary space to house an on-going dialogue on sustainability, while presenting a framework that can be used to guide York University as it moves forward with its commitments to campus sustainability.

PEDAGOGY

INTERNATIONAL SUMMER SCHOOL IN GREEN BUILDING DESIGN

In May of 2008, York University and the World Green Building Council signed a Memorandum of Understanding. IRIS largely facilitated this agreement. This MOU led to the development of an International Summer School in Green Building design titled “Design for Sustainability in the Built Environment: Interactive Workshop” which was hosted by York University from June 22 to July 10, 2009, run through FES, and coordinated and taught by IRIS Executive member Arlene Gould. The funding for this summer school was generously provided by the World Green Building Council, Ontario Power Authority, Toronto Regional Conservation Authority, Earth Rangers, and York University, including IRIS and York International.

The purpose of this summer school was to bring together university undergraduates from around the world in order to foster literacy in green building strategies in an international context. The program feature unique interactive workshops, practice design methodologies and tools, collaboration with students from around the world, field trips and cross discipline design charrettes, guest lectures from experts in green buildings, with some classes held at the LEED-Gold Earth Rangers Centre.



After the success of this first year, proving that inter-disciplinary undergraduate courses that draw students from multiple fields is possible, York University and the World Green Building Council are now discussing the delivery of next year’s course. We are looking at integrating internships to further enhance the student experience, and addressing the funding model to make the course financially sustainable.

The mindmaps that the students created as part of the course will be displayed sometime in fall of 2009.

SUSTAINABILITY COURSE FOR HUMAN RESOURCE PROFESSIONALS

IRIS has led the initiative to develop a non-degree course for human resource professionals to educate them about sustainability. To date strategic planning meetings have been held and the Atkinson Continuing Education program, now part of the Faculty of Liberal Arts & Professional Studies (LA&PS), has agreed to host the program. Course development work will be our main objective this fall, as we re-activate this project, which unfortunately was greatly affected by the strike last fall.

REGIONAL INITIATIVES

TREES AND DEER

Through a grant from the City of London, Ontario, IRIS members have been assessing the effects of white-tailed deer browsing on different vegetation community types in three environmentally significant areas (ESAs) in the City of London. The ESAs include the Sifton Bog, Medway Valley and Meadowlily Woods. The Sifton Bog is the main focus of this study, with the two other ESAs being used as comparison sites. Deer enclosures have been built on all of the sites and monitoring of effects is still ongoing. The project is now entering its third and final year.

INVASIVE ALIEN SPECIES

ONTARIO

Post-doctoral fellow Andrea Smith is working on invasive alien species (IAS) research in Ontario. This research is adopting an interdisciplinary approach to examine current and potential future IAS threats, their ecological and socio-economic impacts, and our preparedness to prevent and manage IAS in Ontario. Andrea has recently submitted the first paper to come out of this research titled “Missing the Boat on Invasive Alien Species: A Review of Post-Secondary Curricula in Canada”. This manuscript on Invasive alien species (IAS) details how higher education can contribute to the development of effective strategies for dealing with the IAS problem, by examining the extent of such training in Canada by reviewing undergraduate and graduate university curricula at all 94 member institutions of the Association of Universities and Colleges of Canada for IAS content. The result: degree and diploma programs focusing on IAS issues are lacking at Canadian post-secondary institutions. Furthermore, few courses are devoted solely to IAS, and those that are typically adopt an ecological perspective. The recommendation: that interdisciplinary university curricula on IAS in Canada be adopted. Several international educational programs on IAS are presented as case studies.

NORTHWEST TERRITORIES (NWT) – ENVIRONMENT AND NATURAL RESOURCES

Local people can play an important role in preventing the potentially negative effects of invasive plants and insects by detecting their presence. IRIS was asked to develop a protocol by Dr. Suzanne Carrière, biologist at the Environment and Natural Resources (ENR) Department in the NWT. In order to determine the ways in which communities would like to report these species, based on our experience with the human security



framework in the GAPS project, we suggested to ENR that communities should be consulted before a protocol was built.

Therefore, community consultations were held in October 2008 in NWT for three and a half weeks. Annette Dubreuil (pictured above in Inuvik) and Milissa Elliott (left), met with community members in Fort Good Hope, Fort Simpson and Inuvik. Using



surveys they asked about their knowledge of invasive species. The consultations also included a discussion of the interest in local food production using greenhouses or community-gardens. Cecilia Tagliavia and Tony Morris did background research on invasive species protocols for this project. Together, with the survey data

collected, a draft protocol was developed for ENR that allows community-based reporting of the arrival of invasive plant and insect species. This protocol can be tailored to the preferences of each community.

NATIONAL

CURA APPLICATION: WORK IN A WARMING WORLD

IRIS assisting Carla Lipsig-Mummé with her Community University Research Alliance (CURA) application for the environmental special call. The project titled Work in a Warming World (www) will look at how climate change will affect work and employment in Canada. With 23 researchers and 20 community partners, the project will prove to be innovative as it is a new area of study. If successful, the project will be housed by iris.

INTERNATIONAL

INTERNATIONAL POLAR YEAR

2006-2011. Funding of \$1.2 million for the project lead Gunhild Hoogensen, and her team at the University of Tromsø in Norway, and \$500,000 for the Canadian team at York, McGill and Victoria Universities, led by Dawn Bazely. The Canadian GAPS project, “Impacts of oil and gas activity on peoples in the Arctic Using a Multiple Securities Perspective” or Gas, Arctic Peoples and Security, is focused on plant movements along the proposed Mackenzie Valley Pipeline, hidden homelessness, mental health workers, and



governance issues. These projects includes graduate students at York: Milissa Elliott, Nora Saona, Paul Marmer and Gesseca Goss. The project has created a community newsletter each year - see www.ipygaps.org and the Appendix. By exploring the effects of oil and gas activity, and its interactions with climate change, on the human security of Arctic peoples, GAPS will further understanding and knowledge of 1) the science of climate change impacts and adaptation, and 2) the health and well-being of Northern communities.

Now in its fourth year of this five year project, the GAPS team is doing their final analysis on their data, with masters students graduating over the next year. Final results will be presented at a workshop to be held in Yellowknife next summer.

STAKEHOLDER ENGAGEMENT

ECOJUSTICE CONFERENCE

April 16 and 17, 2009. *Ecojustice Conference: How will Disenfranchised Peoples Adapt to Climate Change?* This two-day conference at York University brought together non-governmental, academic, and government speakers from India, South Africa, Brazil, and Arctic Canada to discuss strategies for climate change adaptation and mitigation. The steering committee included faculty from FES (Ellie Perkins, Martin Bunch), Arts (Richard Saunders), IRIS (Dawn Bazely) and York International (former AVP Adrian Shubert). Funding



came from Environment Canada (to Professor Kaz Higuchi and Jim MacLellan) who both also served on the steering committee, the International Polar Year GAPS (Gas Arctic People and Security) Project and former VP Academic Sheila Embleton. The conference proceedings have published on the IRIS website at <http://www.iris.yorku.ca/conference-strengthening-the-ecojustice-movement/presentations/>, including videos, podcasts, transcripts and pictures. The steering committee is now working on the synthesis a

document for the conference, as well as creating articles to publish its findings.

Pictured above, the Ecojustice Conference speakers and steering committee.

COP 15: UNFCCC CONFERENCE OF THE PARTIES - COPENHAGEN

As a result of the Ecojustice Conference, IRIS is now working with the Ellie Perkins (FES) and Miriam Duailibi from ECOAR, one of our Brazilian speakers, on a side event for the Conference of the Parties (COP 15), being held in Copenhagen this coming December. York University and ECOAR have both been granted observer status. See <http://maindb.unfccc.int/public/ngo.pl?search=Y>

2008/2009 The Sustainable Built Environment Speaker Series

- October 29, 2008 – **Bringing the Green into Buildings**, *Andrew Bowerbank*, Executive Director of the World Green Building Council, and *Gabriel Draven*, President and Co-founder of Village Technologies.
- March 23, 2009 – **Tour of the Earth Rangers Building**, LEED Gold Certified building located at the Kortright Centre on the Living City Campus.
- April 2, 2009 – **Energy Conservation on Campus**, *Peter Love*, Chief Energy Officer at the Ontario Power Authority.
- April 27, 2009 – **Sustainable Transportation for the GTA**, *Chris Wong*, Director of Master Planning and Transportation Planning for the York University Development Corporation, *Jody Graydon*, Marketing Manager for Smart Commute, *Joshua Engel-Yen*, Senior Advisor of Policy and Planning for Metrolinx, and *Nicole Arsenault*, Manager of York University Transportation Services.

EVENTS SUPPORTED BY IRIS

In addition to IRIS led initiatives, IRIS has provided financial and/or administrative support for the following events over the past year:

ANNUAL ASSOCIATION OF GRADUATE STUDENTS IN BIOLOGICAL SCIENCES (AGSBS) SYMPOSIUM

IRIS financially supported the AGSBS Symposiums over the last three years. Dawn Bazely and Tony Morris also provided advice and coaching on public speaking, introductions, and event planning for student

organizers for this year's event "The Evolution of Biology at York: Past, Present, and Future" (36th Symposium).

17TH INTERNATIONAL NORTHERN RESEARCH BASINS SYMPOSIUM & WORKSHOP (NRB)

IRIS supported Kathy Young (pictured right), a geography professor, to attend the 17th NRB, in August 2009, which this year had a theme "Managing hydrological uncertainty in high-latitude environments". IRIS also supported the coffee-breaks at this symposium. The minutes, proceedings and post-meeting information can be found at <http://www.northernresearchbasins.com/nrb17.html>. The event gathered more than 69 northern hydrologists, arctic physical oceanographers and participants from across the Circumpolar North (Russia, Denmark (Greenland), Sweden, Iceland, Norway, Sweden, Finland, Canada, USA), together with countries having polar programs (Japan, England) in the Eastern Canadian Arctic for a week long northern hydrology symposium and workshop. The group travelled from Iqaluit to Pangnirtung, Nunavut and then to Kuujuaq, Northern Quebec (Nunavik) via an expedition ship operated by an Inuit owned company. The NRB group collectively felt it important that governments of all circumpolar countries be told that we know that the North is changing due to climate change (e.g. sea ice disappearance, earlier snowmelt, glacier retreat, more episodes of rain-on-snow) and that we know that it is impacting our northern citizens and has far reaching global ramifications. However, we continue to do a poor job at documenting it because of the inadequate weather and water survey networks existing in northern regions.



IRIS WEBSITE

Re-launched in September 2009, the IRIS website address is now www.iris.yorku.ca, and hosted by EthicalHosting, which means our website is powered by 100% renewable energy provided through [BullFrog Power](#) and [Planetair](#). Furthermore, the Bullfrog power is EcoLogo certified. In addition to new green web hosting, Rajiv Rawat, our webmaster, has done some updating to the look and feel of the website – adding the word IRIS into page headers, using some snazzier fonts, and most impressively, adding an awesome slideshow to the home page!

2008-2009 also saw some smaller changes to streamline the IRIS website, after major re-designs last year – namely some category condensations. This year we also added a quick links section on the right sidebar to further facilitate the navigation of the website. We continue to blog, and this year added the "Director's Blog", where Director Dawn Bazely blogs in short but informative bursts. We have, however, found that it is challenging to keep up a blog, and plan on engaging our graduate students and Executive more formally in the blogging process next year.

PUBLICATIONS ON YORKSPACE

This summer we created an IRIS Community on YorkSpace – York University's repository of research. It is a platform that enables York community members to post, organize and preserve their research online in an institutional context. The YorkSpace repository is an ideal dissemination platform as it promotes and facilitates discovery of research online through its standards-based architecture. So far we have uploaded into

YorkSpace all publications housed on the IRIS website. Next year we will work to include publications of IRIS members into YorkSpace.

COMMITTEE REPRESENTATION

- **President's Sustainability Council** was created by President Shoukri with broad representation from across the University to provide input on how to address sustainability issues on a pan-University level. IRIS has a seat at the Council and has presented our work. The IRIS coordinator also participates in the food sustainability sub-committee for the council.
- **Green Paper Working Group on Teaching Innovation and Student Learning** was created by Rhonda Lenton, and will be informing the development of the Provostial White Paper. The Vice-President Academic and Provost announced early in the summer that a White Paper will be created that intends to provide a renewed strategic vision describing where York University wants to be ten to fifteen years from now. So far the working group has met once.
- **YORKW!SE** intends to promote campus stewardship and quality of life through awareness campaigns, and by engaging students, staff and faculty in campus sustainability initiatives. IRIS has a seat on YORKW!SE and provides advice and expertise, as well as funneling projects to the organization for promotion to the larger university community.
- **Council of Research Directors** was created by the Vice President, Research and Innovation (VPRI) to bring all the Directors of the 26 different research institutes at York University to discuss common issues and ways to collaborate better and enhance the research environment at the University. In general, IRIS advocates for more inter-disciplinary research to allow for different viewpoints that are needed to tackle the worlds' complex issues. The Council of Research Directors and IRIS believe research needs to be disseminated using appropriate language for different stakeholder groups so that it might be taken up by society at large.

5. GRADUATE TRAINING ACTIVITIES/ACCOMPLISHMENTS

Students Receiving Graduate Assistantship and Research Assistantship Funding through IRIS

- **IRIS: Campus Sustainability**
Graduate Students (all MES) included Dominika Czerwinska, who organized all the seminar talks, and Tony Morris, who acted as the IRIS coordinator, and led the food sustainability initiative, once Jelena Erski departed (during the strike).
- **International Polar Year**
 - Mike Blessing – MES student; did research on food security in NWT until he departed (during the strike)
 - Milissa Elliott – MA work on invasive plants along the proposed Mackenzie Valley pipeline route in NWT. Milissa conducted field work during the summer of 2008 in Fort Good Hope, Norman Wells, Inuvik and Fort Simpson.
 - Paul Marmer – MA work on grasses in NWT and Mongolia - conducted field work during the summer of 2008 in Fort Good Hope, Norman Wells, Inuvik and Fort Simpson.

- Nora Saona – PhD work on impacts of water and nutrients on grass growth, has now submitted one of her reports on grass-endophyte-herbivore interactions in the northern Arctic.
- **Trees and Deer (southern Ontario)**
Christie Cestra – is completing her Masters degree work
- **Blueprint for Campus Sustainability**
 - Ashley Royle conducted field work measuring trees on campus for a UFORE – Urban Forest Effects model – an analysis of tree canopies, which will determine how much carbon and various pollutants are being sequestered by York’s trees. This was done through the entire fiscal year. The final report will be released shortly.
 - Nadine Gudz explored the nature of how different members of the York community view sustainability. This is related to her PhD research on communities. (Two Research Assistantships May-August 2007 totalling \$14,000). During this fiscal year, Nadine provided her final report which synthesized her RA research. This was turned into the IRIS: Campus Hub for Sustainability Research (Version 2) document.

6. PLANS AND PRIORITIES FOR 2009-2010

- Attend COP 15 and host a side event with ECOAR and the speakers from our Ecojustice conference
- Make the Ecojustice conference a biennial event
- Continue to push for campus sustainability projects by engaging the administration of the university and the York community at large.
 - 2009-10: focus on waste and engagement
 - 2010-11: focus on supply chains
- Create a publication of student led research on sustainability
- Continue to act on the SCOR recommendations.
- Create a strategic plan based on the outcomes of the facilitated planning session held in June 2009.
- Ensure that members of the IRIS Executive along with students etc. are given the opportunity to represent IRIS when attending conferences and more “public” events where they will have an opportunity to do networking, as well as to engage in community and media outreach on the topic of sustainability.
- Get more research funding, especially where there is overhead and possibilities for administrative support budget lines – there are definitely colleagues and students who can significantly develop their research activities with these modest amounts of support. We see them as complementing existing York funds such as those for internationalization, and the graduate students research costs fund (etc.).
- Seek more ways to make IRIS an accessible jumping off point for people both within and outside of the York community to find out about sustainability research and related activities.
- Finish improving the IRIS space by improving the lounge furniture.

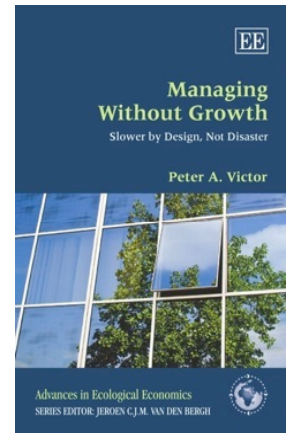
7. PUBLICATIONS

BOOKS

Victor, Peter. *Managing without Growth: Employment, Equity and the Environment* [online]. In: *Future That Works*, A; pages: 50. Carlson, Ellen (Editor). Callaghan, N.S.W: University of Newcastle, Centre of Full Employment and Equity, 2004.

Peter Victor challenges the priority that rich countries continue to give to economic growth as an over-arching objective of economic policy. The challenge is based on a critical analysis of the literature on environmental and resource limits to growth, on the disconnect between higher incomes and happiness, and on the failure of economic growth to meet other key economic, social and environmental policy objectives.

Shortly after World War II, economic growth became the paramount economic policy objective in most countries, a position that it maintains today. This book presents three arguments on why rich countries should turn away from economic growth as the primary policy objective and pursue more specific objectives that enhance well-being. The author contends that continued economic growth worldwide is unrealistic due to environmental and resource constraints. If rich countries continue to push growth, poorer countries where the benefits are more evident, will lag. Rising incomes increase happiness and well-being only up to a level that has since been surpassed in rich countries. Moreover, economic growth has not brought full employment, eliminated poverty or reduced the burden of the economy on the environment. By combining a systems approach with more conventional economic analysis, Peter Victor provides new insights into a pressing issue at the frontier of ecological economics in a way that will appeal to a wide audience.



JOURNAL ARTICLES, BOOK CHAPTERS, PRESENTATIONS

BARBARA RAHDER

Rahder, B. (2009) "Invisible Sisters: Women and Environmental Justice in Canada." In J. Agyeman, P. Cole, R. Haluza-DeLay, and P. O'Riley (eds.) *Speaking for Ourselves: Environmental Justice in Canada*. Vancouver: UBC Press. pp. 81-96.

CARLA LIPSIG-MUMMÉ

Lipsig-Mumme, C. 2009 "Trade Unions and Labour Relations Regimes: International Perspectives in a Globalizing World", in Gunderson, M., and Taras, D., Eds., *Canadian Labour and Employment Relations*, 6th Edition, Toronto: Longmans/Addison-Wesley, Pp.460-477.

Lipsig-Mummé, C. 2008 "But What About the Jobs? Negotiating Climate Change in a Warming World", *Australian Options*, #54, Spring.

Lipsig-Mumme, C. & J. Roose. 2008 "Invisible Underclass: NESB Youth and Unions, a Research

Agenda”, 22nd AIRAANZ Conference (Association of Industrial Relationists of Australia & New Zealand, Melbourne, February.

Lipsig-Mumme, C. 2008 “Face Facts: Living and Working Will be Harder in a Warmer World”, *Opinion, The Age* (Australia), 07/07/08, p. A13

Lipsig-Mumme, C. 2008 “Sorry’ speech marks birth of a new Australia”, 3/23/08 Toronto Star

Lipsig-Mumme, C. 2008 “Strategies for work in a warmer world” *The Age*, 2/25/08 p.A.11

Lipsig-Mumme, C. 2008 “Bold Innovation or Trojan Horse?” 1/14/08 *Canadian HR Reporter*

Lipsig-Mumme, C. 2008 “Adapting employment to fit a warming world”, 1/02/08 *Toronto Star*

DAWN BAZELY

Tanentzap, A.J., Bazely, D.R., Williams, P.A. and Hoogensen, G. 2009. A Human Security Framework for the Management of Invasive Nonindigenous Plants. *Invasive Plant Sciences and Management*. 2:99-109.

Tanentzap, A.J., Bazely, D.R. and Laforzezza, R. (in press) Diversity-invasibility relationships across multiple scales in disturbed forest understoreys. *Biological Invasions*.

Tanentzap, A.J. and Bazely, D.R. 2009. Propagule pressure and resource availability determine plant community invasibility in a temperate forest understorey. *Oikos*. 118:300-308.

Bazely, D.R., Tanentzap, A. J. and Heaton, M. (in press) Impacts of White-tailed deer in the Mixed Wood Plains. The Mixed Wood Ecozone Section of the *Ecosystem Status and Trends Report for Canada (Technical Section)*, A Federal-Provincial-Territorial Project of the Canadian Council of Resource Ministers

Royle, A., Tagliavia, C., and Bazely, D.R. 2009. The Value of York University’s Keele Campus Urban Forest: A small-scale application of USDA’s Urban Forest Effects Model (UFORE). Report for IRIS – Institute of Research and Innovation in Sustainability, York University, Toronto.

Tagliavia, C., Bazely, D.R., Elliott, M., Dubreuil, A., and Morris, T. 2009. Developing Options for Community-based Protocols to Detect Invasive Alien Plants and Insects in the Northwest Territories. Report for the Department of Environment and Natural Resources, Government of the Northwest Territories, Canada. Refere to contract: PM 006667.

IRENE HENRIQUES

a) Book Chapters

Henriques, I. and P. Sadorsky. 2009 “Voluntary Environmental Programs: A Canadian Perspective”, in Peter deLeon and Jorge Rivera (editors), *Voluntary Environmental Programs: A Policy Perspective*, Maryland: *Lexington Books* for the Policy Studies Organization, (In press).

b) Journal Articles

N. Darnall, I. Henriques and P. Sadorsky. 2009 “Adopting a Proactive Environmental Strategy: The Influence of Stakeholders and Firm Size”, *Journal of Management Studies*, In press.

- I. Henriques and P. Sadorsky. 2008 "Oil prices and stock prices of alternative energy companies", *Energy Economics*, 10(3), 998-1010.
- I. Henriques and P. Sadorsky. 2008 "Voluntary Environmental Programs: A Canadian Perspective", *Policy Studies Journal*, 36 (1), 143-166.
- N. Darnall, I. Henriques and P. Sadorsky. 2008 "Do environmental management systems improve business performance in an international setting?" *Journal of International Management*, 14 (4): 364-376.

JAMES IAN MACLELLAN

- MacLellan, J.I. 2009. Introduction: Climate Change Adaptation in Steps. *In Linking Climate and Impact Models to Decision and Policy Making*. Edited by A. Fenech, and J. I. MacLellan. Environment Canada, Toronto. (In Review)
- MacLellan, J.I., and Fenech, A. 2009. A Feedforward Decision Framework for Climate Change Adaptation. *In Linking Climate and Impact Models to Decision and Policy Making*. Edited by A. Fenech, and J. I. MacLellan. Environment Canada, Toronto. (In Review)
- MacLellan, J.I. 2009. Brokering the Local Global Dialectic. *In Linking Climate and Impact Models to Decision and Policy Making*. Edited by A. Fenech, and J. I. MacLellan. Environment Canada, Toronto. (In Review)
- MacLellan, J.I. 2009. Climate Change Adaptation for Neophytes. *In Linking Climate and Impact Models to Decision and Policy Making*. Edited by A. Fenech, and J. I. MacLellan. Environment Canada, Toronto. (In Review)
- Fenech, A., and MacLellan, J.I. (eds). 2009. *Linking Climate and Impact Models to Decision and Policy Making*. Environment Canada, Toronto. (In Review)
- Fenech, A., and MacLellan, J.I. 2009. The Rapid Assessment of the Impacts of Climate Change: Building Past and Future Histories of Climate Extremes. *In Linking Climate and Impact Models to Decision and Policy Making*. Edited by A. Fenech, and J. I. MacLellan. Environment Canada, Toronto. (In Review)
- Klenk, N.L., Bull, G.Q., and MacLellan, J.I. 2008. The "Emulation of Natural Disturbance" (END) Management Approach in Canadian Forestry: A Critical Evaluation. *Forestry Chronicle* (In press).
- Klenk, N.L., Hickey, G.M., and MacLellan, J.I. 2008. Using social network analysis to evaluate the social capital in large research networks: the case of the Sustainable Forest Management Network (1995-2009). (In Review).
- Klenk, N.L., G.M. Hickey, J.I. MacLellan, R. Gonzales and J. Cardille. 2009. Social network analysis: A useful tool for visualizing and evaluating forestry research. *International Forestry Review* **11**: 134-140.
- MacLellan, J.I. 2008. A Federal Case: Considering a National Framework for Climate Change Adaptation Case Studies in Canada. *In SERA North Workshop: Economics of Weather and Climate Change Meeting*. Edited by B. Mills, The Centre for International Governance Innovation, Waterloo Ontario.

KAZ HIGUCHI

- Wang, X., J. Huang, M. Ji, and K. Higuchi, 2008: Variability of Asia dust events and their long-term trend. *Atmospheric Environment*, 42, 3156-3165.
- Chan, D., M. Ishizawa, K. Higuchi, C.-W. Yuen, and J. Chen, 2008: Seasonal CO₂ rectifier effect and large-scale extratropical atmospheric transport. *Journal of Geophysical Research*, 113, D17309, doi: 10.1029/2007JD009443.

KEVIN MCKAGUE

- Branzei, O., and McKague, K. 2009 “E+Co: A Tipping Point for Clean Energy Entrepreneurship” in *Entrepreneurship: Successfully Launching New Ventures*, 3rd Edition, edited by B. Barringer and D. Ireland. Prentice Hall.
- Branzei, O., and McKague, K. 2008 “A Model of Clean Energy Entrepreneurship in Africa: E+Co’s Path to Scale. 15” in *Managing the Business of Sustainable Development in Africa: Human Rights, Partnerships, and Alternative Business Models*, edited by Ralph Hamann, Stu Woolman and Courtenay Sprague. Pretoria: UNISA Press, pp. 322-343.

RICHARD SAUNDERS

- Saunders, R. 2008, *Conflict Diamonds from Zimbabwe*, Amsterdam: Niza/Fatal Transactions, September 2009 “Crisis, Capital, Compromise: Mining and Empowerment in Zimbabwe”, *African Sociological Review* (Special Issue: South Africa in Africa), Vol.12, No.1
- Saunders, R. 2008, Co-editor (with Darlene Miller and Olojide Oloyede) *African Sociological Review* (Special Issue: South Africa in Africa), Vol.12, No.1
- “South African Corporations and post-Apartheid Expansion in Africa: creating a new regional space” (with Darlene Miller and Olojide Oloyede), *African Sociological Review* (Special Issue: South Africa in Africa), Vol.12, No.1
- Guest Editor of “South Africa in Africa”, Special Issue of *Issue E-Zine* (Africa Files, Toronto, May-September 2008: <http://www.africafiles.org/atissueezine.asp#art1>); and author of two contributions in the collection, “South Africa in Africa: Restructuring and Resistance” (Editorial), and “Painful Paradoxes: Mining, Crisis and Regional Capital in Zimbabwe”

STEPAN WOOD

- Wood, Stepan and Lynn Johannson 2008, “Six Principles for Integrating Non-Governmental Environmental Standards into Smart Regulation,” 46 *Osgoode Hall Law Journal* 345-396. 70% Wood, 30% Johannson.
- Wood, Stepan 2009, “Common Law Liability Relief” (revised and updated) in Michael B. Gerrard, ed., *Brownfields Law and Practice* (Newark, NJ: Matthew Bender, looseleaf service, various dates) ch. 5A (31,000 words)
- Wood, Stepan, ed. 2008, 46:3 *Osgoode Hall Law Journal* (guest editor, special 50th Anniversary Issue on

Environmental Law

- Wood, Stepan and Lynn Johannson 2008, "How Not to Incorporate Voluntary Standards into Smart Regulation: ISO 14001 and Ontario's Environmental Penalties Regulations," CLPE Research Paper No. 07/2008, online: Social Science Research Network, <http://ssrn.com/abstract=1105593> (23,000 words). 70% Wood, 30% Johannson.
- Wood, Stepan 2008, "Common Law Liability Relief" in Michael B. Gerrard, ed., *Brownfields Law and Practice* (Newark, NJ: Matthew Bender, looseleaf service, various dates) ch. 5A (31,000 words)
- Benjamin J. Richardson, Heather McLeod-Kilmurray, Yves Le Bouthillier and Stepan Wood, eds. 2009, *Climate Law and Developing Countries: Legal and Policy Challenges for the World Community* (Cheltenham, UK: Edward Elgar) (25% each co-editor)
- Clarkson, Stephen and Stepan Wood, *a Perilous Imbalance: the Globalization of Canadian Law and Governance* (Vancouver: University of British Columbia Press, forthcoming 2009) (50% Clarkson, 50% Wood) (125,000 words)

STUART SCHOENFELD

Publication

- Eric Abitbol and Stuart Schoenfeld 2009 "Constructing an Adaptive Regional Vision of Water Development in the Jordan River Basin" pp. 297-316 in C. Lipchin et al. (eds.), *The Jordan River and Dead Sea Basin: Cooperation Amid Conflict*, © Springer.

Presentations

- Stuart Schoenfeld 2009 "Two Peoples in a Shared Ecology: Framing Strategies and Outcomes of a Middle East Environmentalist Initiative," European Sociology Association. Lisbon, Portugal, September (with Asaf Zohar)
- Stuart Schoenfeld 2009 "Nature Knows No Boundaries?" Israel/Palestine: Mapping Models of Statehood and Paths to Peace. Toronto, York University, June.
- Stuart Schoenfeld 2009 "Minding the Common in a Conflict Zone." Canadian Sociology Association, Ottawa, May.
- Stuart Schoenfeld 2009 "Israel, Canada, the Environment and Peace: Making Connections" Association for Canadian Jewish Studies, Ottawa. June (with Galya Sipos-Randor)
- Stuart Schoenfeld 02009 "Cooperation and Barriers to Providing Ecosystem Services in the Eastern Mediterranean," NATO Advanced Research Workshop, Salve Regina University, Newport, Rhode Island

8. STATEMENT OF OPERATIONS 2008-2009

Total Revenue	275,710
Internal Funding	11,780
Government Funding	218,050
Corporate/ NGO Funding	45,880
Total Expenses	275,265
Surplus for the current year	445
<i>Carryforward from 2008-2008</i>	<i>168,461</i>
Carryforward for 2009-2010	<i>168,905</i>

Notes to the Statements of Operations: The above income statement includes the IPY GAPS project figures using its fiscal year of April 1 2008 to March 31 2009, which is offset one month from all other figures, which are for May 1 2008 through April 30 2009, as per the York University fiscal year.

Institute for Research and Innovation in Sustainability (IRIS)

**349 York Lanes, York University
4700 Keele St., Toronto, ON M3J 1P3**

T: 416.736.5784 F: 416.46.5837

E: irisinfo@yorku.ca

www.iris.yorku.ca