



DEPARTMENT OF BIOLOGY NEWSLETTER/
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Conferences and Presentations

On February 18, the Cooperative Freshwater Ecology Unit hosted a series of workshops around the theme 'Urban and Industrial Watersheds of the Boreal Shield' during its annual Sudbury Restoration Workshop. About 300 people registered, including several of Canada's top environmental scientists and experts from the United States. They discussed the environmental challenges affecting the vast array of lakes of the Canadian Shield ranging from Sudbury issues of health risk assessment from metals to forest, and lake recovery from acid rain, to the regional and national effects of climate change and invasive species on water resources in Canada.

On March 11, **Dr. Madhur Anand** gave an invited seminar at the Department of Biology, York University, Toronto, entitled "Biocomplexity scaling and its application to forest recovery and restoration."

On March 24 and 25, **Dr. Graeme Spiers** of MIRARCO and the Department of Biology, chaired a conference on 'Managing Risks from a Changing Climate: Making Adaptation Happen in Ontario' at the University of Guelph. **Dr. Peter Beckett** chaired one of the major breakout groups at the same conference. Nearly 100 experts and practitioners of climate risk management and adaptation shared information and conducted workshops to develop knowledge and the skills among the participants necessary for effectively adapting to and managing climate-related risks.

On Wednesday, March 31 and Friday, April 2, 19 seminars were presented by the Biology graduate students in the Instructional Media Room of the J.N. Desmarais Library. Under the watchful guidance of **Dr. John Gunn**, each student presented his/her thesis approach, introduction, methods and results to date. Members of the Department of Biology, committee members, and future potential graduate students were invited to attend and participate in the useful commentary period following each presentation. Topics were diverse (molecular to whole organism) and gave participants an excellent opportunity to view the various areas of research underway within the Department. Posters were displayed on the walls of the science building one week later.

Congratulations to the following students in the 4th-year Honours Program who presented talks on their research projects at Biology Day, March 13 and 14, at Nipissing University in North Bay, and to the Department of Biology, on March 19:

Jessie Allison - The common genera of fungi inhabiting the revegetated tailings at INCO, Sudbury, Ontario, Canada

Jacey Bennett - Identification of genome-specific RAPD markers useful in differentiation of rye from wheat

Jeanine Blake and **Jennifer Dick** - Snowpack characteristics along two transects extending away from a smelter complex

Pascal Bradley - Effect of hypoxia on tubulogenesis in the postnatal rat kidney

Brian Brassard - The recovery status of the forest cover in the Lake Laurentian Conservation Area, Sudbury in relation to forest mammals

Corey Burant and **Nathan Richer** - Urine scent marking during winter hunting and scavenging by red fox (*Vulpes vulpes*) in the Sudbury area

Allegra Cairns and **Sarah Dick** - The relationship between den selection, parental care and health of orphaned black bear (*Ursus americanus*) yearlings in northeastern Ontario

Matthew Carroll - Biochemical and physiological characterization of glomalin extracted from arbuscular mycorrhizal fungi

Ann Csinos - Effects of sinus worm infection on the physical condition of short-tailed and long-tailed weasels

Mélanie D'Amours et **Josée Tousignant** - Oxydation du fer par certains isolats acidophiles hétérotrophes provenant de drainage acide minier

Amand Dawson - Fish species composition comparison of the Detroit River, Ontario

Peter Fairman - Taxol resistance in THP-1 monocyte-like cells may be influenced by Raf

Stephanie Farkouh - Prevalence and intensity of sinus worm infections in short-tailed and long-tailed weasels taken near the Rouyn-Noranda ore smelters

Angie Hunda - Seasonal variation in leaf characteristics in relation to leaf lifespan in three large sedge species in Sudbury wetlands

Fahamia Koudra and **Marisa Tessier** - Effect of lipopolysaccharide on monocyte cytokine secretion transduced by MEK and ERK

Roxanne Lajambe - Affinity labelling of functionally active caspases in the apoptotic cascade of Sp2/0-Ag14 cells during L-Glutamine deprivation

Silke Laucht - Les patrons taxonomiques de diversité chez les communautés végétales en rétablissement

Matthew Mallory and **David Mancini** - The chemical and bacterial leaching of a high-grade sulfide ore by *Acidithiobacillus ferrooxidans*

Cristina Mansourian - Microbial conversion/processing of an industrial byproduct

Leo McLaughlin and **Hower Blair** - Moose, *Alces alces*, browsing behavior on *Acer rubrum* in Creighton Township

Soumya Mishra - Recovery of aerobic capacities during metal depuration in wild yellow perch (*Perca flavescens*)

Sarfraz Mohamed - Enhanced copper leaching from sulphide ore by *Acidithiobacillus ferrooxidans*

Phong Nguyen - Assessment of maximum oxygen consumption (MV02/V02max) as a predictor of postoperative complications

Nicholas Orton - Oviposition damage by the pine false webworm, *Acantholyda erythrocephala* (Hymenoptera: Pamphiliidae) and attachment of eggs to host needles

Trina Pharand - Water beetle assemblages (Coleoptera) in beaver ponds of northeastern Ontario

Alexia Presello and **Khaled Hazzouri** - L'effet d'*Acidiphilium cryptum* sur la croissance de six différentes souches d'*Acidithiobacillus ferrooxidans* sur le milieu de culture FeTSBo

Céline Pullen - Cloning and expressional analysis of the putative tumour suppressor gene RBM3

Emily Webb - Effects of differential exposure to sunlight on the rate and pattern of decomposition of *Sus scrofa* L. in southern Ontario

Amber Williamson - Effect of snow depth and quality on the occurrence of timber wolves (*Canis lupus*) and prey species, elk (*Cervus elaphus*), in the Burwash area

Robert Wright - Profile of a typical patient in a methadone treatment program

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Graduate Students

On July 12th, 2003, Ms. **Krista Ann Currie** successfully defended her Master's thesis entitled 'Characterization of the human STR Locus D18S535 in Caucasian and aboriginal populations from northern Ontario for forensic purposes.' Her supervisor was Dr. K. Nkongolo. Currently, Ms. Currie is a biology technologist at Nipissing University in North Bay.

On September 23rd, 2003, Ms. **Jan Latour** successfully defended her Master's thesis entitled 'Human preferences and choices and how they may affect Lake Nipissing's recreational walleye fisheries.' Her supervisor was Dr. J. Gunn. Currently, Ms. Latour is attending teacher's college in England.

On September 3rd, 2003, Ms. **Rachelle Desrochers** successfully defended her Master's thesis entitled 'Biocomplexity measures and their application in assessing perturbation of plant communities in northern environments.' Her supervisor was Dr. M. Anand. Currently Ms. Desrochers is considering Ph.D. programs.

On September 4th, 2003, Ms. **Sarah Proceviat** successfully defended her Master's thesis entitled 'Impact of careful logging on availability of woodland caribou (*Rangifer tarandus caribou*) and moose (*Alces alces*) forage and habitat in northern Ontario lowland black spruce stands.' Her supervisor was Dr. F.F. Mallory. Currently, Ms. Proceviat is a Ph.D. candidate at Trent University.

On November 27th, 2003, **Kahled Mahmoud** successfully defended his Master's thesis entitled 'Detection of *Acidithiobacillus ferrooxidans* from acid mine drainage environments using fluorescent in situ hybridization (FISH).' His supervisors were Dr. L.G. Leduc and Dr. G.D. Ferroni. Mr. Mahmoud is currently doing a Ph.D. at the University of Western Ontario.

On December 10th, 2003, **Ms. Kendra Patrick** successfully defended her Master's thesis entitled 'Timing of lake stratification in relation to ice cover timing in small clear and coloured lakes in northern Ontario.' Her supervisor was Dr. J. Gunn. Ms. Patrick is currently working as a water management specialist for the Department of Indian Affairs and Northern Development in Iqaluit, Nunavut.

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Awards

Heather Finney and **Allegra Cairns** received the Wynn Watson Biology Bursary

Kim Hunter received the Department of Fisheries & Oceans Canada Conservation Scholarship.

Nashieli Garcia Alaniz and **Matt Binks** received Sudbury Game & Fish Protective Association Bursaries.

Scott Kaufman was awarded the OFHA Sportfish Research Award.

M.Sc. student **Brian Tucker** was awarded an NSERC PGSD2 Scholarship for his work in Complex Ecosystem Modelling. Mr. Tucker is supervised by Dr. M. Anand.

M.Sc. student **Jennifer Braun** was awarded the Sudbury '95 Mining and Environment Scholarship of \$5000 for her research on a thesis entitled 'Improving Reclamation Success by Increasing Plant Diversity.' Ms. Braun is supervised by Dr. P.J. Beckett.

Congratulations to all our award winners!

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Announcements

On Saturday, April 3, members of the Department of Biology participated as judges in the Sudbury Regional Science Fair. **B. Angster-Beckett, Dr. P. Beckett, C. Blomme, L. Boileau, L. Brosseau, Dr. F.F. Mallory, Dr. K.K. Nkongolo, and Dr. P. Ryser** provided their expertise in the difficult process of determining category winners and special prize winners. The fair was held in the Science building at Laurentian University. Meanwhile, **Dr. J-F. Robitaille** was a judge at the North Shore Regional Science Fair in Elliott Lake.

For the second consecutive year, **Dr. J.-F. Robitaille** has been invited to sit on a scientific jury for the attribution of research funding to Quebec forestry researchers by the province. The review included nine grant applications. The administrative unit, le Fonds Québécois de Recherche sur la Nature et les Technologies, invited applications in the fields of forest socio-economics, biodiversity, ecosystems, genetics, seed and plant production, and silviculture. On March 15th in Montréal, Dr. Robitaille chaired the review for biodiversity and ecosystems, an envelope of \$555,000 for 2004-2006.

The Department is pleased to announce that **Dr. Tom Johnston** was the successful candidate in the recent competition for Research Scientist at the Co-op Unit. Dr. Johnston will begin his new duties at the end of the summer when the 2004 field season wraps up.

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Publications

Alikhan, M.A. 2004. The physiological consequences of metal and other environmental contaminants to terrestrial isopods. *In* Biology of Terrestrial Isopods, V, Edited by Sfenthourakis, S. *et al.* Koninklijke Brill NV, Leiden, The Netherlands. pp. 263-284.

Alikhan, M.A. 2004. Effect of copper and nickel contamination on growth and fecundity in *Porcellio spinicornis* (Isopoda). *In* Biology of Terrestrial Isopods, V, Edited by Sfenthourakis, S. *et al.* Koninklijke Brill NV, Leiden, The Netherlands. pp. 285-297.

Anand, M. and R.E. Desrochers. 2004. Quantification of restoration success using complex systems concepts and models. *Restoration Ecology* 12: 117-123.

Ulsh, B. A., S. M. Miller, **F.F. Mallory**, R.E.J. Mitchel, D.P. Morrison, and D.R. Boreham. 2004. Cytogenetic dose-response and adaptive response in cells of ungulate species exposed to ionizing radiation. *Journal of Environmental Radioactivity* 74: 73-81.

Schulte-Hostedde, A.I., J.S. Millar, and H.L. Gibbs. 2004. Sexual selection and mating patterns in a mammal with female-biased sexual size dimorphism. *Behavioral Ecology* 15: 351-356.

Shorthouse, J.D. 2003. Overview of insects on roses. *In* A.W. Roberts, T. Debener and S. Gudín (Eds.). *Encyclopedia of Rose Science*. 3 Volumes. Elsevier, Amsterdam, The Netherlands. pp. 415-425.

Shorthouse, J.D. 2003. Galls induced by cynipid wasps. *In* A.W. Roberts, T. Debener and S. Gudín (Eds.). *Encyclopedia of Rose Science*. 3 Volumes. Elsevier, Amsterdam, The Netherlands. pp. 448-456

Winterhalder, K., A.F. Clewell and J. Aronson. 2004. Values and science in ecological restoration. A response to Davis and Slobodkin. *Restoration Ecology* 12: 4-7.

Winterhalder, K., and B. McIlveen. 2004. Botany of the Belanger Bay alvar. *Wildflower* 20: 20-22, 27.