



# NRES WEEKLY NEWS

## November 30 - December 4, 2009

A newsletter for faculty, staff and students  
who participate in the  
Natural Resources & Environmental Studies Institute  
and NRES Graduate Programs

### COMING EVENTS

### NRESI RESEARCH COLLOQUIUM SERIES

**This Friday**

**Dr. Darren Irwin, Dept. of Zoology, UBC**

**After the Ice: the western Canadian suture zone as a natural laboratory for the study of speciation**



Speciation usually begins in allopatry, yet can best be studied after divergent forms have expanded into sympatry. In the mountains of BC and Alberta, there are many secondary contact zones between closely related western and eastern taxa. By studying multiple taxon pairs in this suture zone, we can determine 1) what traits have diverged between western and eastern taxa during their time in allopatry, and 2) whether the divergent taxa are reproductively isolated and the role that various traits play in that isolation. Case studies generally fit into two categories. First, winter wrens provide an example of reproductively isolated cryptic species that are highly divergent in song and genes, but similar ecologically and morphologically. Second, yellow-rumped warblers provide an example of morphologically divergent forms that hybridize extensively where they meet. Plumage patterns and several small parts of the genome show steep and concordant clinal change across the hybrid zone, whereas morphometric traits and most parts of the genome show broader clines or no change between the forms. In these examples of boreal taxon pairs, there is little evidence for habitat-based natural selection playing a major role in speciation. Rather, sexual selection and adaptation to distinct migratory routes appear to have played more important roles.

**Nov. 27, 2009**

**3:30 - 4:30 pm**

**Lecture Theatre 7-152**



**Jocelyn Campbell, UBC / UNBC**

**Unfaithful fungi: lichen as a symbiosis**

**Next Friday**

Whether one ascribes to a mutualistic or a more parasitic paradigm, lichens are a symbiotic relationship. Under appropriate climatic conditions, this relationship provides a somewhat reliable source of fixed carbon for fungal metabolism in return for a conduit for mineral nutrients to, and a protective shell of hyphae for, the photosynthetic partner. The widespread success of this arrangement implies that these are reasonable trade-offs for the fungus, particularly when no other carbon source is readily available. Cyanolichens are a special type of lichen in which the photosynthetic partner is a nitrogen-fixing cyanobacterium. These species are generally restricted to wet forests and form a distinct assemblage of epiphytes strongly associated with old forests in inland British Columbia. Cyanolichens are disproportionately abundant and species-rich on conifer saplings beneath mature cottonwoods and aspens, and are often observed beneath *Populus* even in stands that are otherwise too dry to support them. These observations suggest that *Populus* facilitates cyanolichens by providing some factor that is critical to establishment or growth, however the factor remains unknown. This talk will explore potential climatic and chemical factors governing the strong relationship between cyanolichens and poplar and present a hypothesis related to the chemical secretions of the poplar tree itself.

**Dec. 4, 2009**

**3:30 - 4:30 pm**

**Lecture Theatre 7-152**

**Unable to make it in person? Watch the colloquium at your desk!**  
**For Elluminate information and link to the webcast: [http://www.unbc.ca/nres/nresi\\_webcast.html](http://www.unbc.ca/nres/nresi_webcast.html)**  
**Log in as "Guest"**

**We're on the web at : [www.unbc.ca/nres/newsletter](http://www.unbc.ca/nres/newsletter)**

## PUBLICATIONS

- Binici, H., **Arocena, J.**, Kapur, S., Aksogan, O., and H. Kaplan (2009) "Microstructure of red brick dust and ground basaltic pumice blended cement mortars exposed to magnesium sulphate solutions." *Can. J. Civ. Eng.* 36:1784–1793
- Zanuzzi, A., **Arocena, J.M.**, van Mourik, J.M. and A. Faz Cano (2009) "Amendments with organic and industrial wastes stimulate soil formation in mine tailings as revealed by micromorphology." *Geoderma* 154:69-75
- Carson, AW, **Rea, RV** and **AL Fredeen** (2009) "Compensatory shoot growth in trembling aspen (*Populus tremuloides Michx.*) in response to stimulated browsing." *Alces* 45: 101-108

## CONFERENCES / TRAVEL

**Staffan Lindgren** is in Uppsala, Sweden, the week of November 23. He has been working with former post-doctoral fellow Niklas Björklund (now a Research Associate) at the Swedish University of Agricultural Sciences, Uppsala, and has attended the Skogskonferensen (the Forestry Conference), an annual event for Swedish forest owners, managers and scientists. This year's theme is "Forest Disturbance – now and in the future", and Staffan was invited to give a presentation on the mountain pine beetle outbreak (in Swedish, which is more difficult than one would think after 32 years in Canada - speaking Swedish is one thing, knowing the correct forestry terminology is quite another!). He has also met with a number of colleagues doing research on root weevils and bark beetles.

**REMINDER:** Share your information about recent publications, grants, and/or other honours you may have received with others interested in NRES issues.

**PLEASE EMAIL ALL INFORMATION AND MATERIAL TO MICHELLE KEEN: [keenm@unbc.ca](mailto:keenm@unbc.ca)**

## THESIS DEFENCES

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Ms. Zheng Zhe He is a candidate for the degree:  
**Master of Natural Resources and Environmental Studies**

Ms. He will be defending her thesis entitled:

“Export Barriers to the Chinese Market: Insights from British Columbia Forest Products Firms”

Supervisor: **Dr. Chris Opio**

Date: November 27, 2009

Time: 9:00 am

Room: 1079, Senate Chambers

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Ms. Prudence-Elise Breton is a candidate for the degree:  
**Master of Natural Resources and Environmental Studies**

Ms. Breton will be defending her thesis entitled:

“Organizing for Sustainability at a Small Scale: A Case Study of an Ecovillage Experiment”

Supervisor: **Dr. David Connell**

Date: November 27, 2009

Time: 2:00 pm

Room: 1079, Senate Chambers

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Ms. Alyssa Shaw is a candidate for the degree:  
**Master of Science in Natural Resources and Environmental Studies (Biology)**

Ms. Shaw will be defending her thesis entitled:

“The Use of Platelet Monoamine Oxidase-B as a Biomarker for Mercury Neurotoxic Effects Among Inuit in Arctic Canada”

Supervisor: Dr. Laurie Chan

Date: November 27, 2009

Time: 3:00 pm

Room: 6-205, Conference Centre

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Ms. Nancy-Anne Rose is a candidate for the degree:  
**Master of Science in Natural Resources and Environmental Studies (Biology)**

Ms. Rose will be defending her thesis entitled:

“Collapsing the Fourth Dimension: Using Bioclimatic Envelope Modeling to Incorporate Spatial and Temporal Dynamics of Climate Change into Conservation Planning”

Supervisor: **Dr. Phil Burton**

Date: December 14, 2009

Time: 9:00 am

Room: 6-307, Conference Centre

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Ms. Catherine Henry is a candidate for the degree:  
**Master of Science in Natural Resources and Environmental Studies (Environmental Science)**

Ms. Henry will be defending her thesis entitled:

“Semi-Industrial Scale Testing of Biologically-Induced Copper Heap Leaching at Imperial Metals Corporation — Mount Polley Mine”

Supervisor: **Dr. Mike Rutherford**

Date: December 14, 2009

Time: 1:00 pm

Room: 6-307, Conference Centre

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Ms. Jennifer Herkes is a candidate for the degree:  
**Master of Science in Natural Resources and Environmental Studies (Geography)**

Ms. Herkes will be defending her thesis entitled:

“Planning for Resilience: A Case Study of Kitimat, BC”

Supervisor: **Dr. Greg Halseth**

Date: December 15, 2009

Time: 9:00 am

Room: 1079, Senate Chambers

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