



NRES WEEKLY NEWS

October 1 - 5, 2012

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

For Elluminate information and link to the webcast: http://www.unbc.ca/nres/nresi_webcast.html



Dr. Do Hyuk "DK" Kang

Postdoctoral Research Fellow, Environmental Science Program, UNBC

The changing hydrological regime of the Fraser River Basin



A macro scale surface hydrology model, the Variable Infiltration Capacity (VIC) model, was applied to the Fraser River Basin (FRB) of BC to detect past changes in the watershed's hydrological regime. Previous modeling studies have demonstrated that the FRB is a snow-dominated watershed but with climate change may evolve to a pluvial regime. A previous analysis of streamflow covering a century showed increasing variability in inter-annual flows across the FRB. This application of the VIC model evaluates the changing contribution of snowmelt to the hydrology of the FRB both spatially and temporally. To this end, a 3-hourly meteorological forcing dataset was used to drive the VIC model for 54 years (1953 to 2006). The FRB is then divided into 7 sub-basins and the simulated discharge is validated with stream gauge observations operated by the Water Survey of Canada (WSC). There will then be a focus on the contribution of snowmelt to the total discharge estimated from spatially-averaged maximum snow water equivalent (SWE) divided by annual runoff (Q) over the hydrological years. High values of this ratio indicate that the upper FRB experienced deep wintertime snowpacks followed by high freshets during May and June in the 1990's. On the other hand, the summer season was dry compared with 1960's to 1980's. In addition, simulations by perturbed forcings of precipitation and air temperature suggest that the maximum SWE/Q ratio is more sensitive to air temperature rather than precipitation. The talk will then end with a discussion of microwave remote sensing of snow and its potential utility in assessing the changing FRB.

Friday, October 5, 2012

3:30 - 4:30 pm

Room: 7-152



Cecilia Malmqvist & Harald Säll

School of Engineering, Linnaeus University, Sweden

The challenge to make the researchers and the forest sector connect



Sweden is a country where forestry is important in many ways. Today 56% of Sweden is covered by productive forest land, of which approximately 50% is owned by more than 330 000 non-industrial private forest owners. The decisions about silviculture and how to manage the estates are made by the owner, supported by counselors, and the job is executed by the owner or contractors. In order to take good decisions, the owners want to be up-to-date about the current forest and wood research. On the other hand, the researchers have a duty to distribute their research to the society and are also interested to get input from the forest sector about what the problems in practice are for the moment. But how, where and when can these parts meet?

We will show an example of how this connection can be done. We will have our own research area as a point of departure.

We have hopes of giving you as well an insight in spiral grain in Norway spruce and how it affects silviculture as regeneration of Douglas fir in Sweden and how Swedish forest owners acquire the latest knowledge in forestry and applies it in their own enterprises.

Friday, October 12, 2012

3:30 - 4:30 pm

Room: 7-152

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

PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: Michelle.Keen@unbc.ca

We're on the web at : www.unbc.ca/nres/newsletter



GRADUATE THESIS DEFENCE

Ms. Danielle McIntosh is a candidate for the degree:

Master of Natural Resources and Environmental Studies

Ms. McIntosh will be defending her thesis entitled:

“Wildlife Viewing in the Mountain National Parks of Canada: An Experiential View”

Supervisor: **Dr. Pam Wright**

Date: **October 25, 2012** Time: 9:00 am Room: 6-307 Conference Centre

COMING EVENTS — ELSEWHERE

GLOBAL FRIDAYS
ROOM 10-4520
12:00 - 1:30 pm

October 5, 2012

Dr. Richard Pineda, Assoc. Prof. & Assoc. Director of the Sam Donaldson Centre for Communication Studies, University of Texas at El Paso

“South of the Border Disorder?: One Academic’s Perspective on the US Election Process and Political Communication in a Mediated Era”

All Global Friday presentations will be available to remote participants at: <http://bit.ly/unbc-globalfriday>

CDI COMMUNITY SPEAKERS SERIES

Monday, October 15 7:00 pm Room 7-150

Dr. Terri MacDonald, Regional Innovation Chair in Rural Economic Development and the Lead Researcher of the Columbia Basin Rural Development Institute, Selkirk College

“The Columbia Basin Rural Development Institute: Building Regional Capacity through Research & Innovation”

PUBLICATIONS

Bonnett, T.R., Robert, J.A., Pitt, C., Fraser, J.D., Keeling, C.I., Bohlmann, J., and **D.P.W. Huber** 2012 Global and comparative proteomic profiling of overwintering and developing mountain pine beetle, *Dendroctonus ponderosae* (Coleoptera: Curculionidae), larvae. *Insect Biochemistry and Molecular Biology* <http://dx.doi.org/10.1016/j.ibmb.2012.08.003>

Tiffany Bonnett began her work on bark beetle cold tolerance in our research program as an NSERC USRA student; so this paper highlights the NRESi commitment to undergraduate research training. This work is the most comprehensive investigation into the physiology of overwintering bark beetle larvae published to date. The paper was published in Open Access format thanks in large part to a publishing grant from UNBC. Major funding for this work was from Genome Canada/Genome BC/Genome Alberta.

Garcia, O. 2012 Self-thinning limits in two and three dimensions. *Mathematical and Computational Forestry & Natural-Resource Sciences* 4(2): 66-72 <http://www.mcfns.com>

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