

NRESi NOTES

NRESi Bi-WEEKLY NEWS Sept 12 - Sept 23, 2016

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

FROM THE RESEARCH MANAGER

Hello everyone,

Time for another newsletter to update you on NRESi activities.

This Friday's (Sept 23rd) colloquium presentation features a former UNBC PhD student now conducting research at the University of Victoria. Dr. Travis Gerwing will be talking about 'Beavers to Benthics: NRES and beyond. Next Friday (Sept 30th) Dr Francis Zwiers from the Pacific Climate Impacts Consortium at the University of Victoria will be speaking on Challenges in understanding and projecting precipitation extremes. Both presentations are in room 7-150 and will be livestreamed.

In addition to our regular Friday NRESi colloquium presentations, we have arranged for a special presentation, in partnership with the Northern Analytical Laboratory Services (NALS), by Dr. Gerardo Rodriguez-Fuentes from the University of Havana, Cuba on "Environmental Applications of Natural Zeolites". That talk will take place on Wednesday, September 28th, 2016 in room 7-150. We are **not** able to livestream this presentation.

We also have a new feature starting in this weeks newsletter. Dr Hossien Kazemian, Director of the Northern Analytical Lab Services (NALS) will be providing information and updates on the services available from the lab to assist faculty and students with their research projects. See page 7 for this weeks news from the lab.

Also a reminder to NRES Institute members that today (Sept 23) is the deadline for submission of nominations for the NRESi Awards.

I am continuing to work on filling the winter semester colloquium schedule. Ideas and suggestions for speakers or topics is certainly welcome. You can reach me at <u>al.wiensczyk@unbc.ca</u>

Al Wiensczyk, RPF Research Manager, NRESi

NRESi COLLOQUIUM

Dr Travis Gerwing is our presenter for the September 23rd Friday colloquium and Dr. Francis Zwiers will be presenting on Sept 30th. We also have a special guest presentation by Dr Gerardo Rodriguez-Fuentes from the University of Havana, Cuba on Wednesday, September 28th. Watch for announcements closer to the lectures confirming the presenter and topic. Lectures for the fall semester will be held in room **7-150**.

Planning for the winter 2017 colloquium series is currently underway. If you any suggestions for speakers, or if you would be willing to make a presentation yourself please contact me via email using the email address below.

TENTATIVE FALL SEMESTER COLLOQUIUM SCHEDULE

Presentation Date	Tentative Presenter and/or Topic
Sept 23, 2016	Dr. Travis Gerwing, UNBC. From Beavers to Benthics: NRES and beyond.
Sept 28, 2016	Dr. Gerardo Rodriguez-Fuentes. Environmental Applications of Natural Zeolites.
Sept 30, 2016	Dr. Francis Zwiers, Pacific Climate Impacts Consortium. Challenges in Understanding and Projecting Precipitation Extremes.
Oct 7, 2016	Dr Fiona Johnston, Leibniz-Institute of Freshwater Ecology and Inland Fisheries, Berlin, Germany
Oct 14, 2016	Ron Long, Pink Mountain Biodiversity Initiative
Oct 21, 2016	TBA— followed by NRESi Awards Ceremony
Oct 28, 2016	Dr. Dominick DellaSala, GEOS Institute
Nov 4, 2016	Alexandre Bevington, BC Ministry of Forests, Lands and Natural Resource Operations
Nov 18, 2016	TBA—Inspiring Women Among Us (IWAU) sponsored speaker
Nov 25, 2016	Dr. Susan Wood-Bohm—Executive Director—Biological GHG Management—Alberta Innovates

UPCOMING EVENTS

NRESI COLLOQUIUM

Dr. Travis Gerwing

Mitacs Elevate Postdoctoral Fellow, University of Victoria

From Beavers to Benthics: NRES and beyond



Originally from the small northern community of Ft. Nelson, obtaining a UNBC Scholars award, and attending UNBC marked a turning point in my professional life. The training I received at UNBC was instrumental in allowing me to pursue an academic career that has, so far, taken me from coast to coast across Canada. My seminar will track the journey of my academic career, beginning with the MSc research I did at UNBC. This research attempted to elucidate the impact of beaver foraging upon riparian willows in central BC. Following my MSc I moved across the country to the University of New Brunswick where I obtained a PhD in Marine Biology. I will share my thesis work that explored the ecosystem interactions that structure the intertidal mudflats of the Bay of Fundy. I am now a Visiting Scholar at UNBC, as I completed a MITACS Elevate postdoctoral fellowship (partnered with the Hakai Institute) at the University of Victoria and Vancouver Island University. The marine research that I am conducing from UNBC focuses upon the central and northern coast of BC, and uses intertidal ecosystems to explore human impacts upon marine systems, the effect of climate change on marine systems, and the interaction between the two.

Friday, Sept 23, 2016

3:30 pm - 4:30 pm Room: 7-150 To participate remotely: <u>http://www.unbc.ca/nres-institute/colloquium-webcasts</u>

NALS/NRESi COLLOQUIUM

Dr. Gerardo Rodríguez-Fuentes

Laboratorio de Ingeniería de Zeolitas Instituto de Ciencia y Tecnología de Materiales Universidad de La Habana, Cuba



Environmental Applications of Natural Zeolites

The impact of natural zeolites in environment is more significant than the one of synthetic zeolites. Even when the products based on synthetic zeolites have a large global revenue –about 3.5 billion USD in 2015– because their main application are in 1) Catalyzers of oil refining processes, 2) Detergent builders and 3) Absorbers. The products based on natural zeolites are applied in many environmental fields: 1) Animal feeding, 2) Pet litter, 3) Odor control, 4) Cement production, 5) Water purification, 6) Wastewater treatment, 7) Fertilizer carrier, 8) Fungicide or pesticide carrier, 9) Gas absorbent, 10) Air filtration, 11) Oil absorbent, 12) Desiccant, 13) Aquaculture, 14) Building material production, 15) Plant substrates and 16) Nuclear disasters containment. However, the global market of the natural zeolites industry is about 500 million USD (2015), for the reason that the natural zeolite products are treated as commodities. Nevertheless, when natural zeolite products are designed and developed following the methodology named Natural Zeolite Engineering, the value added is higher because there is a unique solution to specific problem using an exclusive technology. Our innovative products are designed to solve several environmental issues. These new materials and technologies do not replace the traditional uses of natural zeolites. We have also developed technologies to improve the performance of ordinary applications of natural zeolites: fertilizer carrier, soil amendment, treatment of animal feces to compost production, etc.

Wednesday, Sept 28, 2016

3:30 pm - 4:30 pm

Room: 7-150

UPCOMING EVENTS

NRESi COLLOQUIUM

Dr. Francis Zwiers

Pacific Climate Impacts Consortium, University of Victoria

Challenges in Understanding and Predicting Precipitation Extremes

A key challenge for societal adaptation to present and future climate is to reliably characterize the expected frequency and intensity of extreme precipitation events and related quantities, such as extreme snow and wind loading of structures. This information is required for all types of infrastructure that are exposed to the elements, ranging from typical family dwellings and the streets and storm water handling systems that serve them to mega-projects such as Site-C. This talk will first describe observed and projected changes in precipitation extremes from a global perspective. The broad evidence at these scales indicates that human influence on the climate system has intensified precipitation extremes in a manner that is consistent with warming, and that this will continue, supporting the notion that "stationarity is dead". Nevertheless, the evidence is not yet very evident on local and regional scales, and this, coupled with large variability and limited observational records, makes the estimation of changes in the characteristics of extremes in the context of nonstationarity very difficult. This is true for both the so-called "intensity-duration-frequency" (IDF) curves that are used extensively in engineering practice and for engineering based concepts such as "probably maximum precipitation" (PMP) that are often used for reservoir design. The remainder of the talk will therefore discuss some of the challenges associated with improving the robustness of IDF curve estimates, focusing on the identification of scaling relationships with other climate variables, and with assessing the uncertainty of PMP estimates.

Friday, Sept 30, 2016

3:30 pm - 4:30 pm Room: 7-150 To participate remotely: <u>http://www.unbc.ca/nres-institute/colloquium-webcasts</u>

BC Nature Fall Annual General Meeting 2016 Northern Treasures: Fish, Fur, Feathers September 22-25, 2016 Prince George BC

The <u>Prince George Naturalists Club (PGNC)</u> is pleased to host the BC Nature Fall General Meeting (FGM) from September 22 – 25, 2016 in Prince George, BC. Prince George is a hub for outdoor recreation and offers unique natural wonders to outdoor enthusiasts.

We invite all interested BC naturalists to join us and participate in field trips, enjoy presentations from knowledgeable speakers from throughout the north, and help guide BC Nature's objectives to support conservation, education, and outdoor recreation. We look forward to sharing this wonderful and unique part of BC with you. Visit the website for more information: <u>http://pgfgm2016.ca/</u>

UPCOMING EVENTS

FREE Screening of Disobedience

Wednesday, September 28, 2016—6:00 pm Weldwood Theatre (7-238)

A 40-minute film on the history of civil disobedience for the climate, and the future of the movement to defend our planet from fossil fuels and climate change.

Free popcorn for the first 40 attendees.



This film is being presented by the Pacific Institute for Climate Solutions (PICS) due to student demand.

UPCOMING EVENTS

2nd Call for Papers and Registration Open:

Between Tradition and Increasing Challenges: Future Development of Small-scale and Community Forestry in times of global change.

IUFRO International Conference September 26-29, 2016 Foz do Iguacu, Brazil

Post conference tour: September 30—October 2, 2016 Misiones, Argentina

For more information: <u>http://www.latinoamericajointiufromeeting.com/</u>

UPCOMING EVENTS

Watersheds 2016: *Building Capacity for Collaboration and Watershed Governance in BC* September 30 - October 1, 2016 Vancouver, BC

For detailed event information and a preliminary program, please visit the Watersheds 2016 website: <u>https://watersheds2016forum.wordpress.com</u>

REMINDER: Share your information about recent publications, grants, and/or other honours you have received with NRESi newsletter subscribers via our bi-weekly newsletter. PLEASE EMAIL ALL INFORMATION AND MATERIAL TO: al.wiensczyk@unbc.ca

FILM SCREENING

Quesnel River Research Centre Annual Open House

October 1, 2016 Likely, BC

The Quesnel River Research Centre (QRRC) at Likely will be holding its annual Open House on Saturday 1st October, with presentations scheduled to begin at 10am, followed by lunch.





A crew from the QRRC, UBC and Bedford Institute of Oceanography retrieve a sediment core from the bed of Quesnel Lake, July 2016 Verse information about the ORPC is avail

The QRRC has had a busy summer, hosting scientists based at several Canadian and overseas universities, and individuals originating from Iran, China, Israel, South Africa, Ireland, Italy, the USA, UK – and Canada.

As well as both new and ongoing projects by post-graduate students from UNBC, and the continuation of sampling from Quesnel Lake and its associated rivers to monitor the impacts of tailings released from the Mount Polley mine in August 2014, activities included the first phases of fieldwork under a major new research program headed from UNBC by Drs Ellen Petticrew and Phil Owens.

We invite you to join us on 1st October, to learn more about current research based at the QRRC, and to explore opportunities for contributing to its future scientific development.

More information about the QRRC is available at http://unbc.ca/qrrc

UPCOMING EVENTS

Spruce Beetle Summit

October 19-20, 2016 Prince George, BC—Ramada Inn—Skylight room

We invite you to join the conversation on the current spruce beetle outbreak in the Omineca. Anticipated outcomes for participants include an understanding of how this beetle differs from other bark beetles, the influence of climate change, anticipated impacts, and what spruce stands may look like post outbreak.

Diane Nicholls, BC's Chief Forester, will provide introductory remarks for this conference.

Topics

- Community Development
- McLeod Lake Indian Ban Perspectives
- Economic Implications
- Resistance and resilience
- Spruce ecosystem... life after beetle
- Population genetics
- Lessons learned: bark beetle management in BC.

To register please contact Nik McEwan—<u>Nikolaus.McEwan@gov.bc.ca</u> by **October 14, 2016** A detailed agenda will be circulated by October 17th.

Gathering the best science to mitigate impact—<u>www.gov.bc.ca/ominecasprucebeetle</u>

5th BC Protected Areas Research Forum

December 5-7, 2016 Cadboro Commons, University of Victoria

The **BC Protected Areas Research Forum (BCPARF)** is a bi/tri-annual gathering of British Columbia (and neighbours) parks and protected areas managers and researchers from government, First Nations, academia (faculty and students), industry, non-governmental organizations and private sectors whom are involved and interested in the ecological and social dimensions of protected areas planning and management.

Call for presentations, research and management snappers, posters, workshops, and special sessions and side-meetings is **now open** with an online submission form. **Submission deadline has been extended to OCTOBER 21st!!!**

Please visit the conference website <u>http://www.unbc.ca/bc-protected-area-research-forum</u> for submission forms, registration info, the preliminary conference program, and other research forum information.

TRAVEL & CONFERENCES

After teaching her first class of the semester, **Gail Fondahl** made a quick trip to Vienna to participate in ArcticFrost's Annual Network Meeting and Early Career Scholars Workshop, on "Arctic Sustainability in the Global Context: What can we learn from or teach the rest the world" (9-12 September). The ArcticFROST project is funded by the US National Science Foundation: Gail serves on its executive steering committee. Back in time to teach first class of other course!

Sybille Haeussler is in Sapporo, Japan with Dave Coates for the I.U.F.R.O. 15th International Conference on the Ecology and Silviculture of Fir. Sybille will be presenting a paper titled "Maintaining biodiversity in subalpine fir (Abies lasiocarpa) forests managed for wood production"

Staffan Lindgren was external examiner on a PhD proposal defence at Simon Fraser University on September 19th.

Roger Wheate is attending the 2nd Virtual Geosciences conference in Bergen, Norway, September 21 to 23. Hiking the week before; he has met many sheep.

Cumulative Impacts Research Consortium (CIRC) news

The CIRC has two upcoming events: A day workshop in Fort Nelson on October 26, 2016 and a 1/2 day workshop in Fort St John on November 29, 2016 to discuss cumulative impacts and resource development in the Peace Region, and start the conversation on Cumulative Impact Assessment tools.

Pacific Institute for Climate Solutions (PICS) news

Michelle Connolly from PICS will be giving short presentations to graduate and undergraduate classes this semester about opportunities with PICS.

PUBLICATIONS

Zimmerman, H.D., Ramsay, S.M., Mesias, V., Mora, M., Murray, B. & Otter, K.A. 2016. Evolution in white-throated sparrow song: regional variation through shift in terminal strophe type and length. Behaviour DOI 10.1163/1568539X-00003394 (Published online 1 Sept 2016).

Northern Analytical Laboratory Service (NALS) Update

A Unique Analytical Facility in Northern BC

The **UNBC-NALS** is home to an extensive suite of analytical science instrumentation that enables a broad spectrum of biological, chemical and physical analyses. NALS has a mission to contribute to the development and application of sound, welldocumented science-based knowledge to support faculty research and client based analytical services. NALS is committed to providing analytical services, the pursuit and advancement of scientific knowledge, and the training of students aimed at creating highly qualified professionals capable of contributing to industry in their future careers. One of our main mandates is to make the lab services more responsive to the needs of researchers and corporate clients throughout Northern BC. As a state-of-theart education and research facility, NALS develops analytical methodologies at UNBC for both on campus and off-campus clients.



NALS analytical services are available to the private, public and non-profit sectors to help meet their research, development and quality assurance needs.

Recently, UNBC-NALS has expanded its technical capacity for metals analysis in a big way. Two modern **atomic emission spectrophotometers** have been installed in both the Undergraduate Chemistry Laboratory and the central equipment lab at NALS. Both instruments will provide compositional data for elements routinely sought after by researchers and industry.

With new instrumentation also comes new possibilities for old equipment. With the ICP-OES taking over routine metals analysis in NALS, it has also freed up equipment for other specialized application. An under-utilized **Laser Ablation** (LA) **unit** has now been interfaced with a dedicated mass spectrometer. This LA-ICP-MS is a cutting edge technology capable of spatially profiling elemental composition in a variety of materials. NALS looks forward to applying this technology in the months to come. Their short-term goal is to be able to spatially map elemental composition in soils, minerals, and biological specimens such as bone, tooth, and otolith. It will provide a nearly non-destructive route for assessing the surface chemistry of materials at the micrometer scale and its potential applications are innumerable.

Need more information?

http://www.unbc.ca/northern-analytical-lab-service

To arrange a tour please contact Hossien Kazeman at hossein.kazemian@unbc.ca or Phone: 250-960-5168

IN THE NEWS

(Government press releases)

Restart of Brule mine means up to 170 new jobs for region

Sept 23, 2016—Chetwynd. Conuma Coal Resources Ltd., the new owners of the Brule coal mine in British Columbia's Peace Region, are restarting the mine immediately, Minister of Energy and Mines Bill Bennett announced today.

For more details...

Factsheet: Grants and loans for B.C. students

Sept 22, 2016—Victoria. FB.C. offers a mix of grants and loans to help ease the cost of post-secondary education and encourage students to further their studies regardless of their personal financial circumstances. For more details...

B.C. and forest industry partner to meet workforce needs

Sept 22, 2016—Prince George. To ensure that the forest industry has the skilled workforce it needs in the future, the Province has partnered with the B.C. Forest Safety Council (BCFSC) and the Council of Forest Industries (COFI) on two new Forest Workforce projects that will support the recruitment, identification and skills assessment of qualified workers.

IN THE NEWS

(Government press releases (con't)

New online tool to help certify next generation of organic farmers

Sept 21, 2016—Victoria. A new on-line system will help new entrants achieve certified organic status, as B.C. farmers continue to meet the consumer demand for certified organic B.C. foods. For more details...

Ecosystem restoration burns set for Omineca region

Sept 13, 2016—Mackenzie. The BC Wildfire Service will be conducting a series of prescribed burns in the West Parsnip area of the Mackenzie Natural Resource District from Sept. 19-23, 2016, if weather and site conditions are favourable. For more details...

Series of fuel management burns planned in northwest

Sept 13, 2016—Smithers. BC Wildfire Service crews will be conducting a series of fuel management burns in the Northwest Fire Centre in September and October to remove accumulated woody debris and reduce the wildfire hazard in the region. For more details...

Great bear rainforest to receive special designation

Sept 12, 2016—Victoria. As part of their upcoming Royal Tour, Their Royal Highnesses the Duke and Duchess of Cambridge will officially endorse the Great Bear Rainforest under The Queen's Commonwealth Canopy initiative, Premier Christy Clark confirmed today.

PhD opportunities available

The Faculty of Social Sciences (FSV) at NORD University in Bode, Norway, is offering two exciting PhD Fellowships within Social– and Environmental Studies.

Are you interested in understanding how the climate affects local- and indigenous communities in the Arctic? Are you concerned with sustainable food production and food security?

Are you interested in learning more about local adaptation to challenges linked to climate, health and societal changes? Do you want to work in an international research network that takes climate challenges seriously? Do you want to live in an exciting and stimulating region with beautiful wilderness?

NORD University is looking for someone who can contribute to our understanding of how local- and indigenous communities in the Arctic can meet these challenges.

There is one four-year PhD-position with 25 % work-duty, and one three-year PhD-position without work-duty. Both positions will be associated with a project linked to a Nordic Centre of Excellence that study the relationship between climate change and the changing risks for food production, health, and local culture and livelihoods.

About the project:

Climate Change effects on the epidemiology of infectious diseases and the impacts on Northern societies (CLINF) 2016-2021: <u>Climate change effects on the epidemiology of infectious diseases and the impacts on Northern Societies (CLINF)</u>

Application deadline: October 16, 2016

For details on this opportunity go to: <u>https://www.jobbnorge.no/en/available-jobs/job/129013/two-exciting-phd-fellowships-within-social-and-environmental-studies</u>

COLLOQUIUM ARCHIVE

Did you miss a colloquium or special lecture this semester? Visit NRESi's webcast archive to catch up! They can be found on the <u>NRESi Youtube channel</u>.

LITO AROCENA STUDENT AWARDS

Last December, dear colleague and founding UNBC faculty member, Lito Arocena passed away after a short battle with cancer. In honour of his memory, a UNBC memorial fund was established to support three student awards, which have recently been instituted:

- **Dr. Joselito (Lito) Arocena Memorial Scholarship** (\$1000). Available to a full time undergraduate student who has completed 90 credit hours and is pursuing a Bachelor of Science honours or majors degree in one of the following: Biology, Environmental Science, Geography, or Natural Resources Management. Criteria: Academic excellence
- **Dr. Joselito (Lito) Arocena Memorial Undergraduate Thesis Prize** (\$250). Awarded for the best thesis presented by undergraduate students completing an undergraduate major or honours degree in one of: Biology, Environmental Planning, Environmental Science, Environmental Studies, Geography, Natural Resources Management, or Nature-based Tourism Management.
- **Dr. Joselito (Lito) Arocena Memorial Graduate Prize** (\$250). The Prize will be awarded to the student nominated by the NRES Graduate Program for the UNBC Governor General's Gold Medal.

Thanks to contributions from donors and UNBC, the fund is currently large enough to endow the \$1000 scholarship in perpetuity. However additional contributions are needed to permanently endow the two prizes, and to increase the amounts awarded over time. If anyone would like to contribute to this fund, through payroll deductions or otherwise, please go to www.unbc.ca/giving or www.unbc.ca/giving/employee-giving for more information.

SUSAN STEVENSON MEMORIAL AWARD

As its first project of this kind, the Natural Resources and Environmental Studies Institute (NRESi) has established the Susan Stevenson Scholarship Fund, in memory of wildlife ecologist and NRESi member Susan Stevenson. During a 35-year career built primarily in the BC central interior, Susan designed and implemented important research and inventory projects related to mountain caribou habitat, lichen biology, and silvicultural systems, collaborating with a diverse range of researchers, and gave generously of her expertise to the next generation of scientists. Susan exemplified the Institute's values of interdisciplinary curiosity and unselfish collaboration, and enriched the lives of all those who worked and studied with her.

Efforts have succeeded in reaching the goal of \$15,000 that will be matched by UNBC to allow for an annual award. Additional contributions to the fund are welcomed. The inaugural award will be presented in the 2016-2017 academic year. NRESi would like to thank everyone who contributed to the scholarship!

The following award criteria for the **Susan Stevenson Memorial Award** have been developed: **Value:** \$1,000

Eligibility: Available to a full or part time female graduate student enrolled in either the Masters (NRES) or PhD (NRES) degree programs with a research emphasis in one or more of: wildlife ecology, plant biology, forest ecology, or innovative silvicultural systems and practices that emphasize wildlife management and biodiversity objectives.

Criteria: Satisfactory Academic Standing (3.0 GPA)

Conditions: Student is unable to receive this award more than once.

Recipient Selection: Senate Committee on Scholarships and Bursaries on recommendation of the NRESi Steering Committee. Applicants will provide a statement, not exceeding 500 words in length, explaining how their intended research fits within the areas specified for his award.