



CANADIAN GEOPHYSICAL UNION
UNION GÉOPHYSIQUE CANADIENNE

Annual Eastern Student Meeting of the Canadian Geophysical Union – Biogeosciences and Hydrology sections.

Department of Geography and Environmental Management, University of Waterloo, Waterloo, ON

Friday, 5 February		
18:30 -	The Huether Hotel (upstairs). 59 King Street N., Waterloo	Informal gathering for dinner and refreshments.
Saturday, 6 February		
8:30 – 9:00	Registration and Refreshments	
BIOGEOSCIENCES SESSIONS: EV1 132		
9:00 – 10:30	Session 1	
9:00 – 9:15	F. Cheng	Nutrient processing rates scale inversely with water residence times
9:15 – 9:30	T. Gingras-Hill	Assessing biogeochemical characteristics of a reclaimed upland during the initial stages of succession in a constructed watershed
9:30 – 9:45	K. Lutes	Effect of fertilizer application on greenhouse gas emissions from short-rotation willow biomass plantations
9:45 – 10:00	P.J. Mitchell	Comparing biogeochemical responses of a forest soil to biochar and phosphorus amendment

10:00 – 10:15	T. Milojevic	Soil oxygen dynamics: Implications for dynamic hydrological and climatic drivers
10:15 – 10:30	M. Depante	Hydrologic controls on trembling aspen (<i>Populus tremuloides</i>) regeneration and succession post-fire
10:30 – 11:00		
Break: EV3 Atrium		

11:00 – 12:15		
Session 2		
11:00 – 11:15	L.H. Lin	Characterization of protected organic matter in grassland, agricultural, and forest soils
11:15 – 11:30	K.R. Murray	Methane emission dynamics with an emphasis on vegetation effects from a constructed fen including comparison to reference sites in the Athabasca Oil Sands, Alberta
11:30 – 11:45	F. Chan	Carbon, water, and energy dynamics of a pine forest during the first decade since afforestation on former cropland
11:45 – 12:00	C. Dieleman	Enhanced carbon release under future climate conditions in a peatland mesocosm experiment: The role of phenolic compounds
12:00 – 12:15	K.M. Daly	Soil CO ₂ efflux in a temperate deciduous forest ecosystem
12:15 – 13:30		
Lunch: EV3 Atrium		
13:30 – 14:15		
Session 3: Carbon Fluxes		
13:30 – 13:45	M. Morison	Subarctic peatland-pond interactions in a permafrost landscape: runoff quantity and quality depend on frost table development and antecedent moisture conditions
13:45 – 14:00	C. McCarter	Wastewater contaminant treatment in a nutrient limited ribbed fen: Potential for methylmercury and phosphate release
14:00 – 14:15	D.S. McLagan	A high precision passive air sampler for gaseous mercury

14:15 – 15:15	Poster Session and Break: EV3 Atrium	
15:15 – 16:00	Session 4	
15:15 – 15:30	N. Zabel	Paleoecological history and contemporary controls of mercury accumulation in Kluane Lake, Yukon
15:30 – 15:45	A. Mellage	Non-Invasive geophysical monitoring of subsurface biogeochemical processes under redox oscillating conditions
15:45 – 16:00	S. Slowinski	Groundwater supply controls nutrient silicon limitation in the Grand River watershed

HYDROLOGICAL SCIENCES SESSIONS: EV3 1408		
9:00 – 10:30	Session 1	
9:00 – 9:15	M.C. Elmes	Exploring the hydrological function of a heterogeneous, low-relief moderate-rich fen watershed in the Western Boreal Plain, northern Alberta, Canada
9:15 – 9:30	E.D. Kessel	The transport of sodium from a contaminated tailing sands upland to a constructed fen peatland: two years post-construction
9:30 – 9:45	K. Van Meter	Confounding Complexity or Emerging Simplicity? Biogeochemical Regimes in Intensively Managed Catchments
9:45 – 10:00	C. Remmer	Developing a hydrological monitoring program for the Peace-Athabasca Delta (Alberta, Canada) using water isotope tracers
10:00 – 10:15	T. Aziz	Economic valuation of five water-related ecosystem services in the Grand River watershed, Ontario
10:15 – 10:30	B. Gharedagholo	Determining the wetting preference of peat with respect to water and non-aqueous-phase liquids
10:30 – 11:00	Break: EV3 Atrium	
11:00 – 12:15	Session 2	

11:00 – 11:15	J. Murfitt	Using remote sensing data to assess trends in lake ice within Ontario and Manitoba between 2001-2014
11:15 – 11:30	E.R. Haughton	Snowmelt energy balance at Scotty Creek, NWT
11:30 – 11:45	P. Mann	High resolution spatial variability of snow depth and water equivalent across a patchy tundra, forest and shrub landscape.
11:45 – 12:00	R. Connon	Changing runoff pathways due to permafrost thaw in discontinuous permafrost terrains

12:00 – 12:15	É. Devoie	Permafrost thaw rate and hillslope runoff generation in the permafrost transition zone
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12:15 – 13:30	Lunch: EV3 Atrium	
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13:30 – 14:15	Session 3	
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13:30 – 13:45	N. Sgro	Evaluating prospective hydrological model improvements with consideration of data and model uncertainty
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13:45 – 14:00	T.J. Gauthier	Evaluating effectiveness of mechanical compression to change the hydraulic properties of <i>Sphagnum</i> moss
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14:00 – 14:15	R. Chlumsky	Streamflow prediction of highly managed watershed in Madawaska river watershed using statistical modelling
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14:15 – 15:15	Poster Session and Break: EV3 Atrium	
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15:15 – 16:00	Session 4: Isotopes and Modelling	
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15:15 – 15:30	J. Van Patter	Investigating multiyear suspended sediment flux after a 500-year runoff event in Catskills, NY, USA
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15:30 – 15:45	D. Lamhonwah	Multi-year impacts of physical disturbance and thermal perturbation on High Arctic stream chemistry
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15:45 – 16:00	C. Ridenour	Silicon cycling through Hamilton harbour area of concern
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LIST OF POSTERS: EV3 Atrium

Biogeosciences:

S.E. Irvine	Vegetation controls on DOC production on a reclaimed fen in the Athabasca Oil Sands Region, Alberta
L. Davis	Overwinter habitat of endangered minnows in small Southwestern Ontario Streams
O. O.Y. Lun	Evaluation of clay mineral and suberin and cutin protection of lignin in soil
D.D. Radu	Effects of changing rainfall frequency on CO ₂ exchange among different vegetation communities in a Southern Ontario poor fen
S. Touchette	Carbon exchange in a restored peatland: evaluating the role of three graminoid species
A. Engering	Greenhouse Gas Flux on an Inverted Well Pad Peatland Restoration in Peace River, Alberta

Hydrological Sciences:

M. Braverman	Modeling permafrost degradation under linear disturbance in the regions of discontinuous permafrost
O. Sutton	Numerical modelling of sodium transport at a constructed fen in the Athabasca Oil Sands Region, Alberta.
H. Oh	The influence of water table fluctuation on nutrient dynamics in sand from a freshwater beach environment.
G. Giberson	Geospatial Estimates of Road Salt Usage Across a Gradient of Urbanizing Watersheds in Southern Ontario
AJ. Green	Exploring the Effects of Turbulent Sheltering within Wetlands in the Western Boreal Forest, Alberta, Canada
DD. Hughes	Detecting spatial patterns in hydrology and carbon export across the drainage network of a vast lake-rich permafrost landscape (Old Crow Flats, Yukon, Canada)
IC. Ilampooranan	Pitfalls in Model Calibration using Streamflow at the Watershed Outlet: Getting the Right Answers for the Wrong Reasons
E. Mathieu	The Impacts of Wildfires on Seasonal and Permafrost Thaw on a Peat Plateau at Scotty Creek, Northwest Territories, Canada
SM. Zadeh	Canadian Flood Quantile Estimation
BD. Persaud	Recent Variation of Daily Precipitation and Temperature Extremes at Fort Simpson, NWT
A. Robinson	Classification of hydrological response units for modelling source water dynamics in a High Arctic Watershed

SJ. Roy	Developing a hydroecological monitoring program for ponds in Wapusk National Park, northern Manitoba
T. Milojevic	Sustainability Trajectories in a Water Stressed Environment: A Systems Approach
J. Telford	Using paleolimnology to establish baseline metal concentrations and to reconstruct hydroecological conditions within a community monitoring program, Marian River Watershed, NWT.
K. Van Meter	Exploring nitrogen legacies and time lags: a 200-year longitudinal study of the Mississippi and Susquehanna watersheds
B. Walker	Changing climate and snowmelt regimes in northern tundra environments, NWT
N. Wilson	The Effects of a Changing Snowpack on the Bathurst Caribou Herd, Northwest Territories