

WATER SECURITY FOR THE PRAIRIES

FEATURING
Helen Baulch
ASSOCIATE PROFESSOR
SCHOOL OF ENVIRONMENT AND SUSTAINABILITY,
GLOBAL INSTITUTE FOR WATER SECURITY

May 14, 2019 7-8:30 PM
Roxy Theatre, 320 20th St W, Saskatoon

Public Lecture and Panel Discussion



for more information visit globalwaterfutures.ca



Agenda

18:00 – 19:00	Welcome Reception Location: Roxy Theatre, 320 20th St W, Saskatoon
Water security for the prairies: A public lecture and panel discussion Moderator: Lawrence Martz	
19:00 – 19:15	Welcome and Introduction – overview of the Global Water Futures Program: John Pomeroy
19:15 – 19:25	GWF short film
19:25 – 19:55	Keynote Presentation: Helen Baulch (Prairie water issues and challenges)
19:55 – 20:30	Panel Discussion – Panelists include: Chris Spence, Corinne Schuster-Wallace, Martyn Clark, Patrick Lloyd-Smith, Phil Loring, Graham Strickert, Colin Whitfield, Markus Hecker, Helen Baulch, and John Pomeroy (see bios on following pages). Question and Answer session

Keynote Presentation: Prairie Water issues and challenges – Helen Baulch

Stories of drought are part of the fabric of the prairies as are stories of adaptation, and communities coming together to face challenges. Alternating wet and dry cycles have made water and managing water key challenges to life in the prairies. And, there is growing concern about how these extremes will affect our lives in the coming decades. Overlaid on these wet and dry cycles are major concerns about water quality. Degradation of water quality in the prairies creates acute risks and unique challenges in our

landscape. In this public lecture and panel discussion we will discuss the state of water in and for the prairies, current risks, and potential solutions for our region – which suffers some of the greatest water-related risks of the country.

Short Biographies



Dr. Lawrence W. Martz, Ph.D., P.Geo.

Dr. Martz is an Emeritus Professor of Geography and Planning at the University of Saskatchewan, a Professional Geoscientist, and a member of the Global Institute for Water Security and of the Strategic Management Committee of Global Water Futures. From 2003 to 2018, he was the Dean of Graduate Studies and Research and a Vice-Dean of Arts and Science. Dr. Martz completed his Bachelor's (1976) and Master's (1979) degrees at the University of Alberta, and his Ph.D. degree (1987) at the University of Saskatchewan. His Master's thesis was titled *Sediment Yield of Spring Creek Watershed, Alberta* and his doctoral dissertation was titled *Variability of Net Soil Erosion and its Association with Topography in Canadian Prairie Agricultural Landscapes*. He has helped lead major research collaborations such as *MAGS: the Mackenzie GEWEX (Global Energy and Water Cycle Experiment) Study*, the *Atlas of Saskatchewan* project, the *Climate Change and Water Resources in the South Saskatchewan River Basin* interdisciplinary study, and the Community-University Research Alliance *Otipimsuak: the Free People - Métis Land and Society in Northwest Saskatchewan*. His current research interests focus on digital terrain analysis techniques, automated parameterization of hydrologic models, and the impact of scale on topographic analysis. He has published over 200 book chapters, journal articles and conference papers and supervised some 30 Masters' and Doctoral students and Post-doctoral Fellows.



Dr. John Pomeroy

Dr. John Pomeroy is Director of the Global Water Futures Program – the largest university-led freshwater research project in the world. At the University of Saskatchewan he is the Canada Research Chair in Water Resources and Climate Change, Distinguished Professor of Geography, Director of the Centre for Hydrology, Director of the Coldwater Laboratory, Canmore, Alberta and Associate Director of the Global Institute for Water Security. He is a Fellow of the Royal Society of Canada, the American Geophysical Union and the Royal Geographical Society, was the 2017 recipient of the J Tuzo Wilson Medal from the Canadian Geophysical Union and serves as Institute Professor of the Biogeoscience Institute of the University of Calgary and Adjunct Professor of the University of Waterloo. He leads the International Network for Alpine

Research Catchment Hydrology project of the Global Energy and Water Exchange Project for the World Climate Research Programme.

Pomeroy has led several international initiatives such as the International Commission for Snow and Ice Hydrology, the IAHS Decade on Prediction in Ungauged Basins, and national groups such as the IP3 Cold Regions Hydrology Network, the Drought Research Initiative and the Canadian Geophysical Union. He has served as Research Scientist, Professor, Visiting Professor and Honorary Professor to the USDA Forest Service, Environment Canada, University of Wales, Chinese Academy of Sciences and University of Aberystwyth. Dr. Pomeroy has authored over 300 research articles and several books that have been cited over 13,200 times. His current research interests are on the impact of land use and climate change on cold regions hydrology and water quality, and improved prediction of climate change impacts, especially floods and droughts.



Dr. Helen Baulch

Helen Baulch is a biogeochemist, an associate professor, and a Centennial Enhancement Chair at the University of Saskatchewan. Her work is focused on water security in the prairies -- understanding drivers of pollution, and consequences to aquatic ecosystems and to humans. Helen has published more than 50 journal papers and 12 news articles. Her work is motivated by the need for solutions to address growing issues of water insecurity; work often done in collaboration with partners in government and industry. She is the recipient of a 2019 Provost's outstanding teacher award.



Dr. Chris Spence

Chris was born in Hanna, Alberta and raised in Regina, Saskatchewan. Chris holds a B.A. (Hons.) and M.Sc. from the University of Regina and a Ph.D. from McMaster University. He works as a research scientist for Environment and Climate Change Canada in Saskatoon. He holds adjunct professor appointments at the Universities of Saskatchewan and Manitoba. His research focuses on hydrological and hydrometeorological processes in cold regions, with field studies in complex landscapes such as the Canadian Shield and Prairie, and the Laurentian Great Lakes.

Away from work, he enjoys mountain biking, backpacking, and drumming with the North Saskatchewan Regiment Pipes and Drums. He likes to travel, and see how other people live, and hear their perspectives.



Dr. Corinne Schuster-Wallace

Dr. Schuster-Wallace is currently a water-health researcher within the Global Water Futures program and an Associate Professor in the Department of Geography and Planning at the University of Saskatchewan. She has worked at the water-health nexus for almost two decades and spent eight years working for the United Nations, creating tools to help local decision-makers collect the information required for understanding local water security in rural communities. She

has broad experience at the water-health nexus including environmental factors for, and environmental change impacts on, outbreaks of waterborne disease and the linkages with human health and wellbeing.



Dr. Patrick Lloyd-Smith

Patrick Lloyd-Smith is an Assistant Professor in water and resource economics with the Agricultural and Resource Economics Department and Global Institute for Water Security at the University of Saskatchewan. Pat's research has focused on the valuation of environmental resources and ecosystem services and the integration of these values into economic analysis. He has applied these methods to drinking water quality, agricultural externalities, human health impacts, and fisheries. His research also involves the analysis of choice behaviour

with applications to food demand, recreation, and payment for ecosystem service (PES) schemes. Besides academic work, Pat has consulted on numerous economics projects for Canadian governments and the World Bank.



Dr. Martyn Clark

Martyn is a Professor at the University of Saskatchewan at Canmore, Editor-in-Chief of Water Resources Research, and Fellow of the American Geophysical Union. Martyn's research focuses in three main areas: (i) the development and evaluation of process-based hydrologic models; (ii) understanding the sensitivity of water resources to climate variability and change; and (iii) developing the next generation streamflow forecasting systems. Martyn has authored or co-authored over 150 journal articles since receiving his PhD in 1998.



Dr. Phil Loring

Philip Loring is an anthropologist who works with communities across North America to understand and solve issues related to food systems and community sustainability. He is currently the Arrell Chair in Food, Policy, and Society at the Arrell Food Institute and Associate Professor in the Department of Geography, University of Guelph. His graduate degrees are from the Resilience and Adaptation Program and Center for Cross-Cultural Studies, University of Alaska Fairbanks.



Dr. Graham Strickert

Dr. Strickert is an Assistant Professor in the School of Environment and Sustainability and a founding member of the Global Institute for Water Security at the University of Saskatchewan. He teaches graduate courses on leadership, community engagement, communication, and entrepreneurship as well as integrated data collection and analysis using mixed methodologies. He is a trans-disciplinary social scientist specializing in the human dimensions of water security. His work

seeks to answer the question, how humans' thinking influences water science, water governance, water management and policy decisions? Using experimental decision labs and social innovation labs he seeks to better understand how different forms of evidence influence decision making about water. A great deal of his work has focused on novel ways of communicating scientific information that underscore the need for collaboration with artists as well as traditional and local knowledge holders. He has been working with indigenous communities in Saskatchewan since 2011. One of his passion projects is to bring awareness to the changes occurring in the Saskatchewan River Delta - at 10,000 km² - it is the largest Freshwater Delta in North America. He is the current chair of the Human Dimensions of Water Security Lab where he leads graduate students, postdoctoral fellows, and professional staff. Dr. Strickert is the recipient of the 2016 University of Saskatchewan Provost's Prize for Innovative Practice in Collaborative Teaching and the 2014 Award for Distinction in Outreach and Public Service. He is the Principle Investigator for Global Water Future's Crowd Sourcing Water Science project and is a co-investigator providing social science capacity on several Global Water Futures Programs. He lives with his wife Dr. Lori Bradford (his most frequent collaborator) and their two children Tasman and Aurelia in Saskatoon. In his free time he enjoys sailing, biking, paddling and being in the outdoors.



Dr. Colin Whitfield

Colin Whitfield is an Assistant Professor in the School of Environment and Sustainability and the Global Institute for Water Security at the University of Saskatchewan. He holds a BSc in Environmental Science from Simon Fraser University, and MSc and PhD degrees in Watershed Ecosystems from Trent University. Colin is an environmental scientist with an interest in understanding how pressures from human activities influence ecosystems, particularly at the watershed scale. Colin's research spans terrestrial to aquatic systems, including investigations of atmospheric pollution, catchment hydrochemistry, biogeochemistry, and aquatic greenhouse gas dynamics.



Dr. Markus Hecker

Markus Hecker is a Professor and Canada Research Chair in Predictive Aquatic Toxicology, with 21 years of experience in conducting research in ecotoxicology. He is considered a global expert in environmental risk assessment, ecotoxicogenomics, hazard characterization of contaminants in native fishes and amphibians, and development of alternatives to live animal testing. Dr. Hecker served as an advisor/expert to several national and international organizations including Environment and Climate Change Canada, Health Canada, the U.S. Environmental Protection Agency, the European Food Security Agency and the Organization for Economic Cooperation and Development. He is a member of the College of the Royal Society of Canada, and a visiting/guest professor at the Peking Union Medical College and Xiamen University, China. Dr. Hecker serves as an editor for Environmental Science and Pollution Research and Environmental Science Europe. Markus has authored or co-authored over 170 peer-reviewed papers, review articles, editorials and book chapters, and currently serves on the board of directors of the Society of Toxicology and Chemistry (North America).