

WATER DAY ON THE HILL
MARCH 10, 2020



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In partnership with Canada's Chief Science
Advisor, the Global Institute for Water Security at
the University of Saskatchewan is bringing
scientists and researchers from 14 institutes across
Canada to Ottawa to meet with parliamentarians
and senior federal officials to raise awareness
about issues around water security for Canada,
and share information on how scientific
knowledge can inform decision making.

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Aaron Berg Professor University of Guelph

Ali Nazemi Assistant Professor Concordia University

Amina Stoddart Assistant Professor Dalhousie University

Chinchu Mohan
Post-Doctoral Fellow
University of Saskatchewan

David Rudolph Professor University of Waterloo

Elmira Hassanzadeh Assistant Professor Polytechnique Montréal

François-Nicolas Robinne Post-Doctoral Fellow University of Alberta

Graham Gagnon Professor Dalhousie University

Grant Ferguson
Associate Professor
University of Saskatchewan

Jay Famiglietti Professor University of Saskatchewan

Jeffrey McKenzie Associate Professor McGill University

John Pomeroy Professor University of Saskatchewan



Julie Thériault Professor Université du Québec à Montréal

Lori Bradford Assistant Professor University of Saskatchewan

Markus Brinkmann Assistant Professor University of Saskatchewan

Nandita Basu Associate Professor University of Waterloo

Philip Marsh Professor Wilfrid Laurier University

Philippe Van Cappellen Professor University of Waterloo

Qianyu Chang Masters Student University of Guelph

Roger Beckie Professor University of British Columbia

Scott Higgins Research Scientist IISD Experimental Lakes Area

Sherry Schiff Professor University of Waterloo

Xander Huggins
PhD Student
University of Saskatchewan/
University of Victoria

Zoe Li Assistant Professor McMaster University





Aaron Berg Professor University of Guelph

Aaron Berg is a Canada Research Chair (Tier II) and Professor in the Department of Geography, Environment, and Geomatics at the University of Guelph. Dr. Berg leads a research program that is broadly focused on the observation, modeling, and analysis of soil moisture anomalies using hydrological models and satellite observations from several remote-sensing platforms (e.g. RADARSAT-2 and passive microwave sensors). More recently his research program has explored the use of Unmanned Aerial Vehicle (UAV) platforms using variety of sensors (multispectral, LiDAR, hyperspectral and thermal) for applications in agricultural remote sensing.



Ali Nazemi Assistant Professor Concordia University

Ali Nazemi is an Assistant Professor in the Department of Building, Civil and Environmental Engineering at Concordia University in Montreal. Prior to this, he worked shortly as a Senior Hydrologist for the Saskatchewan Water Security Agency and provided science support to the provincial government on regional water resource management and operation. He is a member of the Global Institute for Water Security and holds an Adjunct Professorship with the School of Environment and Sustainability at the University of Saskatchewan. His area of expertise is in hydrology, water resources engineering and climate change impact assessment. Dr. Nazemi's research focuses on developing new tools and methodologies for addressing water security challenges, under climate and anthropogenic changes. He is committed to communicating research findings with public and providing highquality training to the next generation of water security experts in Canada and elsewhere.



Amina Stoddart Assistant Professor Dalhousie University

Amina Stoddart is an Assistant Professor in the Department of Civil and Resource Engineering at Dalhousie University. She received her PhD in Civil Engineering from Dalhousie University in 2017 and began her academic appointment at Dalhousie University in 2018. Dr. Stoddart's research focuses on the development and optimization of treatment and monitoring technologies for the water and wastewater industry. She enjoys partnering with municipalities, individual communities and the private sector to address water and wastewater treatment challenges. Dr. Stoddart's notable achievements include a Standards Development Award from ASTM International for her work developing a new ASTM Standard Method that applies green chemistry to measure water quality in 2017 and an NSERC Discovery Grant and Launch Supplement in 2019. Dr. Stoddart aspires to advance wastewater treatment and monitoring technologies that are less energy and chemical intensive to support more sustainable water and wastewater treatment.



Chinchu Mohan Post-Doctoral Fellow University of Saskatchewan

Chinchu Mohan is a groundwater hydrologist specialized in climate change-groundwater-food nexus. She did her PhD from the University of Melbourne, Australia in which she evaluated the global groundwater depletion due to irrigated food production. She also worked as a Post-Doctoral Fellow at the same university in collaboration with the Australian Federal Department of Environment, Land, Water, and Planning, evaluating Australian droughts. Recently, she joined the Global Institute for Water Security as a Post-Doctoral Researcher.



David Rudolph Professor University of Waterloo

David Rudolph, PhD, PEng. is a Professor in the Department of Earth and Environmental Sciences at the University of Waterloo. Dr. Rudolph's areas of research include field investigation and modeling related to groundwater flow and contaminant transport with a focus on regional groundwater flow systems and vulnerability assessment. He has participated with municipal and provincial authorities both nationally and internationally in the development of groundwater protection and management strategies and has provided science-based advice in the formulation of related policy tools. Rudolph has led nation-wide research teams working on prioritizing risk to water quality from agricultural practices and evaluating performance of beneficial management practices. He recently served as the founding Executive Director of the Water Institute at the University of Waterloo. Rudolph was the 2010 recipient of NGWA's M. King Hubbert Award for contributions to the field of hydrogeology and the 2013 NGWA Darcy Lecturer in Ground Water Science.



Elmira Hassanzadeh Assistant Professor Polytechnique Montréal

Elmira Hassanzadeh is an Assistant Professor in the Department of Civil, Geological and Mining Engineering at Polytechnique Montréal since 2018. Her research focuses on managing water resources systems under changing natural and anthropogenic conditions. Before joining Polytechnique, Elmira worked as a Research Associate at McGill University and did a Post-Doctoral Fellowship at the University of Saskatchewan. She completed her PhD in Civil Engineering at the University of Saskatchewan, where she proposed new methodologies to support water management in uncertain futures. Her research has been published in leading journals and has attracted the interest of the scientific community, including her article on the modeling of Lake Urmia, in Iran, which is the most cited article on this lake to date.



François-Nicolas Robinne Post-Doctoral Fellow University of Alberta

François-Nicolas began studying wildfire risks in Southern France, both in the Mediterranean basin and the Pyrenees Mountains, where changes in traditional fire use coupled with expanding wildlandsociety interfaces have been leading to increasing fire danger. After his MSc in 2007, he spent several years as a remotesensing analyst and GIS specialist for forest resource management in the private sector in France. In 2013, he started his PhD at the University of Alberta, focusing on the assessment of wildfire risks to global water security. He is now working as a Post-Doctoral Fellow at the Canadian Partnership for Wildland Fire Science, under the Global Water Futures research initiative. His current research mainly focuses on the study of wildfire risks to hydrologic ecosystem services and water security in Canada.



Graham Gagnon Professor Dalhousie University

Graham Gagnon is the Associate Vice
President Research at Dalhousie University,
where he also serves as the NSERC - Halifax
Water Industrial Research Chair in Water
Quality & Treatment in the Centre for
Water Resources Studies. Dr. Gagnon's
research engages many community
concerns with drinking water quality. His
particular research in Indigenous drinking
water quality has contributed to the support
of the Atlantic First Nation Water
Authority – a unique First Nation-owned
and operated organization that is focused on
ensuring safe water in its supporting
communities.



Grant Ferguson Associate Professor University of Saskatchewan

Grant Ferguson holds a B.Sc. in Honours Geology from the University of Waterloo and a PhD in Civil Engineering from the University of Manitoba. He is a Centennial **Enhancement Chair and Associate Professor** in the Department of Civil, Environmental and Geological Engineering and School of Environment and Sustainability at the University of Saskatchewan and an Adjunct Associate Professor at the University of Arizona. His research focuses on hydrogeology and hydrogeochemistry of regional groundwaters systems and the interplay between energy and water resources. He was the 2019 recipient of the Global Institute for Water Security's Research Excellence Award and is the past president of the International Association of Hydrogeologists - Canadian National Chapter.



Jay Famiglietti Professor University of Saskatchewan

Jay Famiglietti is a Professor of Hydrology and Executive Director of the Global Institute for Water Security at the University of Saskatchewan (USask), where he holds the Canada 150 Research Chair in Hydrology and Remote Sensing. Before moving to USask, Famiglietti served as the Senior Water Scientist at NASA's Jet Propulsion Laboratory at the California Institute of Technology. His research group uses satellites and develops advanced computer models to track how freshwater availability is changing around the globe. Their work has affected water policy changes from California to India. A Fellow of the American Geophysical Union and the Geological Society of America, Famiglietti is a regular advisor to state, provincial and federal government officials on water security issues.



Jeffrey McKenzie Associate Professor McGill University

Jeffrey McKenzie is an Associate Professor and Chair of the Department of Earth and Planetary Sciences at McGill University. Jeffrey is a hydrogeologist with research focused on understanding the 'science behind groundwater resources'. Much of his research focuses on how climate change is impacting groundwater in cold regions, such as high mountains and Northern Canada. Jeffrey received a B.Sc. from McGill University, and a PhD from Syracuse University. He was a Byrd Polar Research Fellow at The Ohio State University before becoming a faculty member at McGill University.



John Pomeroy Professor University of Saskatchewan

John Pomerov is the Director of the Global Water Futures Programme - the largest university-led freshwater research project in the world. At the University of Saskatchewan, Dr. Pomerov is the Canada Research Chair in Water Resources and Climate Change, Distinguished Professor of Geography, 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 and is the 2019 recipient of the Miroslaw Romanowski Medal from the Royal Society of Canada. He leads the International Network for Alpine Research Catchment Hydrology project of the World Climate Research Programme. Dr. Pomeroy has authored over 350 research articles and several books that have been cited over 15,000 times on the impact of land use and climate change on hydrology and water resources.



Julie Thériault
Professor
Université du Québec à Montréal

Julie Thériault is a Professor at the Department of Earth and Atmospheric Sciences at the Université du Québec à Montréal and has a Canadian Research Chair in Extreme Winter Weather Events. She is known for her research on the formation processes of winter precipitation types such as freezing rain and ice pellets, rain-snow transitions as well as snow measurements. She also utilizes state-of-theart approach such as high resolution atmospheric and climate models as well as results from targeted field projects.



Lori Bradford Assistant Professor University of Saskatchewan

Lori Bradford is an interdisciplinary scientist specializing in community-engaged participatory research on water, health and wellbeing in Indigenous and non-Indigenous rural communities. A social psychologist by training, and methodologist, she focuses on enhancing coping skills, promoting adaptation, and co-developing solutions for complex problems in communities. Dr. Bradford bring skills in negotiating community-based research and co-creating culturally harmonized research programs that bring Indigenous groups and Western scientists together to address socially significant problems, for example, water security and governance, shared resource use, and urban migration. She facilitates the creation of interdisciplinary training opportunities for students, art-science collaborations, evidence-based and culturally relevant policy recommendations and action plans, and translation of results into best practices for enhancing biopsychosocial health.



Markus Brinkmann Assistant Professor University of Saskatchewan

Markus Brinkmann received his PhD from Aachen University in Germany and is currently an Assistant Professor in Exposure and Risk Assessment Modelling in the School of Environment and Sustainability at USask. He is a member of the Toxicology Centre, the Global Institute for Water Security, and the Centre for Hydrology. Dr. Brinkmann's research focuses on the movement of chemical contaminants through the aquatic environment and the process by which these contaminants are taken up and cause harmful effects in aquatic organisms. He combines expertise from toxicology, environmental chemistry, and hydrology, and uses computational models that are informed by experimental and field data. Some of his recent projects have focused on assessing the environmental impacts of storm water and municipal wastewater effluents in cities across Canada, measuring sediment contamination in the Saskatchewan River, quantifying risks associated with oil sands developments, and improving the prospective environmental risk assessments of chemicals.



Nandita Basu Associate Professor University of Waterloo

Nandita Basu is an Associate Professor and University Research Chair, jointly appointed in the Departments of Civil and Environmental Engineering and Earth and Environmental Sciences at the University of Waterloo. She is also the Director of the Collaborative Water Program at the University of Waterloo, Member of the Royal Society of Canada, College of New Scholars, and Editor-in-Chief of Journal of Hydrology. Nandita is a watershed hydrologist and biogeochemist, and her research interests span a broad range of issues related to water in human-impacted environments. From problems of nutrient pollution of surface and groundwater in intensively farmed regions in Canada and US, to drought in water-stressed areas of India to urban water pollution and water quality effects of wildfire, Nandita uses tools from environmental science, engineering and the social sciences to improve our ability to sustainably manage water resources.



Philip Marsh Professor Wilfrid Laurier University

While a Research Scientist with ECCC and a Professor at Laurier, Philip Marsh has focused entirely on the water resources of the Canadian Arctic. This research has developed a fundamental understanding of, and ability to predict, the hydrology of the Arctic. Dr. Marsh has applied this research to understand the environmental impacts of highways, hydroelectric dams, hydrocarbon development, and pipelines across the north. In collaboration with various Indigenous organizations, understanding the impacts of climate change has become the focus of his research. He initiated climate and water measurements in the western Canadian Arctic in 1991 and now has the longest set of climate and water data in the Canadian Arctic, providing us with a unique viewpoint of ongoing changes. This research facility has attracted collaboration with colleagues from ECCC, and many other Universities and scientists from the USA. Germany and the UK. Dr. Marsh is also one of the Canadian representatives on the International Arctic Science Committee.



Philippe Van Cappellen Professor University of Waterloo

Philippe Van Cappellen joined the University of Waterloo as the Canada Excellence Research Chair in Ecohydrology on June 1, 2011. He was previously the Georgia Research Alliance Eminent Scholar in Global Environmental Studies at the Georgia Institute of Technology in Atlanta, USA, and a Professor of Geochemistry at Utrecht University in the Netherlands. Van Cappellen is a Fellow of the Royal Society of Canada and a Fellow of the Geochemical Society. Dr. Van Cappellen's research combines detailed laboratory studies with field observations and theoretical modeling to better understand and predict how natural processes and human activity control water quality and the environmental flows of nutrients and contaminants from the local to global scale. His work encompasses investigations of the environmental health of soils, rivers, lakes, and coastal environments, the cycles of water, carbon, nutrients and metals, water quality risks and nature-inspired solutions, and global environmental change.



Qianyu Chang Masters Student University of Guelph

Qianyu Chang is a Master of Science candidate in the Department of Geography, Environment and Geomatics at the University of Guelph, under the supervision of Dr. Aaron Berg. Qianyu is passionate about understanding climate change impacts on Arctic ecosystems using remote sensing tools. Her MSc project evaluates the use of satellite images for mapping shrub biomass in the Arctic tundra and estimating shrub rainfall interception, an important component in Northern water cycles.



Roger Beckie Professor University of British Columbia

Roger Beckie is a groundwater hydrogeologist, Professor and former Head of Earth, Ocean and Atmospheric Sciences at the University of British Columbia. His scholarly interests include: i) understanding the impacts of shale-gas development on near-surface groundwater in northeast British Columbia, ii) the hydrology and geochemistry of drainage from waste rock at mine sites, iii) groundwater contamination and remediation related to oil spills, methane leaks and industrial solvents such as creosote. He is problem driven, using laboratory and field studies interpreted with process-based models. He has substantial field experience in NE BC, in Peru at the Antamina mine, in South Asia studying the biogeochemistry of naturally occurring arsenic in groundwater, and in the Lower Mainland of British Columbia studying the fate of creosote-derived contamination in anaerobic deltaic aquifers.



Scott Higgins
Research Scientist
IISD-ELA

Scott Higgins is a Research Scientist at the International Institute for Sustainable Development Experimental Lakes Area (IISD-ELA), a Canadian research-based nonprofit organization. The IISD-ELA operates a globally unique research facility; one of only a few research facilities in the world where whole ecosystem experiments are permitted to address threats to our freshwater resources. Dr. Higgins and other researchers from the IISD-ELA collaborate extensively with academic and government researchers from Canada, the United States, and other countries on experiments to examine: the effects and most effective cleanup technologies for oil (diluted bitumen) spills to freshwater; how to most effectively manage toxic algal blooms and reduce threats to drinking water; and the effects of microplastics, prescription medicines (e.g. the diabetes drug metformin) and effluent from cannabis grow operations on Canada's lakes and rivers. Dr. Higgins is also using the IISD-ELA's long-term (>50 years) datasets to evaluate the effects of climate change on lake ecosystems.



Sherry Schiff Professor University of Waterloo

Sherry Schiff is an environmental geochemist, Professor and a previous University Research Chair holder at the University of Waterloo with special interest in water issues of importance to society including the effects of climate change and human legacies on nutrient cycling and water quality, contaminants, eutrophication and aquatic ecosystem health. She has specialized expertise in watershed biogeochemistry and development and application of novel isotopic techniques. Her field sites span the globe from New Zealand to the very tip of the high arctic in Canada with studies on groundwaters, wetlands, rivers and lakes both in human impacted watershed in agricultural and urban settings and in pristine ecosystems. Currently, her major research focus is on changing water quality, carbon fluxes, eutrophication, permafrost thaw and climate change in Canada's Boreal Shield from the southern boreal to the subarctic boreal and low tundra.



Xander Huggins PhD Student University of Victoria

Xander Huggins is a PhD student at the University of Victoria and University of Saskatchewan. His research investigates the socioeconomic and ecological impacts of changes in global freshwater availability, water security metrics, groundwater sustainability, and groundwater-surface water interactions, and environmental flow policy. Prior to beginning his PhD, Xander's research collaborated with a British Columbian environmental data science firm to develop methods for an online water management decision support tool to enable the conjunctive management of groundwater and surface water resources. He holds a Bachelor of Engineering degree in Water Resources Engineering with Distinction from the University of Guelph.



Zoe Li
Assistant Professor
McMaster University

Zhong (Zoe) Li is an Assistant Professor of Civil Engineering at McMaster University. Her research focuses on hydroenvironmental modeling and climate impact assessment. As an early career researcher, she has published over 40 peer-reviewed journal papers and has been the sole Principal Investigator of over 10 research grants/projects. She also served as a United Nations Development Programme (UNDP) project advisor during 2014-2016. The stochastic simulation, uncertainty quantification, optimization, and risk assessment techniques that she proposed have been used by her peers in water resources and environmental engineering in Canada and abroad.

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