Field	Response
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2. Please indicate the alignment of your research expertise to one or more of the following GWF objectives/ deliverables:	Predict water futures - use Big Data to make informed decisions, better models to assess change in human/natural land and water systems Inform adaptation to change and risk management - propose governance mechanisms, management strategies, and policy tools to reduce the risk of water threats, design adaptive strategies, and enhance economic opportunities
3.1 Please indicate the alignment of your research expertise to the GWF Science Pillar 1 - Diagnosing and Predicting Change in Cold Regions:	Water Quality and Aquatic Ecosystems - improve understanding and prediction of how climate changes in climate, hydrology, and land use impact water quality and the health of aquatic ecosystems Water and Health - determine how changes to climate, extreme events, hydrology and water quality will affect human health in urban, rural and Indigenous communities
3.2 Please indicate the alignment of your research expertise to the GWF Science Pillar 2 - Developing Big Data and Decision Support Systems:	
3.3 Please indicate the alignment of your research expertise to the GWF Science Pillar 3 - Designing User Solutions:	Water Environment - ecosystem health and conservation, water management

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4. Please indicate the alignment of your research expertise to one or more of the following user needs:	Risk reduction and analysis tools, including forecasts of floods, droughts, wildfires, and freezing rain (and other weather and climate extremes); water quality assessments; disease risk analyses; and integrated assessments. These tools alert industry and government to potential problems and allow cost/benefit analyses for potential risk mitigation.
5. Please list regions of Canada and the biomes (e.g. mountains, boreal forest, Great Lakes-St Lawrence), watersheds, and/or river basins where you are interested in conducting research for GWF:	Great Lakes-St Lawrence, boreal forest, ephemeral ponds in forest biomes.
6. Please list any other expertise or recent experience (subjects, river basins, technology) not covered by above query that could help us in assessing your alignment with the GWF programme:	Recently have developed amphibian skin cell lines for use as an in vitro system for rapid screening of abiotic factors (temperature, contaminants), alone or in combination, that may impact frog health and disease resistance to emerging viral pathogens. As sentinel animals for overall ecosystem health, frog cells can be used as a system to screen for potential perturbations in water quality and predicting effects in aquatic species. These cells originate from the model frog, Xenopus laevis, and thus Big Data generation strategies (NGS, transcript quantification) can be used in conjunction with the readily available sequenced genome to make large scale predictions on molecular, cellular and whole animal physiology impacts of differing water qualities on aquatic and terrestrial vertebrates.