

Field	Response
1. Contact Information   Name	Dwight Makaroff
1. Contact Information   Department	Computer Science
1. Contact Information   Email	<a href="mailto:makaroff@cs.usask.ca">makaroff@cs.usask.ca</a>
1. Contact Information   University	Saskatchewan
1. Contact Information   Personal Web Page	<a href="http://www.cs.usask.ca/faculty/makaroff">www.cs.usask.ca/faculty/makaroff</a>
1. Contact Information   Phone	306-966-8656
2. Please indicate the alignment of your research expertise to one or more of the following GWF objectives/ deliverables:	<p>Improve disaster warning – develop scientific knowledge, monitoring and modelling technologies, and national forecasting capacity to predict the risk and severity of extreme events</p> <p>Predict water futures – use Big Data to make informed decisions, better models to assess change in human/natural land and water systems</p>
3.1 Please indicate the alignment of your research expertise to the GWF Science Pillar 1 – Diagnosing and Predicting Change in Cold Regions:	
3.2 Please indicate the alignment of your research expertise to the GWF Science Pillar 2 – Developing Big Data and Decision Support Systems:	<p>Big Data for Water – sensors, sensing, instrumented river basins, data analysis systems</p> <p>Decision Support Systems – predictive and diagnostic modelling system development and deployment for hydrology, water quality and water resources</p>
3.3 Please indicate the alignment of your research expertise to the GWF Science Pillar 3 – Designing User Solutions:	

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<p>4. Please indicate the alignment of your research expertise to one or more of the following user needs:</p>	<p>Projects to improve environmental monitoring, including sensors, drones, satellites, river basin observatories, lake buoys, software development, chemical fingerprinting, real-time monitoring, citizen science, and integration of Big Data platforms for Cold Region water science. 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.</p>
<p>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:</p>	<p>Any of these systems would be appropriate and relevant to collection of data and processing. I'm most interested in watersheds and basins in the prairies and boreal forest.</p>
<p>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:</p>	<p>Recent experience with big data analysis frameworks, such as Hadoop and Spark. Exploring system configuration for machine learning techniques for genomic and image analysis in that space. Acquainted with sensor data collection and performed extensive research of routing through wireless sensor networks. Particular aspects of interest are delay-tolerant-networks, security and privacy of sensor information and energy-aware communication and processing techniques.</p>