

Field	Response
1. Contact Information Name	Jeff McDonnell
1. Contact Information Department	GIWS
1. Contact Information Email	jeffrey.mcdonnell@usask.ca
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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
3.1 Please indicate the alignment of your research expertise to the GWF Science Pillar 1 – Diagnosing and Predicting Change in Cold Regions:	Hydrology and Terrestrial Ecosystems – improve understanding and prediction of hydrological and terrestrial processes and watershed hydrology and how processes and systems will evolve and interact under a changing climate
3.2 Please indicate the alignment of	

your research expertise to the GWF Science Pillar 2 – Developing Big Data and Decision Support Systems: Big Data for Water – sensors, sensing, instrumented river basins, data analysis 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 Energy & Natural Resources – including mining and hydroelectricity

4. Please indicate the alignment of your research expertise to one or more of the following user needs: 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.

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: All....across a diverse set would be useful. I am working on a watershed classification system that incorporates basic hydrogeomorphic and hydrogeological factors that can be used to classify concentration–discharge relations, flow duration curves and mean transit times. It could possibly be useful to test this across these diverse watersheds.....as a way to say something quantitative in data sparse watersheds across Canada .

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6. Please list any other expertise or recent experience (subjects, river basins, technology) not covered	I'm not sure how my research might be useful, but I could imagine isotope tracing of river systems (ideally linked to Water Survey of Canada measurement program) to be a potent tool. I'd be keen to follow-up from http://www.usask.ca/watershed/pdf/ngeo2636.pdf to explore what proportion of the study watersheds in the GWF system have water that is less than 3 mo old; and to follow-up on http://www.usask.ca/watershed/pdf/2012/Stewart%20et%20al%202012%20The%20hidden%20streamflow%20challenge%20in%20catchment%20hydrology.pdf to quantify the old tail of the transit time distribution and in so doing, quantify the "resilience to change" hidden from stable isotope and hidden from
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12/9/2016

Global Water Futures - Research Expertise Scan - Response

by above
query that
could help
us in
assessing
your
alignment
with the
GWF
programme:

to quantify the old tail of the transit time distribution and in so doing, quantify the sensitivity to change hidden from stable isotopes and hidden from melt-runoff analysis. But again, I realize that this may be too basic and too difficult to link to stakeholder needs. So, in the end, my alignment to the GWF may not be good in the end--but I'll certainly champion the cause nonetheless!