Field	Response
1. Contact Information | Name	Kevin Lamb
1. Contact Information | Department	Applied Mathematics
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1. Contact Information | Personal Web Page	https://uwaterloo.ca/applied-mathematics/people-profiles/kevin-lamb
1. Contact Information | Phone	888-4567 x36246
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:	Hydrometeorology and Climate Change – improve understanding and prediction of how climate change influences water availability and extreme events 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 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
3.2 Please indicate the alignment of your research expertise to the GWF Science Pillar 2 – Developing Big Data and Decision Support Systems:	Decision Support Systems – predictive and diagnostic modelling system development and deployment for hydrology, water quality and water resources
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:	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. Model development to support climate change impact assessment, including regional climate change modeling, hydrological and ecological modeling, specifically involving improvements in forecasting and predictive capacity, downscaling, and scenario development of water futures.
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:	Any lakes, small or large. I have worked on the Laurentian Great Lakes (Lake Erie) but am interested in physical processes in lakes in general (e.g., thermal bar affects, inshore-offshore exchange, upwelling events, physical processes in the bottom boundary layer leading to sediment resuspension, etc.). Modelling the coupling between lakes with river/bog systems would be of interest.
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:	My expertise is in stratified flows and computational fluid dynamics. This includes both running large hydrodynamics models and the developing of computational fluid dynamics codes. I have been involved in a project in Lake Erie that included coupled hydrodynamic-biogeochemical modelling which included modelling the effects of future climate change on dissolved oxygen. The project included some field work (not done by me) and comparison of model results with observations. Last summer I started a project on upwelling of hypolimnetic water motivated by upwelling of hypoxic water in Lake Erie.