UNIVERSITY OF SASKATCHEWAN
Global Water Futures
GLOBAL INSTITUTE FOR WATER SECURITY
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AGRICULTURAL WATER FUTURES IN CANADA: STRESSORS & SOLUTIONS (AWF)

Post-Doctoral Fellowship: Current and Future Water Quality in Canadian Agriculture

This position is in Saskatoon with the University of Saskatchewan, Environment and Climate Change Canada and Agriculture and Agri-Food Canada.

As part of the AWF collaboration between the University of Saskatchewan, the University of Waterloo and Wilfred Laurier University, this position will work towards the overall goal of determining how Canadian agriculture and food production systems can best respond to risk and uncertainty associated with current and future climatic and socioeconomic stressors. The water quality component of the project will be accomplished through development of a process-based understanding of the individual and combined controls of climate and geomorphic conditions on nutrient mobilization, and evaluation of impacts of land management practices on water quality. The knowledge gained will contribute to the development of nutrient transport models designed for cold regions that will predict how runoff patterns and pathways may change in the future.

The post-doctoral research will largely focus on the synthesis and modelling of existing historical data sets from Manitoba and Saskatchewan; however, new and ongoing field studies will also be used to fill data gaps. This work will improve our understanding of the role of climate [e.g. winter conditions (frequency, duration and magnitude of mid-winter thaws), frozen ground (depth and extent under variable antecedent moisture conditions), and precipitation patterns (phase, mechanisms, duration, intensity, amount)] on runoff timing and pathways, their associated nutrient fluxes (concentrations, loads, speciation), and how response to climatic conditions are influenced by soil geomorphic factors (texture, slope, location in watershed). It will involve development of statistical relationships between nutrient mobilization and climate-landscape metrics and identification of a hierarchy of controls on nutrient flushing processes.

Applicants must have a PhD in a relevant environmental science field and have a track record of research productivity, including peer-reviewed publications. Previous postdoctoral experience is desirable, but not necessary. Preference will be given to candidates with experience in both hydrology and water quality but those with expertise in either discipline will be considered.

Some knowledge of agricultural production is an asset. An additional desired qualification is expertise in large dataset analysis and manipulation.

Applicants will be expected to have good communication skills and be fluent in English. They must be able to work independently, as well as within a multidisciplinary research team. They will be expected to produce peer-reviewed journal publications and technical reports.

This term position will be for up to three years, commencing as soon as possible. The salary offered will be based on training, education, and experience.

To Apply or for Further Information Please Contact:
(include PDF-Agricultural Water Quality in the subject line)
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