3 PhD positions in the Global Water Futures program

The Global Water Futures (GWF) program is the largest university-led climate and freshwater research program in the world. GWF currently has several new employment opportunities to advance mechanistic model simulations of hydrological processes across Canada and the world. Current opportunities include two research scientists, six postdoctoral fellows, and **three PhD students** (see other job postings for more details).

USask's Peyto Glacier Research Site in Banff, AB

Successful candidates will have the opportunity to work for the largest water modelling project ever conducted in Canada, with global scope, working with GWF Director John Pomeroy, GWF Core Modelling Co-leads Al Pietroniro and Martyn Clark, and other faculty across the GWF partner universities. Even though these are primarily modelling positions, researchers will be encouraged to become involved in field studies in well-instrumented research basins that are located in the spectacular landscapes of western Canada. Work locations include the Canmore Coldwater Laboratory in the Canadian Rocky Mountains and Innovation Place on the University of Saskatchewan campus in Saskatoon.

Currently, the GWF program consists of more than 500 stakeholders/users, 190 funded faculties from 18 Canadian universities and over 900 research personnel working on 51 projects, and core teams, including modelling and forecasting, computerscience, knowledge mobilization, data and technical teams. Additional information is available at: https://www.globalwaterfutures.ca/

3 PhD students in computational hydrology.

Three PhD positions are available in the general area of computational hydrology, to build tools to simulate and predict hydrologic processes. The research can span spatial scales from hillslopes to continents and time scales from seconds to centuries. Some potential contributions include ensemble forcing data for large-domain hydrological models, multi-scale hydrological models, continental-domain network routing models, ensemble methods for data assimilation, and process-based methods for model benchmarking and model evaluation. Model development work is targeted toward applications in streamflow forecasting, water security assessments, and improving the representation of hydrological processes in Earth System models. Successful candidates will become experts in process-based hydrological modelling, gaining the understanding and tools that are necessary to develop and apply models across a broad range of landscapes. The PhD students will be supervised by Prof. Martyn Clark and enrolled in the University of Saskatchewan; work locations include the Canmore Coldwater Laboratory in the Canadian Rocky Mountains and the University of Saskatchewan.

USask PhD Candidate Caroline Aubry-Wake at the Marmot Creek Research Site in Kananaskis, AB

Expectations: The applicants should have experience and expertise with developing and applying complex process-based models, the use and analysis of big data, and comprehensive model evaluation. Applicants should have a background in physical hydrology, hydrometeorology, or water resources engineering. The applicants should also have experience with software configuration management (e.g. git, svn), experience with effective model testing protocols, experience with programming in multiple programming/scripting languages, experience with creating effective documentation, and experience with parallel computing. Successful applicants will be comfortable working in a team environment and highly engaged in collaborative model development activities. They will be expected to publish regularly in peer-reviewed international journals and present their work at international science meetings.

Duration: These are term positions up until August 31, 2023, commencing as soon as possible.

Application Procedure: To be considered for this opportunity, please submit the following documents to Dr. Prabin Rokaya, Manager, Core Modelling and Forecasting Team, GWF via email

(prabin.rokaya@usask.ca), specifying in subject line which post you are applying to:

- a statement of purpose (3-5 pages) that details relevant academic excellence, research abilities, communication, interpersonal and leadership qualities
- an updated curriculum vitae (max. 10pages)
- evidence of previous research productivity as demonstrated by authorship of refereed journal publications and conference presentations/publications
- names of three referee

Prospective candidates are encouraged to visit the following websites for details:

- Global Institute for Water Security:https://water.usask.ca/
- Global Water Futures: https://gwf.usask.ca/

The USask is located in Saskatoon, Saskatchewan, a city with a diverse and thriving economic base, a vibrant arts community and a full range of leisure opportunities. The University, a member of the U15 group comprising Canada's leading research-intensive universities, has a reputation for excellence in teaching, research and scholarly activities and offers a full range of undergraduate, graduate, and professional programs to a student population of over 23,000. Information about the University, and the City of Saskatoon can be found at www.usask.ca and https://tourismsaskatoon.com.

We thank all applicants for their interest; however, only candidates selected for an interview will be contacted.

Closing date: Open until all positions are successfully filled; review to begin by January 31, 2020

The University of Saskatchewan is strongly committed to a diverse and inclusive workplace that empowers all employees to reach their full potential. All members of the university community share a responsibility for developing and maintaining an environment in which differences are valued and inclusiveness is practiced. The university welcomes applications from those who will contribute to the diversity of our community. All qualified candidates are encouraged to apply; however, Canadian citizens and permanent residents will be given priority.

Contact Information:

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