



GLOBAL WATER FUTURES

1 Postdoctoral Fellow / Research Scientist Position – Core Computing Team

Global Institute for Water Security, University of Saskatchewan, Canada

Context and Purpose: Global Water Futures (GWF) is a transformative pan-Canadian research programme, led by the University of Saskatchewan (U of S), which aims to place Canada as a global leader in water science for the world's cold regions and to address the strategic needs of the Canadian economy in adapting to change and managing the risks of uncertain water futures, including extreme events. GWF is transdisciplinary, working with a wide range of users and integrating the natural, social, health, and engineering sciences to provide disaster warning, improved prediction of climate and water futures, and the decision support tools needed to inform adaptation to change and risk management.

This seven-year, \$143-million program builds on the expertise of the U of S and three key partner universities (McMaster, Waterloo, and Wilfrid Laurier), faculty from 14 other universities, and eight federal agencies, together with strong international collaboration. To enhance the capability of the U of S and Canada to deliver transformative water modelling science, the Global Institute for Water Security (GIWS) at U of S invites applications from outstanding candidates for the following postdoctoral fellow (PDF) / research scientist position:

Improved Scalability of Hydrological Modelling Tools: The Canadian Hydrological Model (CHM) is a multi-physics modelling software framework for the computer simulation of hydrological processes. It is a key component of the GWF core modelling effort. In order to run CHM in both research and operational modes for the domains of interest for the GWF, e.g., Yukon, Western Canada, all of Canada, CHM must evolve from shared-memory parallelism to distributed-memory parallelism. This is expected to be a highly non-trivial undertaking because it must consider multi-objective load balancing based on multiple disparate processes, e.g., numerical, physical, and topographical. The inclusion of fully coupled processes, e.g., blowing snow and shallow water flow, further adds to the challenge.

Qualifications: Outstanding applicants are sought who have a demonstrated ability to undertake internationally leading research. They must have: relevant post-graduate training (Ph.D. or PDF); a Ph.D. awarded within the last five years; a proven track record of modeling, numerical analysis, and high-performance computing research; and proficiency in C++ programming and use of MPI and OpenMP. Evidence of leading-edge publications in the scientific literature is required, as are strong written and oral communication skills in the English language. An ability to work in a highly collaborative, multidisciplinary team must be demonstrated. Expertise in large dataset analysis and manipulation is desirable.

Salary Information: The salary offered will be in the range of \$45,000-\$90,000 CAD, based on training, education, and experience.

Duration: This term position will be for up to two years, commencing as soon as possible.

Application Procedure: Please submit the following documents via email:

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

Contact Information:

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

- Global Institute for Water Security: <http://www.usask.ca/water/>
- Global Water Futures: <http://gwf.usask.ca/>

The U of S 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 U of S is a member of the U15 group comprising Canada's leading research-intensive universities. It 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, <http://tourismsaskatoon.com>, and <http://www.downtownsaskatoon.com>.

Closing date: Open until position is successfully filled

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 practised. 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. We thank all applicants for their interest; however, only short-listed candidates will be contacted.