a place of mind
THE UNIVERSITY OF BRITISH COLUMBIA

HydroGeoScience for Watershed Management
Research Group

Postdoctoral Fellow Position:

Identifying Causes of Hydrological Disturbances Under a Changing Climate: A Statistical Machine Learning Approach

The Department of Earth, Ocean, and Atmospheric Sciences in collaboration with the Departments of Statistics at UBC and Simon Fraser University invites applications for a recently funded Post-Doc position on "Identifying Causes of Hydrological Disturbances Under a Changing Climate: A Statistical Machine Learning approach".

Project Aim:

The research will be conducted under the supervision of Dr. Ali Ameli and will include interactions with a collaborative mentoring team comprised of investigators at UBC's Statistics and SFU's Statistics spanning expertise in Hydrology, Climatology, Functional Data Analysis, and Gaussian Processes. The successful candidate will develop new generalizable statistical learning tools using multivariate functional data to 1) identify causes and consequences of hydrological disturbances (e.g., flood, drought, drought-driven wildfire); 2) identify individual and interactive controls on landscape vulnerability to multi-dimensional hydrological disturbances; and 3) explore bi-directional feedbacks between hydrological disturbances and the functions of earth systems. In doing so, the successful candidate will work with a recently-developed database. Opportunities are available for professional development in grant writing, scientific communication, mentorship and leadership.

The Ideal Candidates Will Have:

- Sound knowledge of statistical methods for causal inference
- Experience with learning from high-dimensional data and/or multivariate functional data
- Experience with model scripting/programming
- Basic knowledge of GIS tools and techniques
- Excellent communication skills in English
- Basic knowledge of hydrology and climate sciences (an asset, but not necessary)
- A strong interest in writing manuscripts related to hydro-climatology and climate change impact assessment

Candidates from disciplines including, Civil, Geological or Environmental Engineering, Statistics, Computer Science, Earth Sciences, Environmental Sciences, Physical Geography, Forestry and similar disciplines are encouraged to apply.

Research Group:

The host research group HydroGeoscience for Watershed Management (HG-WM), at the Department of Earth, Ocean, and Atmospheric Sciences, is an interdisciplinary research group lead by Dr. Ali Ameli. The group uses mechanistic and statistical modelling approaches to generate scientific evidence required to inform watershed management and to regulate the environmental impacts of climate change. The research group is a part of UBC's Geological Engineering program – a program with over 100 years of rich history.

For more information, please visit: www.hydrogeosciencewatershedmanagement.com/

Applications should include: i) a cover letter with detailed explanations on how the applicant meets the requirements for the position, ii) a curriculum vitae, iii) academic transcripts, and iv) the names and contact information of three professional references. Application materials should be combined into a single PDF document and be sent to Hg.wm.contact@gmail.com, by **Monday, February 1, 2021.**