Post-Doctoral Researcher – Numerical modelling of river flows at large and fine scales in support of a hydroelectric dam renewal project

Key skills: Hydrodynamic and sediment transport and computational fluid dynamics modelling

Mactaquac Generating Station
Photo credit: NB power

The Canadian Rivers Institute (UNB Fredericton) is seeking candidates for a numerical modeller to join the Mactaquac Aquatic Ecosystem Study (see "MAES" link below) working on fish passage and environmental flows related to a large river and dam (see "NB Power" link below). They will (1) use Delft3D to simulate the hydrodynamics and sediment transport of a large river, (2) use Flow3D to simulate fine-scale flows within the approaches to a fish passage facility, (3) assist graduate students and other team researchers using numerical modelling to address their research questions, (4) participate in the design, management and execution of programs for collecting the modelling data, e.g., flow, bathymetry, substrate, and (5) communicate to a variety of audiences.

We are seeking highly motivated candidates with strong quantitative and analytical skills with a doctoral degree in Mechanical, Civil, or Environmental Engineering, or similar engineering-based program. MAES is a highly interdisciplinary team and the numerical modeller will interact regularly with other researchers and graduate students from engineering to hydrology to biology, the public and the industry partner. The selected candidate will possess both skills and experience modelling natural open-channel flows using Delft-3D, Flow3D, or equivalent numerical solver. Experience (either modelling or field) working with large rivers, fish passage or fish telemetry, and large hydropower facilities and hydropower industry is an asset.

The position is fully funded at $50,000 plus benefits for 1-2 years (duration depends on the candidate selected) and can begin by the summer, 2021. The deadline to apply is April 09, 2021.

The Researcher will be based at UNB Fredericton, Departments of Civil and Mechanical Engineering (see "UNB" link below) and supervised by Drs. Katy Haralampides and Tiger Jeans. Prospective candidates should send the following to Gordon Yamazaki, MAES Project Manager (gordon.yamazaki@unb.ca): a) a cover letter outlining how they meet the criteria above, b) a full academic CV (unofficial is acceptable), and c) contact details (or be prepared to provide) for three references. Given the COVID-19 situation, search and start dates may be adjusted.

Links

MAES: http://www.canadianriversinstitute.com/maes

NB Power: https://www.nbpower.com/en/about-us/projects/mactaquac-project

UNB: https://www.unb.ca/fredericton/engineering/