UNIVERSITY of GUELPH

COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

Postdoctoral Researcher in Water Resources/Environmental Engineering

School of Engineering, University of Guelph

Fall 2021 start date

PROJECT: Nutrient dynamics in the hydrosystem of a Great Lakes clay plain system
ADVISORS: Dr. Jana Levison, P.Eng. and Dr. Andrew Binns, P.Eng.
START DATE: Flexible between September 2021 and January 2022
DURATION: 1 year

Project Description: Eutrophication in surface water within the Great Lakes Basin (GLB) is a perpetual concern. Climate change will result in changes to the amount and timing of rain and snow and hence to possible significant variations in stream flow, soil moisture and groundwater levels. Nutrient fluxes in agricultural watersheds will be impacted by these hydrological changes, since the rate and quantity of phosphorus and nitrogen transport through various pathways are often controlled by climate conditions. Understanding these possible impacts to improve water and land use management requires a long-term, integrated approach that addresses different components of the water cycle. The purpose of this research is to comprehensively examine the spatial and temporal evolution of phosphorus and nitrate in the hydrosystem (including ground-, stream, tile, and soil water, as well as stream sediments and soil) of a clay-dominated agricultural watershed in southwestern Ontario, Canada. The postdoctoral researcher will work closely with current MASc and PhD students working at the site, and will apply statistical and integrated modelling tools to understand the effect of a range of complex hydrologic, climate and agricultural conditions on the spatiotemporal distribution of nutrients at a watershed to subwatershed scale and at the groundwater-surface water interface.

The School of Engineering at University of Guelph is a leader in Water Resources Engineering. The research is funded by the Ontario Ministry of the Environment, Conservation and Parks (MECP), and is conducted in partnership with experts from MECP and the Ausable Bayfield Conservation Authority. There will be excellent opportunities for career growth including external collaboration, research mentorship of graduate students, and knowledge translation via publications and presentations at national and international conferences.

Pre-Requisite: PhD degree in Water Resources Engineering, Environmental Engineering, Civil Engineering, Geological Engineering, Agricultural Engineering, Earth Sciences, Environmental Sciences, Geoscience, Geology or related discipline. The ideal candidate will have integrated modelling expertise and knowledge of hydrological/hydrogeological field data collection techniques.

Please send your application to **Jana Levison** (jlevison@uoguelph.ca**), Andrew Binns** (binns@uoguelph.ca) and CC to **Pradeep Goel** (pradeep.Goel@ontario.ca). Include a covering letter outlining your interest in and suitability for this position, your CV, a copy of your (unofficial) university transcripts, and the names/contact information of two references. Applications will be reviewed when received.