



COLLEGE of ENGINEERING AND PHYSICAL SCIENCES

MASc positions in Water Resources Engineering or Environmental Engineering

School of Engineering, University of Guelph

Sept. 2023 (or Jan 2024) start date

POSITION: Nutrient dynamics in the hydrosystem of a vulnerable Great Lakes Sand Plain setting

ADVISORS: Dr. Jana Levison and Dr. Andrew Binns

START DATE: Sept. 2023 (or Jan. 2024)

DURATION: 2 years

STIPEND: available for 2 years

Project Description: Eutrophication in surface water within the Great Lakes Basin (GLB) is a perpetual and critical concern. Climate change will result in changes to the amount and timing of rain and snow and hence to possible significant variations to 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 is 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. This research will seek to advance knowledge of groundwater-surface water interaction, nutrient transport and the impact of climate change on nutrient losses by quantifying movements of nutrients (nitrogen and phosphorus) in the Norfolk sand plain system (in southern Ontario). Two Master's of Applied Science (MASc) positions are available.

MASc position #1 will focus on phosphorus transport in groundwater and to the groundwater-surface water interface in the study area.

MASc position #2 will focus on surface water and sediment transport data collection and the development of a sediment transport model for the study area.

Pre-Requisites: Bachelor's degree in Water Resources Engineering, Environmental Engineering, Civil Engineering, Geological Engineering, Earth Sciences, Environmental Sciences, Geoscience, Geology or related discipline.

Please contact **Andrew Binns** at binns@uoguelph.ca and **Jana Levison** at jlevison@uoguelph.ca for more information or to apply for the position. To apply, please send a cover letter outlining your interest in this position as well as how your background makes you a suitable candidate, resume/CV, and a copy of your unofficial transcript.