



BRANDON UNIVERSITY

Research Opportunity in the Master of Science (Environmental and Life Sciences) program at Brandon University

Project Title: High-Strength Materials for Road Stabilization

Principle Funding Partners: Mitacs, Cypher Environmental, Brandon University

This project is a Master of Science opportunity for a student interested in one or more of the following areas:

- Unpaved road stabilization
- geotechnical engineering
- mineralogy (especially clay and carbonates)
- glacial clay-rich deposits

Project Description: The M.Sc. intern will join the Brandon University-Cypher Environmental Team in their on-going research into the stabilization of unpaved roads using natural highly reactive cohesive clays, organic catalysts and suitable aggregate. The work includes in the lab geotechnical and mineralogical investigations and testing. The research includes a simultaneous and important field component of road building and monitoring carried out with our municipal partners. The particular focus of this research is the development and testing of high-strength and high-durability materials.

Support: The student will be under a Mitacs supported internship, and working with research and technical staff at Brandon University and Cypher Environmental. The student will be provided with a \$20,000 per year stipend, and may apply for additional scholarships.

Qualifications: This project is suitable for a student with a geoscience and/or geotechnical engineering background. The M.Sc. candidate should have a strong interest in the area of research, with a good background in one or more of road construction, mineralogy, geotechnical engineering and/or clay deposits. The candidate must be motivated, and be an independent and creative thinker with good research and analytical capabilities. Some heavy manual work is required from time to time.

How to Apply: Interested candidates should submit a cover letter stating their background qualifications and particular interest in the project, along with an updated curriculum vitae to: Professor Hamid Mumin (mumin@brandonu.ca).

Application Deadline: August 31, 2021, or until position is filled.

About this research: Students wishing further background on this research project may refer to the following paper available through the Transport Association of Canada: "Mumin, H., Cram, R., Baig, A., Jungen, G., Toews, Z., 2020: Cohesive Clays for Construction and Stabilization of Unpaved Roads, 2020 Transport Association of Canada "Journey to Safer Roads", pp. 20".

