Advanced Methods to Characterize Soil Behavior
- Close-range photogrammetry and its applications in geotechnical engineering
- High suction tensiometer and automated laboratory measurements
- Characterization of coupled thermo-, chemo-, hydro-, mechanical behavior of multiphase geomaterials

Constitutive and Numerical Modelling of Unsaturated Soils
- Modified state surface approach for constitutive modelling of multiphase materials
- Numerical modelling of climate-vegetation-soil-structure interaction
- Slope stability and retaining walls

Other Topics
- Frozen ground engineering
- Use of wicking fabric to mitigate frost heave and thaw weakening
- Ground improvement and erosion control

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- Photogrammetry, Image Processing, Unsaturated Soils, Constitutive Modelling, Modified State Surface Approach, Slope Stability, Landslides, Ground Improvement, Slab on Expansive Soils, Wicking Fabric, Frost Heave Mitigation

Recognitions
- International Innovation Award in Unsaturated Soil Mechanics, ISSMFE
- Excellent reviewer, Canadian Geotechnical Journal