



# ses

school of environmental sciences

The Research Seminar Presentation by

**John Drummelsmith**

will be held on

**Tuesday November 24, 2015**

**At 10:35 am**

**ALEXANDER HALL 337**

**Title: Impacts of cover crops and residue removal on soil health and biodiversity**

### **Abstract**

A healthy soil is a stable soil. Stable soils those which are more resistant to stresses and disturbances. Soil health results from the interaction of the physical, biological and chemical components of soil. The degradation of soils is considered to be a major threat to future food production, human health and environmental quality. The development of healthy soils has been highlighted as critical to securing future sustainable land use. There is a disproportional lack of information and methods for quantifying the full role of belowground biota in the field, specifically microbial community structure, and the role that it plays in soil health. High microbial diversity has been associated with general increased aspects (nutrient cycling, productivity, disturbance and disease resistance) of health in various ecosystems. This study will examine the impacts of promising sustainable land management strategies (cover crops and plant residue removal). The effects of land management on soil microbe communities will be quantified and correlated with current standards through community structure analysis via molecular techniques. We will profile the community (proportional composition and functional capacity) through qPCR, then use barcoding sequencing techniques to analyse diversity impacts of management strategies. This study will show individual cover crop species and residue removal effects on all aspects of soil health.

**Everyone is welcome to attend**

**(This is a Research Proposal presentation by students in ENVS\*6900)**