



The Olivetti Club Presents

## Ian Smythe

Tuesday 4:30 pm

September 30  
406 Malott

### **Turbulence and Classification**

One of the fundamental objectives in any branch of mathematics is to classify the objects under consideration up to some notion of equivalence. This often involves the discovery of complete invariants for those objects, up to that equivalence. The theory of Borel equivalence relations is a general framework for discussing such classification problems, and in particular, provides tools for discerning when such a classification is impossible. For the broad class of equivalence relations which are induced by group actions, Greg Hjorth (1963-2011) isolated a strong ergodicity property of these actions, called turbulence, which precludes classification by algebraic complete invariants. We will survey this theory, which lies at the intersection of dynamics, logic and descriptive set theory, and give examples of its applicability.

*Refreshments will be served at 4:00 pm in the math lounge.*