

## Department Colloquium

Speaker: Robert Krone, Queen's University

Date: Friday, October 21

Time: 2:30 p.m.

Place: Jeffery 234

Title: **FI**-algebras

**Abstract:** Defining **FI** to be the category of finite sets with injective maps, an **FI**-algebra is a functor from **FI** to  $K$ -algebras for a field  $K$ . Such a functor encodes an infinite family of algebras each with a symmetric group action. In many cases this structure allows us to finitely describe and compute with such families of algebras and their modules and ideals. These objects arise in problems coming from diverse areas such as algebraic statistics, topology, and algebraic geometry. I will discuss when and how we can compute information such as finite generating sets, Hilbert series, Gröbner bases, and free resolutions.