

## ***GRADUATE STUDENT SEMINAR***

**Guest Speaker: Ben Lewis**  
**University of Notre Dame**

**Date:** Monday, November 28, 2016

**Time:** 4:00 PM

**Location:** 129 Hayes-Healy Hall



***Lecture Title:***  
**Quantization Schemes on  $\mathbb{R}$**

***Abstract***

The axioms of quantum mechanics stipulate that there is a method to turn quantities from classical mechanics (e.g. energy, position, momentum) into operators on a quantum Hilbert space, giving us a subtle connection between classical mechanics and quantum mechanics. This method is called quantization. We will derive the position and momentum operators as well as the Hamiltonian operator. We will then set our sights on methods of quantizing more complicated functions on the phase space, concluding with Groenewold's "No Go" theorem and its implications for quantum mechanics. No experience with quantum mechanics will be assumed. Both mathematicians and physicists are encouraged to attend!