



## 2007 Seminar Series



### Dr. William Arveson

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**Friday, March 9, 2007**

**Time: 3:00 PM**

**Room: BSE 2.102**

### **Operator theory and the K-homology of algebraic varieties**

**Abstract:** A commuting set of operators on a Hilbert space that satisfies a system of polynomial equations typically generates a noncommutative  $C^*$ -algebra, and in the favorable cases, this  $C^*$ -algebra is properly interpreted as a noncommutative counterpart of an algebraic variety. In the best cases it determines an element of the K-homology of the underlying variety, typically a nonzero element.

Starting from first principles, we discuss basic issues associated with constructing operator solutions of polynomial equations, we discuss what has been learned in the past few years, and describe open problems. The talk should be accessible to a general mathematical audience.

A reception will follow the talk and will be held in BSE 2.102