Jacob Lurie

Harvard University

Theory of 'Spectral' Algebraic Geometry

Monday, May 5, 2014

3:15 pm, Tea - 219 Fenton Hall

4:00 pm, Lecture 1: Cohomolgy Theories and Commutative Rings - 100 Willamette Hall

Tuesday, May 6, 2014

3:15 pm, Tea - 219 Fenton Hall

4:00 pm, Lecture 2: Ambidexterity – 100 Willamette Hall

5:00 pm, Reception - 219 Fenton

Wednesday, May 7, 2014

3:15 pm, Tea - 219 Fenton Hall

4:00 pm, Lecture 3: Roots of Unity in Stable Homotopy Theory – 100 Willamette Hall

ABSTRACT:

In classical algebraic geometry, there is often a stark difference between the behavior of fields of characteristic zero (such as the complex numbers) and fields of characteristic p (such as finite fields). For example, the equation $x^p = 1$ has p distinct solutions over the field of complex numbers, but only one solution over any field of characteristic p. In this series of talks, I will give an informal introduction to the theory of "spectral" algebraic geometry. In this setting, one can study "fields" which in some sense lie between characteristic zero and characteristic p. I'll discuss some of the curious and surprising features of algebraic geometry in these intermediate regimes, focusing on the behavior of roots of unity.