Mathematical Research at Notre Dame

UNIVERSITY OF NOTRE DAME
Department of Mathematic

Speaker: **Katrina Barron**
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Friday, November 11, 2011
4:00 pm
231 Hayes-Healy Hall

Title: Algebraic and geometric foundations of Conformal Field Theory

Abstract:
Conformal Field Theory (CFT) is an attempt to unify all fundamental forces, including gravity, by modeling particles as vibrating strings. In the genus-zero, two-dimensional setting, vertex operator algebras (VOAs) describe the particle interactions. Independently from physics, VOAs were discovered in mathematics in the study of representations of infinite-dimensional Lie algebras and the Monster finite simple group. This study led to the surprising connection between CFT, VOAs and number theory. I will briefly give a flavor of some of the mathematics involved.

There will be pizza provided by the department following the lectures.