Graduate Student Seminar

UNIVERSITY OF NOTRE DAME
Department of Mathematics

Speaker: **Dominic Culver**
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Monday, March 31, 2014
4:25 pm
Room: 229 Hayes-Healy Hall

Title: Generalized (co)homology theories and Brown's representability theorem

Abstract:
Singular (co)homology is a very useful invariant of a topological space satisfying nice formal properties, and it can be shown that these formal properties uniquely determine singular (co)homology. These properties are called the Eilenberg-Steenrod axioms. Omitting the "dimension axiom" one arrives at the definition of a *generalized (co)homology theory*, examples of which are cobordism and K-theory. Brown's representability theorem relates these generalized (co)homology theories to stable homotopy theory, namely the theorem says that any generalized cohomology theory can be represented by an Ω-spectrum. In this talk, I will discuss generalized cohomology theories and sketch a proof of Brown's Representability Theorem. I will also give an application to geometry.