

University of Notre Dame Department of Mathematics

# TOPOLOGY SEMINAR

**Joseph Hirsh**

City University of New York

*Will give a lecture entitled:*

## **Deformation with noncommutative parameters**

*On*

Thursday, November 15, 2012

*At*

3:15 PM

*In*

258 Hurley Hall

### ***Abstract***

In this talk I will describe the classical yoga of deformation theory---that commutative moduli problems are locally described by dgLie algebras in characteristic zero---and provide some examples. Then, importing tools from operad theory, most notably Koszul Duality, I will describe a generalization that classifies the local structure of noncommutative moduli problems in arbitrary characteristic. I will conclude by describing some ongoing work to exploit the relationship between noncommutative deformation theory and ideas from functor calculus.