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**Speaker:** Ralph Kaufmann  
Purdue University

Tuesday, April 8, 2008  
9:00 AM  
258 Hurley Hall

**Title:** Operations on Hochschild co-chains: solving and generalizing Deligne's conjecture using surfaces

**Abstract:**

We will discuss how to build complexes from surfaces with extra structures and use these complexes to give algebraic operations. The first such example endows a vector space with the structure of a unital commutative associative algebra with a non-degenerate pairing. This is commonly known as a Frobenius algebra. Allowing different structures and applying this to multilinear functions, we obtain a Gerstenhaber Bracket and other operators appearing in Deligne's conjecture and String Topology. In the most general setting we obtain operations corresponding to moduli spaces of surfaces.