



# UNIVERSITY OF CALIFORNIA RIVERSIDE

DEPARTMENT OF MATHEMATICS

## COLLOQUIUM

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**Dr. Ralph Cohen**  
(Stanford University)

“The topology of loops and strings in a manifold”

**Abstract:**

In this talk I will describe some of the constructions of the “string topology” of a manifold. These are homological operations on spaces of loops and paths in a manifold. The study of these operations was initiated by Chas and Sullivan, and have since been explored by many authors. I will describe methods for probing deeper into the structure of these loop and path spaces by studying similar structures on chain complexes and on spectra. This will lead to a variety of open questions, such as how this structure fits into the classification of topological field theories described by Costello, Lurie, and others, understanding duality phenomena in this setting, and connections to symplectic topology.

**Wednesday, May 2<sup>nd</sup>, 2012**

**Surge 284**

**4:10-5:00pm**

*Tea Time at 3:40pm*