

## ***GRADUATE STUDENT SEMINAR***

**Guest Speaker: Lorenzo Riva**

**University of Notre Dame**

**Date:** Thursday, January 27, 2022

**Time:** 2:00 PM

**Location:** 206 DeBartolo Hall

**Zoom URL:** [notredame.zoom.us/j/93888654312](https://notredame.zoom.us/j/93888654312)

***Lecture Title:***

**You could have formulated the Cobordism Hypothesis**

***Abstract***

In this talk we will try to study manifolds in their totality: all  $n$ -manifolds, or all manifolds up to a fixed dimension, or all manifolds equipped with a certain structure. It turns out that these collections form specific algebraic structures that are fully characterized by the Cobordism Hypothesis, formulated by Baez-Dolan and proven by Lurie. In particular, we will talk about building manifolds by inductively gluing cobordisms, some category theory, and the algebraic restrictions imposed by a topological field theory, which is a representation of such an "algebra of manifolds". The talk should be accessible to everyone that knows what a manifold is, but in particular interesting for topologists, algebraists, and mathematical physicists.