

## ***TOPOLOGY SEMINAR***

**Guest Speaker: Corbett Redden**

**Long Island University**

**Date:** Tuesday, February 20, 2018

**Time:** 2:30 PM

**Location:** 258 Hurley Hall

***Lecture Title:***

**Equivariant connections on (higher) bundles**

***Abstract***

Suppose  $G$  is a compact Lie group acting on a smooth manifold  $M$ . The "differential quotient stack" assigns to any test manifold  $X$  the groupoid of principal  $G$ -bundles on  $X$  with a connection and an equivariant map to  $M$ . I will explain how  $G$ -equivariant vector bundles on  $M$  with  $G$ -invariant connection are equivalent to vector bundles with connection on the differential quotient stack. Furthermore, the differential cohomology groups (Deligne cohomology) of this stack provide a natural home for equivariant Chern-Weil theory. In degree 3, the differential equivariant cohomology groups classify  $G$ -equivariant gerbe connections (joint with Byungdo Park). In the first talk I will make these statements precise and explain the underlying geometric constructions. Depending on the audience's interests, in the second talk I can explain technical details or discuss additional examples and applications.