



The Olivetti Club Presents
Timothy E. Goldberg

Tuesday, 4:25 pm
24 February 2008
251 Malott

**What's purple and commutes,
and ends with "oid"?**

Why, an abelian grape-OID, of course!

A groupoid is like a group, except that not every pair of elements can be multiplied together. A nice way to think of a groupoid is as a collection of groups together with a selection of isomorphisms between them (like a bunch of grapes!). This generalization of groups has proved to be very useful in geometry and topology. In geometry, groupoids allow us to study *local symmetries* and *collections of symmetries*. In topology, we can replace the fundamental group with the **fundamental groupoid** and study multiple components of a space at once, as well as avoid the nuisance of having to choose a basepoint.

I will give some different definitions of groupoids, and explain some of their applications in geometry and topology.

Refreshments will be served at 3:55 pm in the math lounge.