# The Oliver Club

www.math.cornell.edu/~oliver/

**Karen Vogtmann**, Cornell University

## *Outer Spaces*

*An "outer space" for a group G is a contractible space with a proper action of the group Out(G) of outer automorphisms of G. Classical examples include homogeneous spaces and Teichmuller spaces. For a free group F of finite rank, an outer space was introduced in the mid-1980s. The basic idea is to think of an automorphism of a free group topologically, as a homotopy equivalence of a finite graph. In this talk, I will describe outer space and indicate how it is used to obtain algebraic information about Out(F_n), then show how theses ideas can lead to the construction of new outer spaces.*

## Thursday, March 4, 2010
## at 4:25 PM in 406 Malott Hall

Refreshments will be served at 3:55 PM in the Mathematics Department lounge (532 Malott Hall).