

# Topology Seminar

**Kathryn Lesh**

of Union College will be speaking on

## Bredon homology of decomposition spaces

on February 11 at 4:30 in  
MIT Room 2-131

I will discuss our current state of knowledge about the  $U(n)$ -equivariant homotopy type of  $L_n$ , the space of proper decompositions of complex  $n$ -space. In particular, I will describe a recent result (joint with Arone and Dwyer) describing the Bredon homology and cohomology of  $L_n$  with coefficients in a  $p$ -local Mackey functor. It turns out to be the same as a point when  $n$  is not a power of  $p$ , and is approximated by the symplectic Tits building when  $n$  is a power of  $p$ . The method uses a general approximation theory for a space with an action of a compact Lie group, by  $p$ -toral subgroups. The space  $L_n$  first arose in the Weiss tower for the functor taking a vector space  $V$  to  $B\text{Aut}(V)$ , but has made other appearances, and is an important ingredient in the  $bu$  Whitehead Conjecture.

For information, write: [senger@mit.edu](mailto:senger@mit.edu)