

Algebraic Topology **August 3-7, 2009** in Applied Mathematics

NSF/CBMS Regional Conference



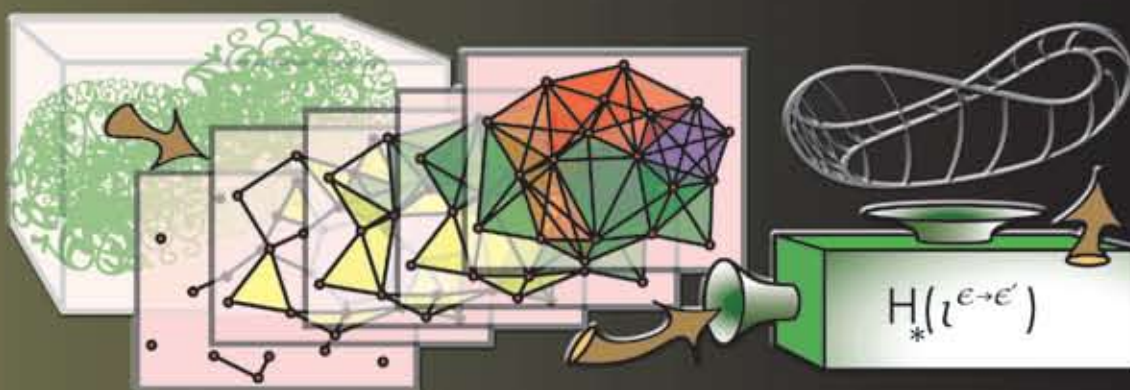
**Principal Speaker:
Robert Ghrist**

University of Pennsylvania

Named one of Scientific American's "Top 50" for research

Robert Ghrist will present 10 lectures focusing on recent applications of algebraic topology to problems in modern technology areas.

Robert Ghrist is a Presidential Early Career Award winner. He is the lead investigator for STOMP: Sensor Topology & Minimal Planning, a 4-year, \$8 million grant whose goal is to create and utilize mathematical innovations to deduce global structure from local information in distributed and coordinated sensing platforms.



The conference will demonstrate to mathematicians, scientists and engineers how algebraic topology can be used in the real world. It will also help prepare students in the necessary algebraic topology, direct applications, and global perspectives that will encourage them to find new applications.

Conference Lectures:

- (1) Topology and its (engineering) applications
- (2) The Euler characteristic and target counting via sensors
- (3) Sheaves and network data aggregation
- (4) Homology and coverage in sensor networks
- (5) Persistence and high-dimensional data analysis
- (6) Morse theory and data reconstruction
- (7) Index theory and experimental time-series data
- (8) LS-category and mode-counting in statistics
- (9) Obstruction theory: synchronization, consensus, and motion-planning
- (10) Configuration spaces and robot motion planning

Conference Support

Support is available for 30 participants. Preference will be given to graduate students, postdocs and researchers without grants.

To Apply

Send applications to cbms2009@csuohio.edu and include a statement describing the candidate's interest in the conference. Graduate students should include the name of their Ph.D. advisor; others should include a CV.

For more information

http://academic.csuohio.edu/bubenik_p/cbms2009/

Conference Organizers: Peter Bubenik and John Oprea, Cleveland State University