



DEPARTMENT OF MATHEMATICS AND STATISTICS

COLLOQUIUM

Speaker: Dr. Dan Farley, Miami University

Title: Configuration Spaces of Graphs

Date: January 27, 2012

Room/Time: **Refreshments:** 2:30 p.m. **Room: 222 MM**
Talk: 3:00 p.m. **Room: 224 MM**

Host: Dr. Daniel Slilaty

ABSTRACT:

Configuration spaces are topological spaces that describe all possible configurations of a collection of smaller objects within a larger space. For instance, the configuration space of n points on a graph G would encode all possible arrangements of n distinct points within the graph G , in the form of a topological space. Configuration spaces are of interest to many mathematicians, both pure and applied.

In this talk, I will describe carefully the configuration space of n points on a graph G . My main goal in the talk will be to compute various algebraic invariants of these configuration spaces (such as the fundamental group, homology groups, etc.). I will discuss possible applications as well, to such fields as robotics and quantum mechanics.

ABOUT THE SPEAKER:

Dan Farley obtained his PhD in mathematics from Binghamton University in 2000. Since then, he has held temporary positions at Penn State, the University of Illinois, and the Max Planck Institute of Mathematics (Bonn). He is currently an assistant professor of mathematics at Miami University.