

Mathematical & Computational Biology Seminar

Organizer: Valerie Hower

Monday, 3:00–4:00pm, Baker Board room, MSRI

Aug. 24 **Megan Owen**, N.C. State University

A fast algorithm for computing geodesic distances in tree space

In 2001, Billera, Holmes, and Vogtmann introduced a geometric space of phylogenetic trees, in which there is a unique shortest path between any two points (trees) in this space. The length of this path is called the geodesic distance between phylogenetic trees. However, the complexity of computing this distance is an open problem. In this talk, I will give a polynomial time algorithm for finding the geodesic distance. This algorithm starts with a simple initial path and moves through a series of successively shorter paths until the geodesic is attained. This is joint work with Scott Provan