



## GEOMETRY, TOPOLOGY, AND PHYSICS SEMINAR

# Aspects of the Topology and Geometry of Three-Manifolds

Daryl Cooper, UCSB

Friday, October 13, 2006, 3:30 p.m.  
Room 6635 South Hall

- Teichmuller space and moduli space for surfaces from pants decompositions.
- Gromov Hausdorff convergence and neck pinching.
- Margulis lemma and short geodesic in hyperbolic manifolds.
- Deforming finite volume hyperbolic 3-manifolds: figure 8 knot, incomplete structures, Dehn filling, Dehn surgery space.
- Quasi Fuchsian groups.
- Non-compactness and tameness of 3-manifolds
- Classification of hyperbolic 3 manifolds
- Failure of prime decomposition in high dimensions
- JSJ decomposition: the role of tori and Seifert fiber spaces
- Graph manifolds, Cheeger-Gromov collapsing and Ricci flow.
- Cheeger finiteness.
- Real projective structures and the quest for a universal geometry

Information about future meetings of this seminar can be found at  
<http://www.math.ucsb.edu/~drm/GTPseminar/>