

Special Topology Seminar



Speaker: Margaret Doig
Indiana University

Friday, October 15, 2010
12:00 pm
258 Hurley Hall

Title: Heegaard Floer Homology and Knot Surgery

Abstract:

Heegaard Floer theory has something to say about a wide variety of questions in low-dimensional topology. For example, while it is well known that any 3-manifold can be obtained by Dehn surgery on a link, it is currently unknown which manifolds can be obtained from a knot or which knots can produce them. We will discuss this question for spherical manifolds (other than lens spaces) using the Heegaard Floer *correction terms* associated to a 3-manifold Y and its torsion Spin^c structures. If $H_1(Y)$ is small, the correction terms completely identify the Y which can be realized as knot surgeries and place restrictions on the knots; for those Y with larger $H_1(Y)$, the invariants still provide useful information.