Department of Mathematics and Computer Science

Friday, September 9, 2016, 4:10 pm

COLLOQUIUM TALK

Speaker: Charles Delman (EIU)

Old Main 2231

Foliations & Heegaard-Floer Homology

Abstract:

A (co-dimension-one) *foliation* of a three-dimensional manifold is a decomposition into surfaces (the *leaves* of the foliation) locally homeomorphic to parallel planes. A foliation is *taut* if there is a simple closed curve transverse to every leaf.

Heegaard-Floer Homology is a novel homology theory providing additional algebraic invariants for rational homology spheres. A manifold with Heegaard-Floer homology of minimal rank is called an L-space; the name comes form the fact that lens spaces are typical examples (as are all spherical manifolds).

It is known that a rational homology sphere admitting a taut, transversely orientable foliation is not an L-space. It is conjectured that the converse holds. I will discuss recent results with Rachel Roberts proving the converse for some significant cases.

SNACKS IN FACULTY LOUNGE AT 3:30 PM.
EVERYONE WELCOME (EVEN IF YOU ARE UNABLE TO ATTEND THE TALK)