Temple University Mathematics Colloquium

Abigail Thompson

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will speak on

In search of optimal knots

ABSTRACT: There are various notions of an optimal position for a knot K in the 3-sphere. For example, Schubert introduced the idea of bridge number for a knot, in which the knot is described as some number of trivial arcs (bridges) in two 3-balls glued together along their boundaries. In a refinement of this, one can place a knot to lie with minimal complexity relative to a family of parallel planes; this is the now-standard notion of thin position for a knot. I will explain some of the reasons why this has been a very useful idea in knot theory and 3-manifolds. In joint work with Hass and Rubinstein we explored replacing the family of parallel planes in thin position by an n-parameter family of surfaces. I'll discuss some of these results for $n = 2$, and some natural (so far unanswered) questions when n is 3 or higher.

Monday, November 16, 2015
Lecture at 4:00 pm
Coffee, tea, and refreshments from 3:40 pm
Room 617, Wachman Hall
Department of Mathematics