Math Factor/Math Department Seminar

Megan Fairchild

Mon, Jan 27 - TY 365

Dr. Fairchild is a candidate for a faculty position in the Math Dept. Her presentation will consist of two short parts: one part is a teaching topic and the second part is her research area.

Teaching Demonstration – 1:30 – 2:10

Topic: Area Between Two Curves

Approach: The idea of area of the region enclosed by two curves will be introduced, many pictures will be drawn, and several examples will be demonstrated.

Research Talk – 2:20 – 3:00

Title: Knots and Surfaces in Dimension Four

Abstract: We explore both orientable and non-orientable surfaces bounded by knots and how they give us insight into 4-dimensional topology. We focus on problems such as finding the minimal genus of a surface in 4-dimensional space and different techniques to solve orientable versus non-orientable problems. We also give interesting relations of knot theory to the famous smooth 4-dimensional Poincaré conjecture, which is still an open problem.