



PURDUE UNIVERSITY

Department of Mathematics Colloquium

Speaker: Professor Robert Neel, Lehigh University
Title: “Minimal Surfaces and Coupled Brownian Motion”
Date: Tuesday, November 9, 2010
Time: 4:30 P.M.
Place: MATH 175

Abstract

We introduce an extrinsic analogue, for minimal surfaces in R^3 , of the mirror coupling of two Brownian motions and use it to prove geometric results. The first class of results we look at are strong halfspace-type theorems, in which the goal is to prove that pairs of minimal surfaces, under some conditions, must intersect. Second, we study harmonic functions on minimal surfaces, proving that properly embedded minimal surfaces of bounded curvature admit no non-constant bounded harmonic functions (thus making progress toward a conjecture of Sullivan) and that non-planar minimal graphs are parabolic (thus proving a conjecture of Meeks).

Refreshments will be served in the Math Library Lounge at 4:00 p.m.