

REU 2005
WEDNESDAY, JULY 13
RYERSON 251, 7:00 pm

SPECIAL GUEST LECTURE

JOSEPH MILETI

Title: What Does Mathematical Logic
Have To Do With Mathematics?

Abstract: Mathematical Logic is often seen as a peripheral subject in mathematics which deals only in pathology and foundational issues irrelevant to the real concerns of mathematicians. In this talk, I hope to convince you of the error in this point of view. Since we will be limited in time, we will confine our attention to the role of set theory and computability theory in the study of real numbers. We will see how these subjects provide new tools to solve problems in analysis and how they allow us to define interesting mathematically rich sets of real numbers. We will end by discussing how some natural mathematical questions in analysis turn out to be neither provable nor refutable from the normal axioms of mathematics, and how ridiculously large infinite sets may be able to come to the rescue.