

THE DEPARTMENT OF MATHEMATICAL SCIENCES

Indiana University - Purdue University Fort Wayne

jointly with the PI Math Club

is pleased to present

Peter Hamburger

Western Kentucky University — and IPFW Emeritus

Much Ado about Real Numbers

Abstract

Starting from a well-known graph theory conjecture, I became interested in the behavior of the products of matrices with 0 or 1 entries, their eigenvalues and eigenvectors, and thus the roots of polynomials with integer coefficients. The deeper I went into these problems, I realized that I personally and the rest of the mathematics community do not know much about real numbers. I also realized that even the facts that we should know are not conveyed to our students in algebra and calculus classes. While discussing these facts with a colleague, he asked me a loosely related question in statistics that I found intriguing. In this talk I will address these issues. Unfortunately, as I dug into these problems further I recognized that I am much farther from solving my original problem than I believed before. Since I am old enough to collect Social Security benefits, I still remember the beginning of the famous Midwest Graph Theory (MIGHTY) meetings when researchers were not embarrassed to talk about mathematics in which they were interested but did not yet have significant results. This experience gives me the courage to present this talk to you. I believe my discussion is suitable for students, teachers, and researchers in mathematics and statistics.

Noon, Wednesday, April 4, 2012.

Location: KT 216

<http://ipfw.edu/departments/coas/depts/math/news/seminars.html>