THE DEPARTMENT OF MATHEMATICAL SCIENCES

Indiana University - Purdue University Fort Wayne

is pleased to present

Peter Hamburger

Western Kentucky University, and IPFW Emeritus

Social and Socioeconomic Sciences and Dimension of Posets

Abstract

We briefly discuss how a Japanese medical doctor, T. Hiraguchi, in 1951, and a renowned mathematician and social scientist, Robert Duncan Luce, in 1956, influenced the study of partially ordered sets. We will touch briefly on how the study of mathematical psychology, the theory of human performance, human limitation, and human preferences, and the study of voting theory, signal processing, and other social and socioeconomic sciences relate to the study of posets. Then we will jump into solving difficult conjectures related to the dimension of posets such as the existence of "large" Standard Examples in high dimensional posets and the so-called Removable Pair Conjecture. Before we do this we establish a parallel line of thought in graph theory by showing the analogous results for the chromatic number of a graph and the existence of "large" clique, (that is, the existence of a "large" complete subgraph) in the graph.

The talk is accessible for a general audience with minimal mathematical background. It could be particularly interesting for scientists from computer science, engineering, physics, education, psychology, sociology, and economics, and I hope but cannot promise that even mathematicians will not be bored.

Joint work with: Csaba Biró, University of Louisville; Attila Pór, Western Kentucky University; William T. Trotter, Georgia Institute of Technology.

1:30 – 2:30, Thursday, October 2, 2014.
Location: KT 243
http://ipfw.edu/departments/coas/depts/math/news/seminars.html