

**Department of Mathematical Sciences  
Colloquium**

**Kien Lim**

Department of Mathematical Sciences, UTEP

**THE HAMMER-AND-NAIL PHENOMENON  
IN MATHEMATICS CLASSROOMS**

"For a person with a hammer, everything looks like a nail" (an English proverb). This phenomenon is commonly observed in mathematics classrooms. For example, after learning the advantage of using a ratio of length to width, over using a difference between length and width, to compare 'squareness' of rectangles, 12 out of 22 pre-service teachers used either length-to-width ratio or length-and-width difference, instead of length-and-width product, to compare the palm-sizes of hands. Because mathematics has traditionally been taught in a linear and compartmentalized manner, many students developed the habit of applying recently learned ideas to solve a mathematics problem instead of reasoning with the quantities and relationships involved in the problem. To address this phenomenon, we need a classroom culture that requires students to think and be skeptical.

In this presentation, I will (a) provide evidence of the existence of the hammer-and-nail phenomenon in mathematics classrooms, (b) present various theoretical constructs that are related to this phenomenon, (c) share my research that is related to this topic, and (d) solicit ideas from the audience on how we can address this issue in our mathematics classrooms.

**Friday, April 9, 2010 at 3 pm in Bell Hall 143  
The University of Texas at El Paso**

Refreshments will be served in front of the colloquium room,  
15 minutes before the start of the colloquium.