

Cal Poly Pomona Mathematics and Statistics  
Department Colloquium

**Posets, Dominos and the Search for a Hook  
Formula**

By

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**Abstract:** Partially ordered sets, or posets, have long been an object of interest in the field of combinatorics. Many interesting questions about posets can be answered by using a combinatorial object called a tableaux. In this talk, I will define a poset and describe the poset of partitions ordered by inclusion known as Young's lattice. We will discuss how the use of Young tableaux and the Frame-Robinson-Thrall Hook formula answers many combinatorial questions about Young's lattice. Following this introductory material, I will give the generalization of Young's lattice to the case of domino tableaux and  $k$ -ribbon tableaux and also discuss a new type of poset called a multi-ordered poset. While a type of Hook formula is known for domino and  $k$ -ribbon tableaux, a Hook formula for multi-ordered posets remains an open question. We will discuss possible approaches to this open problem at the end of the talk. I will include all necessary definitions in the talk so no prior knowledge of posets will be necessary.

**Thursday, May 17th, 2007, 12:05 – 12:50 p.m. in 8-149\***

Refreshments served at 12 noon.

\*Please note that this is not the usual Colloquium room