

# B I - C O M A T H E M A T I C S C O L L O Q U I U M

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*“Permutations, partitions, and ‘jeu de  
taquin’”*

**Monday, November 10, 2008**

Talk at 4:15 – Park 328  
Tea at 3:45 – Park 355, Math Lounge

**Abstract:**

The puzzle `jeu de taquin` (also known as the 15-puzzle) consists of 15 numbered squares on a 4x4 grid. The object of this puzzle is to slide the squares around the grid until they are arranged in increasing order. This sliding procedure provides valuable insight into the theory of partitions. A partition of a positive integer  $n$  is a set of positive integers which sum to  $n$ . Any partition can be visualized as an arrangement of squares which are then filled with numbers. In this talk, we describe how partition diagrams can be manipulated using jeu de taquin moves. We use these manipulations to describe a form of multiplication and explore a generalization to ordered partitions known as compositions.

**BRYN MAWR COLLEGE**