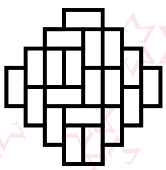
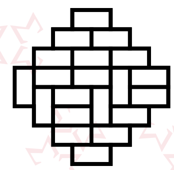
Thursday, February 28, 2019
4:30–5:20 p.m.
SAS 2102

Tiling the Aztec diamond with dominoes

Nathan Reading

The study of **domino tilings** goes back to early 20th century physicists, who used domino tilings in a statistical-mechanical model of diatomic molecules on a surface. A domino is a 2×1 rectangle. Tiling a region in the plane by dominoes means completely covering the region with non-overlapping dominoes. Consider the following simple question: How many ways can a given region of the plane be tiled by dominoes? For example, there are two domino tilings of a 2×2 square. For a general rectangular region, the formula looks strange and is difficult to prove. For a different planar region called the **Aztec diamond**, the formula is quite simple. We'll discuss and illustrate a beautiful proof of the formula due to Elkies, Kuperberg, Larsen, and Propp. Time permitting, we'll also see what domino tilings have to do with the **Arctic Circle**. The talk will be **accessible to all undergraduates**. No prior knowledge of tilings will be assumed.

NCSU Society for Undergraduate Mathematics

SUM Series

Mathematics and pizza!