1145-05-2673 **Arthur L Gershon*** (alg125@case.edu), 2103 Cornell Road, Office 6122, Cleveland, OH 44121.
Strip Tilings on Square Chessboards. Preliminary report.

We address the problem of finding the number of ways to place $1 \times k$ strips, where k can be any positive integer, on a rectangular lattice or chessboard such that no two overlap, and that there is at most one horizontal strip in each row and at most one vertical strip in each column (with alignments corresponding to the side of length k). Previous efforts have computed generating functions for counts $T(m,n)$ of such arrangements on chessboards of size $m \times n$ for some fixed side length m and letting n go off to infinity. Another problem of interest, however, is counting the arrangements $T(n,n)$ when the ambient chessboard is an $n \times n$ square, which is not addressed by the previous generating function approach. In this talk, we will discuss some of the advances in this latter direction, including the use of analytic techniques to prove an asymptotic formula for $\log T(n,n)$. If possible, we will also address the related problem of counting the number of strip tilings on square chessboards without the restriction in rows and columns. (Received September 25, 2018)