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**Curtis G Nelson\*** (cnelso42@uwyo.edu) and **Bryan L. Shader**. *A Checker-board Tiling Problem.*

Given nonnegative integral vectors  $R = (r_1, r_2, \dots, r_m)$  and  $S = (s_1, s_2, \dots, s_n)$ , can a  $m \times n$  checkerboard be tiled with vertical dimers (vertical  $2 \times 1$  blocks) and monomers ( $1 \times 1$  blocks) so that there are exactly  $r_i$  dimers with the top half of the dimer in row  $i$  and  $s_j$  dimers in column  $j$ ? This question can be thought of as an extension of the problem solved by the Gale-Ryser Theorem. We give an answer to this question in terms of  $R$  and  $S$  and discuss some other properties of this combinatorial object. (Received August 29, 2014)