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Grady Bullington and **Linda Eroh***, eroh@uwosh.edu, and **Steven J Winters**. *Prisoners and guards on rectangular boards*. Preliminary report.

Woolbright introduced the “Prisoners and Guards” game as a two-player game on an $n \times n$ checkerboard. At the beginning of the game, every square of the board has a guard. At each stage in the game, for each prisoner, there must be at least as many guards as prisoners on adjacent squares. The players take turns either replacing a guard with a prisoner in their color or replacing one prisoner (of either color) with a guard, then replacing two guards with prisoners in their color, subject to the rule above. When neither player can adjust the board any further, the player with more prisoners in their color wins. Howard, Ionascu, and Woolbright characterized the maximal and maximum configurations of $n \times n$ boards, that is, the boards for which neither player can make any moves. In this talk, we give formulas for the number of prisoners in the maximum configurations of $n \times m$ boards, where $2 \leq n < m$, for $n = 2, 3, 4$, and 5, and provide a bound when $n = 6$. (Received January 12, 2012)