

1145-K1-2972      **Darrah Chavey\*** ([chavey@beloit.edu](mailto:chavey@beloit.edu)), Beloit College, 700 College St., Beloit, WI 53511. *What Graphs Support Good Blockade Games?* Preliminary report.

Blockade games are played on a graph by moving pieces along the edges trying to block your opponent so they are unable to move their pieces. Such games are played on at least 5 different graphs, in at least 8 countries and 4 continents. To determine which graphs generated good games, we constructed a variety of criteria for “good games” based on standard approaches to gaming, and using thresholds of measures of quality determined by the games that exist in various cultures. Such criteria include ideas of fairness, complexity, and the presumption that improved skill and practice should result in more wins. The analysis of what graphs generate good blockade games showed, for example, that such graphs must be 2-connected. Analyzing all 2-connected graphs with at most 9 vertices (the maximum for all but 1 of the existing blockade games), including simulations of play on those graphs, we showed that game players across cultures had discovered essentially of the possible best games. In the classroom, our students play these games, discover aspects of this analysis on their own, and study other aspects of the analysis to help understand how we analyze games, and how we can compare the complexities of traditional games. (Received September 25, 2018)