1077-G1-1467 **Andrew D. Blaikie*** (ablaikie13@wooster.edu), **Gabriel J. Abud**, **John A. David** and **R. Drew Pasteur**. *Pursuing an optimal statistically-based model for NFL prediction.*

Artificial neural networks are used to create models that predict the outcome of NFL professional football games. The model is based purely on statistics and uses a committee of machines approach for greater consistency. Many statistics are gathered for six seasons, including passing yards, rushing yards, fumbles, etc. Data analysis is performed to identify the most predictive statistics. Some techniques applied include derivative based analysis, principal component analysis, and computing correlations with game outcomes. Ultimately, the technique that produced the best predictive model found the optimal set of statistics using linear regression models with different combinations of statistics. When compared to a group of other computational predictive models over several seasons, our NFL model consistently ranks among the top half in mean absolute error, the difference between predicted and actual game results. (Received September 19, 2011)