1096-05-505 **Caitlin Phifer*** (caitlin@math.uri.edu). *The Cycle Intersection Matrix and Applications to Planar Graphs.*

Given a finite connected planar graph G with s finite faces, we define the *cycle-intersection matrix*, $C(G) = (c_{ij})$ to be a symmetric matrix of order $s \times s$ where c_{ii} is the length of the cycle which bounds finite face i, and c_{ij} the negative of the number of common edges in the cycles bounding faces i and j for $i \neq j$. We will show that $\det C(G)$ equals the number of spanning trees in G. We show an interesting connection between the determinant of $C(G)$ to the Fibonacci sequence when G is a certain triangulation of an n-gon by non-overlapping diagonals. (Received September 05, 2013)