1086-05-1693 **Tyler Seacrest*** (t_seacrest@umwestern.edu), 710 S. Atlantic St., Dillon, MT 59725. *An Arc-Weighted Second Neighborhood Conjecture.*

Given a digraph $D$ and vertex $v$, the set $N_i(v)$ consists of all vertices at distance exactly $i$ in the forward direction from $v$. Seymour conjectured that every oriented simple graph contains a vertex $v$ such that $|N_1(v)| \leq |N_2(v)|$. Seymour's conjecture has been verified in several special cases, most notably by Fisher for tournaments.

One extension of the conjecture that has been used in several papers is to consider vertex-weighted digraphs. In this talk we introduce a version of the conjecture for arc-weighted digraphs. We prove the conjecture for arc-weighted tournaments, strengthening Fisher's theorem. Our proof does not rely on Fisher's result, and can thus also be seen as an alternate proof of Fisher's theorem. (Received September 24, 2012)