1120-15-149 **Adam H Berliner*** (berliner@stolaf.edu), **Dale Olesky** and **Pauline van den Driessche**.
Refined inertias for zero-nonzero patterns. Preliminary report.

Let A be any real matrix realization of a given sign pattern $\mathcal{S}$. The refined inertia of $\mathcal{S}$ is the collection of 4-tuples $\{\text{ri}(A) = (n_+, n_-, n_z, 2n_p)\}$, where n_+ and n_- give the number of eigenvalues with positive real part and negative real part (respectively) and n_z and $2n_p$ give the number of zero and purely imaginary eigenvalues (respectively). Recent research has focused on $n \times n$ patterns whose refined inertia contains $\mathbb{H}_n = \{(0, n, 0, 0), (0, n-2, 0, 2), (2, n-2, 0, 0)\}$. In this talk, we extend these notions to zero-nonzero patterns and discuss some results for patterns whose refined inertia contains $\mathbb{H}_n^* = \{(0, n, 0, 0), (0, n-2, 0, 2), (2, n-2, 0, 0), (n, 0, 0, 0), (n-2, 0, 0, 2), (n-2, 2, 0, 0)\}$. (Received February 19, 2016)