1046-39-87 **John W Cain*** (`jwcain@vcu.edu`), Department of Mathematics, Box 842014, Virginia Commonwealth University, 1001 West Main Street, Richmond, VA 23284-2014. *Local Asymptotic Stability and Difference Equations of Arbitrary Finite Order.*

The Schur-Cohn and/or Jury Criteria are often used to test for local asymptotic stability of equilibria of difference equations. However, these stability tests are typically implemented only if the underlying difference equations are of low order. In this talk, I will illustrate how one may use the Jury Criteria to analyze local asymptotic stability of equilibria of a class of difference equations with arbitrary finite order. Specifically, I will completely characterize the local asymptotic stability of equilibria of a two-parameter, mth order difference equation which arises in the context of modeling cardiac dynamics. My results yield a criterion for the onset of a particular arrhythmia known as reentrant tachycardia. (Received July 22, 2008)