1086-37-546 **Dashiell E. A. Fryer*** (dashiell.fryer@pomona.edu) and **Marc Harper** (marcharer@ucla.edu). *Time-scale Lyapunov functions for Incentive Dynamics on Riemannian Geometries.*

Time-scale calculus allows the study of difference and differential equations simultaneously. In this talk we present the application of time-scale Lyapunov stability theory to game-theoretically inspired incentive dynamics on the simplex for a wide class of Riemannian geometries, giving time-scale Lyapunov functions in terms of information divergences for a large class of discrete and continuous-time dynamics that include many well-known dynamical systems in evolutionary game theory. These results include discrete time extensions of the adaptive dynamics of Hofbauer and Sigmund. We also discuss the relationship between incentive stability and evolutionary stability through a series of illustrative examples. (Received September 06, 2012)