1046-34-472   **Jagdish Chandra*** (`jchandra@gwu.edu`), 1776 G Street,NW, # 137, Washington, DC 20052, and **G S Ladde**, 4202 east fowler avenue, PHY114, tampa, FL 33620. *Cooperative/competitive dynamics in social networks.* Preliminary report.

Social networks are metaphor and mathematical constructs for relationship among individuals (groups of individuals). In social networks, nodes represent individual or groups (agents), who may have both observable characteristics (such as location, stockpiles, association/employer, etc.), and unobservable characteristics (such as suspicion, political/religious affiliations, opinions, preferences, etc.), while edges represent associations between pairs of agents. In this study, we are primarily interested in dynamic networks, where both nodes and associations evolve in time. In this preliminary report, we represent the dynamics of relationships between "individuals" by a coupled systems of nonlinear deterministic or stochastic differential equations that combine both the interaction dynamics and behavioral dynamics, where the pairwise relationships are driven by both observable and unobservable characteristics. We present some qualitative properties such as resilience, coherence, and stability, employing energy (Liapunov)-like function methods. (Received September 04, 2008)