1099-91-78 **Maria R. D'Orsogna*** (dorsogna@csun.edu), Department of Mathematics, California State University at Northridge, 18111 Nordhoff Avenue, Los Angeles, CA 91330. *Evolutionary games for crime, recidivism and rehabilitation of criminal offenders.*

We present two evolutionary games to study crime and intervention strategies. In our first adversarial game, players choose whether to actively harm others and whether to cooperate with authorities. Among the four possible strategies that arise is the "informant" who cooperates with authorities while still committing crimes. Our dynamics lead to high or low crime equilibration regimes depending and on the number of informants, suggesting that the latter may be of crucial importance in helping reduce crime. Our second "carrot and stick" game is motivated by recent efforts to treat and rehabilitate nonviolent offenders rather than focusing solely on their punishment. In our game, individuals commit crimes depending on their history, environment and in the case of recidivists, on any available counseling or training programs. We find that the most successful strategy to decrease recidivism is in carefully balancing punishment and intervention programs. Excessively harsh or lenient punishments are found to be less effective. We present stochastic simulations and ODEs connected to our models and discuss experimental realizations conducted on actual human subjects. (Received January 27, 2014)