1035-05-1381 **Brett Frankel*** (brett.frankel@jhu.edu) and **Rebecca Payne** (rebecca.payne@pomona.edu).
On the feasible number of monochromatic triangles. Preliminary report.

It is well known that the Ramsey number $R(3,3)$ equals six; moreover, a two-coloring of the edges of a K_6 must contain at least *two* monochromatic triangles. Motivated by this result and the landmark paper of Goodman in which the *minimum* number of monochromatic triangles in a two-coloring of the edges of K_n is exactly specified, we study the *possible number* T of such triangles. Our results include constructions that yield feasible values of T that are close to Goodman's minimum and the obvious maximum of $\binom{n}{3}$. A failed attempt to prove existence of constructions for values of T using a continuous distribution shed considerable light on the distribution of T in a random two-coloring and motivated constructions exhibiting the fact that T can be exactly equal, or close to, the expected value of T given a random two-coloring of the edges of K_n where edges are colored red or blue independently with probabilities p and $1-p$ respectively. (Received September 19, 2007)