1096-05-2322 **Chad B Birger*** (chad.birger@usiouxfalls.edu), 1101 W. 22nd St., Natural Science Area, Sioux Falls, SD 57105, and **Daniel Schaal**. *Zero-Sum Rado Numbers for some Linear Equations.*

In 1916, I. Schur proved the following theorem: For every integer t greater than or equal to 2, there exists a least integer n=S(t) such that for every coloring of the integers in the set $\{1, 2, ..., n\}$ with t colors there exists a monochromatic solution to $x + y = z$. R. Rado, who was a student of Schur, found necessary and sufficient conditions to determine if an arbitrary linear equation admits a monochromatic solution for every coloring of the natural numbers with a finite number of colors. Let L represent a linear equation or inequality and let t be an integer greater than or equal to 2. The least integer n, provided that it exists, such that for every coloring of the integers in the set $\{1, 2, ..., n\}$ with t colors there exists a monochromatic solution to L is called the t-color Rado number for L. If such an integer n does not exist, then the t-color Rado number for L is infinite. In this talk, we will consider a variation of 2-color Rado numbers using zero-sum solutions. Given a 2-coloring, $\Delta : \{1, 2, ..., n\} \to \{0, 1\}$, a zero-sum solution for an equation in m variables is the m-tuple, $(x_1, x_2, ..., x_m)$ that forms a solution for an equation and $\Delta(x_1) + \Delta(x_2) + ... + \Delta(x_m) \equiv 0 \bmod 2$. (Received September 17, 2013)