1145-05-2868 **Anisah N. Nu'Man*** (anuman@ursinus.edu). *Counting Rainbow Triples.* Preliminary report.
Let $S = [n]$. Given the equation $(eq) : c_1x + c_2y = c_3z$, for constants c_1, c_2, and c_3, let T be the subset of $[n]$ consisting of all solutions to the equation (eq). For $r \in \mathbb{N}$, an exact r-coloring of $[n]$ is a surjective map $c : [n] \to [r]$. We say that a subset of T is *rainbow* if every element in the subset has a different color. The *rainbow number of n with respect to the equation eq*, denoted $rb(n, eq)$, is the minimum number of colors needed to guarantee that any (exact) coloring of $[n]$ has a rainbow in T. Thus, $\mathrm{rb}(n, c_1x_1 + c_2x_2 = c_3x_3) = r$ implies that there exists an exact $(r-1)$-coloring of $[n]$ that contains no rainbow solutions and that *any* exact r-coloring of $[n]$ will contain a rainbow solution. Within this talk we will discuss upper and lower bounds for the rainbow number of $\mathrm{rb}([n], x_1 + kx_2 = x_3)$, where $k \geq 1$. (Received September 25, 2018)