1125-11-2197 **Ryan William Matzke*** (matzk053@umn.edu), 1920 South 1st Street, Unit 506, Minneapolis, MN 55454. *Looking for Sum-Freedom: The Maximum Size of (k,l)-sum-free Sets.* Preliminary report.

Let G be an Abelian group and let $A \subseteq G$. For any $h \in \mathbb{N}_0$, we define the h-fold sumset of A as

$$hA = \left\{ \sum_{i=1}^{h} a_i : a_i \in A \right\}.$$

For $k, l \in \mathbb{N}_0$, with $k > l$, we say that A is (k,l)-sum-free if $kA \cap lA = \emptyset$. Sets that satisfy this for $k = 2$ and $l = 1$ are often simply called sum-free sets. In 2005, Green and Ruzsa we able to find the maximum size of a sum-free subset of any finite Abelian group. Using results from Bajnok, Plagne, and Hamidoune, we can begin finding the maximum size of (k,l)-sum-free subsets of finite abelian groups through the use of (k,l)-sum-free arithmetic progressions. (Received September 19, 2016)