1106-06-2310 **Jillian E Parker*** (jep030@shsu.edu) and **Monica Elizabeth Gorman** (mgorman4@nd.edu).

Omega Values of the Generators of Certain Primitive Numerical Monoids.

Let M be a commutative, cancellative, atomic monoid with units $M^\times$ and atoms (or irreducibles) $\mathcal{A}(M)$. For $x \in M \setminus M^\times$, we define the omega function by $\omega(x) = n$ if n is the smallest positive integer such that if $x \mid a_1 \dots a_t$ with each $a_i \in \mathcal{A}(M)$, then there is a $T \subseteq \{1, \dots, t\}$ with $|T| \leq n$ such that $x \mid \Pi_{k \in T} a_k$. Moreover, the ω-function measures how close to prime an element is. We will conjecture simple formulas for determining these omega values of a primitive numerical monoid in any embedding dimension, where the set S is generated by a generalized arithmetic sequence of the form $\langle a, ah + d, ah + 2d, \dots, ah + xd \rangle$ where $a,\ d,\ h$ and, x are positive integers and $gcd(a, d) = 1$. We show by applying a theroem by Omidali and Rahmati that these results are valid and enhance the understanding of generators of certain primitive numerical monoids. Our research was supervised by Dr. Scott Chapman (Sam Houston State University) and funded by NSF grant DMS-1262897. (Received September 16, 2014)