1067-13-2118 **Lance Bryant*** (lebryant@ship.edu), Mathematics Department, Shippensburg University, 1871 Old Main Dr, Shippensburg, PA 17257, and **James Hamblin** and **Lenny Jones**. *Unique Maximal-Length Factorization in Numerical Semigroups.* Preliminary report.

A numerical semigroup $S = \langle n_1, n_2, \ldots, n_t \rangle$ is a subset of the natural numbers including 0 such that $0 \in S$, S is closed under addition, and S has finite complement in the natural numbers. We say $n_1, n_2, \ldots, n_t$ are the minimal generators of S, i.e., $S = \{\sum c_i n_i \,|\, c_i \geq 0\}$ and any other set of generators contains this set. An element $s \in S$ may be able to be expressed as a nonnegative linear combination of the minimal generators (called a factorization) in several ways. A maximal-length factorization is one that requires the most minimal generators. For example, in $S = \langle 7, 10, 13 \rangle$, we have $62 = 10 + 13 + 13 + 13 + 13 = 7 + 7 + 7 + 7 + 7 + 7 + 10 + 10 = 7 + 7 + 7 + 7 + 7 + 7 + 7 + 13$. Thus 62 has three factorization and the last two are maximal-length factorizations. This talk will focus on maximal-length factorizations when S has three minimal generators with particular interest in when every element of S has exactly one maximal-length factorization. (Received September 22, 2010)