1145-11-673   **Stephan Ramon Garcia*** (`stephan.garcia@pomona.edu`), 610 N College Ave, Claremont, CA
91711. *Mean, median, and mode factorization lengths in numerical semigroups.*

A numerical semigroup is an additive subsemigroup of $(\mathbb{N}, +)$. If $n_1, n_2, \ldots, n_k$ are generators for a numerical semigroup S, then a *factorization* of n is an expression $n = a_1 n_1 + \cdots + a_k n_k$, in which the natural number $a_1 + \cdots + a_k$ is the *length* of the factorization. Much of the literature deals with extremal factorization behavior, such as the maximum and minimum factorization lengths. Quantities of intermediate size, such as the mean, median, and mode factorization lengths are more subtle. We use techniques from analysis and probability to describe the asymptotic behavior of these quantities. Surprisingly, the asymptotic median factorization length is described by a number that is usually irrational. This is joint work with Christopher O'Neill and Samuel Yih. (Received September 12, 2018)