1135-05-591 **Jeske Glenn**, **Christopher ONeill*** (coneill@math.ucdavis.edu), **Vadim Ponomarenko** and **Benjamin Sepanski**. *Augmented Hilbert series of numerical semigroups.*

A numerical semigroup S is a subset of the natural numbers that is closed under addition, and a factorization of $n \in S$ is an expression of n as a sum of generators of S. The Hilbert series of S is the rational generating function $\sum_{n \in S} t^n$, and there are several characterizations of the numerator in terms of key properties of S. In this talk, we characterize the numerator of several "augmented" Hilbert series, where the coefficient of each t^n is some arithmetic quantity derived from the factorizations of n, such as the maximum factorization length of n or number of distinct factorization lengths of n. The results presented here are from an undergraduate research project from the 2017 SDSU REU. (Received September 09, 2017)