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**Tara N Gomes\*** (tngomes@sdsu.edu). *Numerical semigroups, Polyhedra, and Posets: Exploring the Kunz Polyhedra.*

A numerical semigroup is a subset of the non-negative integers that contains zero and is closed under addition. There are several longstanding open conjectures related to these objects. Recently, the connection between numerical semigroups and a family of polyhedral cones has become a trending area of research. In this presentation we seek to develop the bijection between semigroups and polyhedral integer points, and motivate the use of geometry to approach these conjectures.

We explored these ideas during the 2019 San Diego State REU program, as well as through continued undergraduate research

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