1154-VS-2683   **Marietta Elizabeth Geist*** (`geistm@carleton.edu`), **Alvaro Jose Cornejo**, **Kayla Iman Harrison**, **Abigail G Loe** and **Owen Gary-Dennis Ekblad**. *The Modified Szpiro Conjecture and Elliptic Curves with Specified Isogeny.*

Given three positive, relatively prime integers a, b, c such that $a + b = c$, it is rare to have the product of the primes dividing them to be smaller than each of the three. In 1985, David Masser and Joseph Oesterlé made this precise through their celebrated "ABC Conjecture." In 1988, Oesterlé showed that the ABC conjecture is equivalent to the modified Szpiro conjecture which states that for each $\epsilon > 0$ there are finitely many rational elliptic curves $N_E^{6+\epsilon} < \max\{|c_4^3|, c_6^2\}$ where N_E is the conductor of E and c_4 and c_6 are the invariants associated to a minimal model of E. Recently, Barrios showed that for a rational elliptic curve E, there is an explicit lower bound which depends only on the torsion subgroup of E. Our project seeks to create databases of rational elliptic curves in order to study the relationship between the modified Szpiro conjecture and elliptic curves with specified isogeny degree. This work is part of PRiME (Pomona Research in Mathematics Experience, NSF-1560394). (Received September 17, 2019)