1146-11-176 **Hannah Larson** and **Ian Wagner*** (iwagner@emory.edu). *Hyperbolicity of the partition Jensen polynomials.*

A sequence $a(n)$ is log-concave if $a(n) \geq a(n-1)a(n+1)$ for all n. Despite the extensive study of the partition function it wasn't until 2013 that Desalvo and Pak established the log-concavity of $p(n)$ for all $n > 25$. Log-concavity is just the first of an infinite family of inequalities known as the higher Turán inequalities. A recent result of Griffin, Ono, Rolen, and Zagier on hyperbolicity of Jensen polynomials implies that the partition function will eventually satisfy every degree Turán inequality. In joint work, Hannah Larson and I make this statement effective by showing the degree $3, 4$, and 5 Turán inequalities are satisfied by $p(n)$ for $n \geq 96, 206$, and 381 respectively. We also give an upper bound of $(3d)^{24d}(50d)^{3d^2}$ on what n must be in order for $p(n)$ to satisfy the degree d Turán inequality. (Received January 21, 2019)