1145-11-1529 **Sarah Peluse*** (speluse@stanford.edu). *Bounds for sets without polynomial progressions.*

Let $P_1, \ldots, P_m \in \mathbb{Z}[y]$ be polynomials with zero constant term. Bergelson and Leibman's generalization of Szemerédi's theorem to polynomial progressions states that any $A \subset [N]$ lacking nontrivial progressions of the form $x, x+P_1(y), \ldots, x+P_m(y)$ satisfies $|A| = o(N)$. Proving quantitative bounds in the Bergelson–Leibman theorem is a difficult generalization of the problem of proving reasonable quantitative bounds in Szemerédi's theorem, and results are known in only a very small number of special cases. In this talk, I will discuss recent progress on this problem, including work of mine on long polynomial progressions in finite fields and work of mine with Sean Prendiville on the progression $x, x+y, x+y^2$ in the integers. (Received September 23, 2018)