1173-13-53 **Thai Thanh Nguyen*** (tnguyen11@tulane.edu), 6823 St. Charles Ave., New Orleans, LA 70118. *The Initial Degree of Symbolic Powers and Ideal Containment Problem.*

What is the smallest degree of a homogeneous polynomial that vanishes to order m on a given finite set of points, or more generally on some algebraic variety in projective space? A classical result of Zariski and Nagata tells us the set of such polynomials is the $m-$th symbolic power of the defining ideal I of the variety. To bound the generating degree of the symbolic powers of I, we can study containment between symbolic powers and ordinary powers of I. Conversely, knowing bounds for generating degree can help us study containment. My talk will be an introduction to this subject. I will also present some results from our joint work with Sankhaneel Bisui, Eloísa Grifo and Tài Huy Hà. (Received September 12, 2021)