Nicolas Addington, Brendan Hassett, Yuri Tschinkel and Anthony Várilly-Alvarado* (varilly@rice.edu), Department of Mathematics MS 136, Rice University, 6100 S. Main St., Houston, TX 77007. Recent progress on the rationality of some special cubic fourfolds.

In this talk I will survey recent progress on the rationality of certain special cubic fourfolds, including work of Auel, Bolognesi, Russo, Stagliano, as well as collaborative work of Addington, Hassett, Tschinkel and myself. I will pay close attention to the case of cubic fourfolds of discriminant 18, which form a Noether-Lefschetz divisor $C_{18}$ in the coarse moduli space of cubic fourfolds $C$. I will explain how to produce a countably infinite union of codimension-one loci in $C_{18}$ parametrizing rational cubic fourfolds. (Received August 18, 2020)