Dimitri Vaintrob (Massachusetts Institute of Technology). "Mazur's isogeny theorem and generalizations."

Abstract: In 1978 Mazur proved a remarkable theorem: that any isogeny $E \longrightarrow E'$ of elliptic curves defined over the rationals must have degree ≤ 163, as long as the degree is prime. (In fact, it suffices for the isogeny to have cyclic kernel). I'll talk about work of Merel and Momose and a joint paper with Eric Larson which gives a generalization of this theorem to arbitrary number fields. Time permitting, I'll also talk about some related results for abelian varieties.