1086-11-1790 **David Zureick-Brown*** (dzb@mathcs.emory.edu) and **David Zywina**. *Abelian varieties with big monodromy.*

Serre proved in 1972 that the image of the adelic Galois representation associated to an elliptic curve E without complex multiplication has open image; moreover, he also proved that for an elliptic curve over Q the index of the image is always divisible by 2 (and in particular never surjective). More recently, Greicius in his thesis gave criteria for surjectivity and gave an explicit example of an elliptic curve E over a number field K with surjective adelic representation. Soon after, Zywina, building on earlier work of Duke, Jones, and others, proved that the adelic image 'random' elliptic curve is maximal.

In this talk I will explain recent joint work with David Zywina in which we generalize these theorems and prove that a random abelian variety in a family with big monodromy has maximal image of Galois. I'll explain what big monodromy and maximal mean and explain the analytic and geometric techniques used in previous work and the new geometric ideas – in particular, Nori's method of semistable approximation– needed to generalized to higher dimension. (Received September 24, 2012)