1086-11-284 **Shabnam Akhtari**, **Chantal David**, **Heekyoung Hahn** and **Lola Thompson*** (lola@math.uga.edu). *How often is $\#E(\mathbb{F}_p)$ squarefree?*

Let E be an elliptic curve over $\mathbb{Q}$. For each prime p of good reduction, E reduces to a curve E_p over the finite field $\mathbb{F}_p$ with $\#E_p(\mathbb{F}_p) = p+1-a_p$, where $|a_p(E)| \leq 2\sqrt{p}$. In this talk, we discuss the problem of determining how often $\#E(\mathbb{F}_p)$ is squarefree. Our results in this vein are twofold. For any fixed curve E, we give an asymptotic formula for the number of primes up to X for which $\#E_p(\mathbb{F}_p)$ is squarefree. This resolves affirmatively a conjecture of David and Urroz. Moreover, we use sieve methods to improve upon a result of Gekeler that computes the average number of primes up to X for which $\#E_p(\mathbb{F}_p)$ is squarefree (over curves E in a suitable box). This talk is based on joint work with Shabnam Akhtari, Chantal David, and Heekyoung Hahn. (Received August 15, 2012)