Abstract: Elliptic curves are fundamental and well-studied objects in arithmetic geometry. However, much is still not known about many basic properties, such as the number of rational points on a “random” elliptic curve. We will discuss some conjectures and theorems about this “arithmetic statistics” problem, and then show how they can be applied to answer a related question about the number of integral points on elliptic curves over $\mathbb{Q}$. In particular, we show that the second moment (and the average) for the number of integral points on elliptic curves over $\mathbb{Q}$ is bounded (joint work with Levent Alpoge).

Following the talk, there will be tea in SEO 300.