Student Algebraic Geometry Seminar

Organizer(s): Charley Crissman and Andrew Critch

Friday, 4:00–5:00pm, 740 Evans

March 11 **Andrew Critch**, UC Berkeley

Picard group of the moduli stack of elliptic curves

"Introduction to stacks, by example" will be this talk's subtitle and purpose. David Mumford first computed the Picard group of $\mathcal{M}_{1,1}$, the moduli stack of elliptic curves, as an exercise to help him understand how algebraic stacks work. To start off, I'll describe in concrete geometric detail what this moduli stack "really is", and what it means to have an invertible sheaf (line bundle) on it. Then, following Mumford's example, I'll show its Picard group is isomorphic to $\mathbb{Z}/12$.

After the seminar, everyone is invited out for drinks and dinner with the speaker.