Abstract: A degree one del Pezzo surface is the blowup of $\mathbb{P}^2$ at 8 general points. By the classical Cayley-Bacharach Theorem, there is a unique 9th point whose blowup produces a rational elliptic surface with a section. Via this relationship, we can construct a stable pair compactification of the moduli space of anti-canonically polarized degree one del Pezzo surfaces. The KSBA theory of stable pairs $(X, D)$ is the natural extension to dimension 2 of the Deligne-Mumford-Knudsen theory of stable curves. I will discuss the construction of the space of interest as a limit of spaces of weighted stable elliptic surface pairs and explain how it relates to some previous compactifications of the space of degree one del Pezzo surfaces. This is joint work with Kenny Ascher.

See \url{http://math.bu.edu/research/geom/seminar.html} or contact Yoosik Kim yoosik@bu.edu or Siu-Cheong Lau lau@bu.edu for more information.