Compression and Shear Driven Jamming of Frictionless U-Shaped Particles in Two Dimensions[1] THEODORE MARSCHALL, University of Rochester, ANDREW LOHEAC, SCOTT FRANKLIN, Rochester Institute of Technology, STEPHEN TEITEL, University of Rochester — We simulate a system of soft, frictionless, U-shaped particles (staples), under both isotropic compression and uniform shear flow in two dimensions. The shape of the particles allows them to interlock, causing a geometry induced particle cohesion. We investigate the jamming transition of this system as the packing fraction is increased, in an effort to learn whether such geometric cohesion in novel shaped frictionless particles can produce effects similar to what is found for frictional smooth disks.

Theodore Marschall
University of Rochester