Bacteria use various strategies to bias swimming behavior and achieve directed motion against a flow, maintain alignment with gravity or travel up a chemical gradient. NYU MRSEC investigators devised purely geometric means of biasing the motion of artificial nanorod swimmers. These artificial swimmers are bimetallic rods, powered by a chemical fuel, which swim on a substrate printed with teardrop-shaped posts. The artificial swimmers are hydrodynamically attracted to the posts, swimming alongside the post perimeter for long times before leaving. The rods experience a higher rate of departure from the higher curvature end of the teardrop shape, thereby introducing a bias into their motion. This bias increases with swimming speed and can be translated into a macroscopic directional motion over long times by using arrays of teardrop-shaped posts aligned along a single direction. This method provides a protocol for concentrating swimmers, sorting swimmers according to different speeds, and it could enable artificial swimmers to transport cargo to desired locations.

**Figure.** Sketch of artificial Au-Pt nanorod swimmers interacting with and array of teardrop-shaped posts. Rods swim with the Pt-end leading when placed in a solution of hydrogen peroxide fuel. After encountering a post, swimming rods tend to travel in proximity to the perimeter, then preferentially depart from the tip where the curvature is highest.