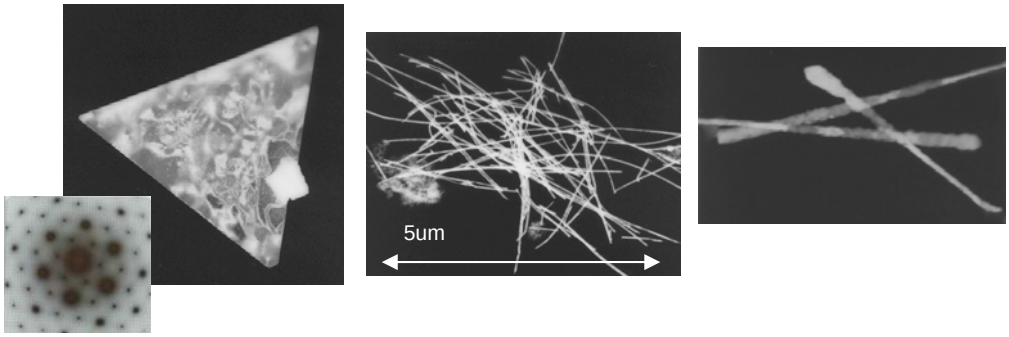
My research efforts have been divided between several projects, including fabricating and characterizing molecular electronic devices, metallic nanostructures, and fabricated silicon devices.

Molecular Devices

The nanopore has been the workhorse of our lab's molecular electronic device research for nearly 10 years. It has undergone many design iterations and has enabled a wide range of experiments which have helped to elucidate the details of electronic conduction through molecular films. Details of these experiments are available in the research page.

Nanocrystals and Metallic nanowires

I have synthesized a variety of nanostructures by electrodeposition and wet-chemical synthesis, including poly- and single-crystalline metal and semiconductor nanowires, nanoparticles, and nanoplatelets, such as those shown here. Some of these structures have been used for plasmon propagation experiments by Aric Sanders.



Nanobars

I have designed and begun fabricating silicon nanodevices which may be used in both sensor applications and for studying low dimensional physics.