

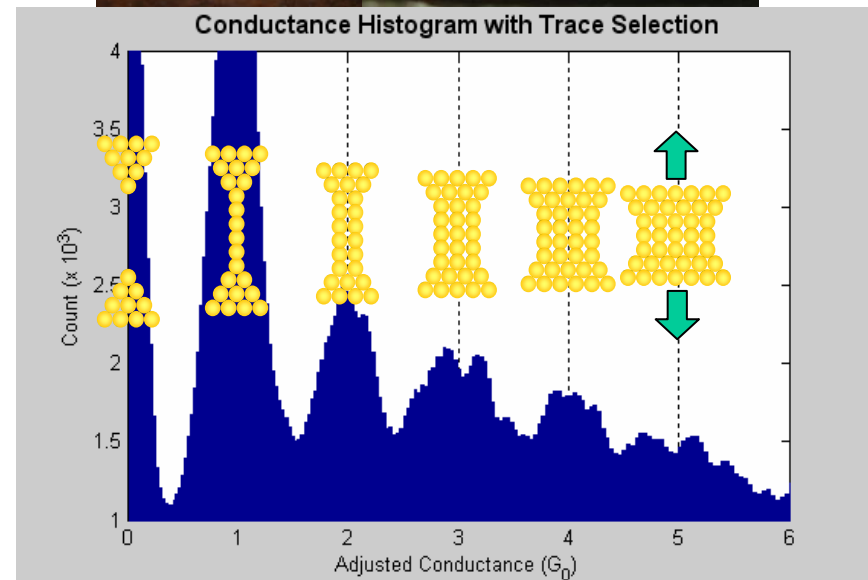
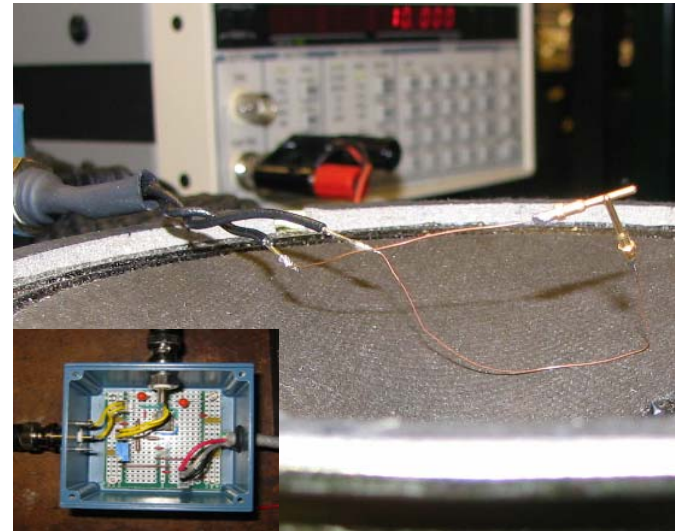
# Undergraduate Research in Atom Chains

H. C. Manoharan, Stanford University, PHY-0425897

- Undergraduate physics major, Adam Sciambi, created a unique but simple apparatus (right, top) to observe quantization in electrical conductance at room temperatures through chains of atoms.

- Current was measured through breaking gold contacts (a “break-junction”) and thousands of data sets were acquired. Conductance was then plotted as a histogram (right, bottom) to demonstrate quantization. The atomic configurations of gold atoms corresponding to each conductance quantum are shown superimposed.

- This apparatus fed into the design of a low-temperature system targeting one of the center goals: single spin detection and manipulation.



The Center for Probing the Nanoscale (CPN), an NSF NSEC