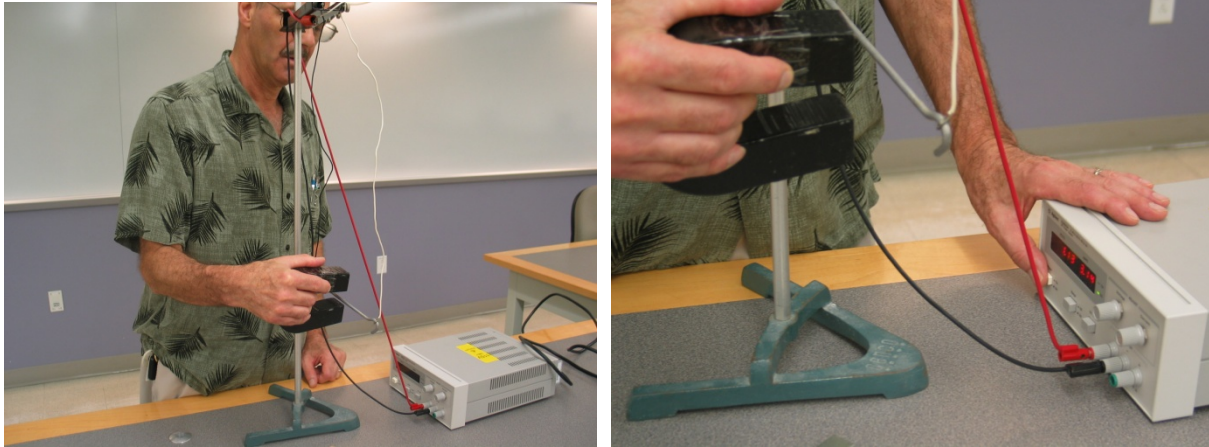


## Magnetic Force on Current-Carrying Wire



**Purpose:** To show that when a current-carrying wire is put in a magnetic field, a magnetic force acts on the wire.

**Location:** Room 146; shelf M5, rod in vertical bin near door to room 144, black horseshoe magnet on M5, HP power supply on C3.

Place a vertical rod in the desk and attach the black clamp with the suspended metal “wire” (aluminum rod) high enough for class to see. Make sure the circuit is complete and the wires are connected. Connect the red and black banana plugs to the terminals of the power supply. Set the power supply to maximum current and voltage. With the power supply off, show that the wire does not react to the horseshoe magnet. Hold the horseshoe magnet with the rod between the poles (left photo). Turn the power supply on and watch the wire move in one direction (right photo). Switch the terminals, changing the direction of the current, and show that the wire moves in the opposite direction when the power is turned on.