# Lecture 2: August 29th, 2001

# Electrical Quantities

## A )Current
## B) Voltage
## C) Power

# Reading:
# Schwarz and Oldham 1.1

# Summary

- Charge on an electron is $- 1.6 \ 10^{-19}$ Coulombs
- Current is charge per unit time = (charge per particle) x (number of particles in motion) x (velocity)
- Current flows in a closed loop
- Voltage is the potential energy per unit charge
- Labeling convention $V_{AB} = V_A - V_B$
- One node can be chosen as a reference with voltage of zero
- Energy is $E_{AB} = V_A Q - V_B Q = V_{AB} Q$ where Q is the charge
- Power is the time rate of change of energy
- Resistance is voltage divided by current