

# Project 4: Analog Sensor Processing

# Questions?

# Project 2-3

- Finish demos
- Catme surveys are due on Monday
  - Everyone should have received email already

# Project 4: Analog Sensor Processing

- Each group will receive a Sharp distance sensor
- Connect to your circuit board & then to the Arduino
- Code: read the raw sensor state
- Collect data and analyze

Windows users: download and install RealTerm:

<http://www.cs.ou.edu/~fagg/classes/ame3623/downloads.html>

# Component 1: Circuit

- Connect sensor to circuit board:
  - Power
  - Ground
  - Signal
- Run a jumper from signal to analog input line on the Arduino

# Component 2: Test Function

- Initialize serial port and analog input port
- Loop:
  - Read the raw sensor value
  - fprintf() the sensor value

# Component 3:

## Data Collection and Analysis

- At least 5 samples each for: 5, 6, 8, 10, 14, 20, 30, 40, 60, 80 cm.
- Two plots:
  - Sensor value as a function of distance (cm)
  - Sensor value as a function of  $1/\text{distance}$  (1/cm)

# New Hardware for Today

- One Sharp IR sensor (one more coming)



# Next Time

Serial communication