## Data Acquisition tasks

- Temperature measurement (Budock & Landolfi)
  - see directory temperature_code
  - Function to read resistance averaged over NTH measurements, with uncertainty estimate
  - Function to calculate temperature and uncertainty from resistance
- RH measurement (Klass & Steward)
  - see directory humidity_code
  - Function to read RH and temperature from Si7021
  - Function to calculate dew point and estimated uncertainty
- Pressure measurement (Lomax & Ayala)
  - see directory pressure_code
  - Function to read pressure and temperature from BMP180
  - Function to calculate equivalent sea-level pressure
- Clock (Bergren & Larkin)
  - see directory clock_code
  - Function to read clock as numerical values
  - Function to format time as a string
  - Function to check clock
- SD card (Lang & Rosenberg)
  - see directory SDwrite_code
  - Function to write to file and validate that the correct amount of data was written
  - Function to check that the SD card is present and working correctly
- Statistical function (Chiavaroli & Defluri & Mccabe)
  - see directory stat_code
  - Function to keep a record of first four moments of temperature, RH, and pressure
  - Function to reset the statistical storage variables
  - Functions to calculate and return the mean, standard deviation, skew, and kurtosis
- Formatting output (Littin & Smith)
  - see directory formatting_code
  - Use variables returned by other functions to assemble a single line to be added to the data file
  - Check that the variables make sense and substitute an error flag for bad values
- Timing/dispatch and error checking (Juklo & Shoup)
  - see directory loop_code
  - Timing and decision making to call other functions
  - Blink LED with error status
- Setup/initialization (Haas & Young)
  - see directory setup code
  - Initialize sensor and variables

    - Check for serial input enabled or disabled
    - Watchdog timer routine
- Calibration (Sanders & Sawyer)
    - see directory calibration_code
    - Function to check for calibration file, load calibration, and validate the calibration constants

https://github.com/ellehere/daq440