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Arduino Uno Microcontroller with Commercially Available Sensors Towards Generating Student Accessible Raw Meteorological Data GABRIELLE HENSON, MEGHAN TANNER, INDRAJITH SENEVIRATHNE, Department of Geology Physics Lock Haven University, Lock Haven, PA 17745 — Microcontroller systems can be a boon to cost – effective techniques that can be used to enhance teaching at college level. We have used Arduino microcontroller coupled with commercially available sensors to systematically measure, record and analyze temperature, humidity and barometric pressure and to upload the real time raw data to cloud. Corresponding data will be available in classroom settings for predictions, analysis and simple weather forecasting. Setup was assembled via breadboard, wire and simple soldering with an Arduino Uno ATmega328P microcontroller connected to a PC. The microcontroller was programmed with Arduino Software while the bootloader was used to upload the code. Commercial DHT22 humidity and temperature sensor and BMP180 barometric pressure sensor were used to obtain relative humidity, temperature and the barometric pressure. System was mounted inside a weather resistant enclosure and data measurements were obtained and were uploaded onto the PC and then to cloud. Cloud data can be accessed via a shared link in a General Education class for multitude of purposes.

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