Open Water Level

Photo Credit: Ellen Briggs, UHM

Initial Challenge:

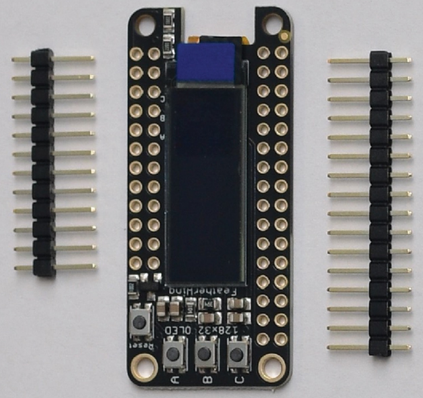
Design a ~ $100 open-source, easy-to-reproduce water level sensor for high school science classes and field trips

Open Water Level

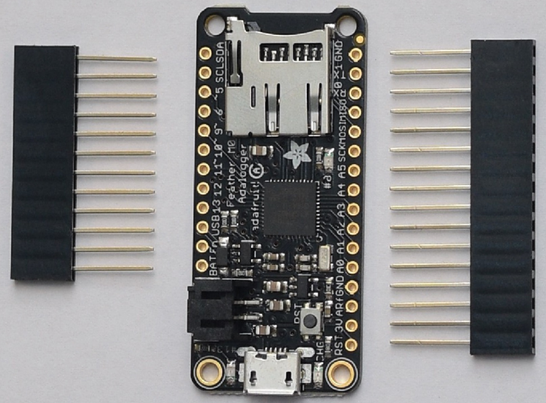
Teaches:

- Basic wiring
- Basic coding
- Soldering
- Water level/tides
- Analog signals
- QA/QC

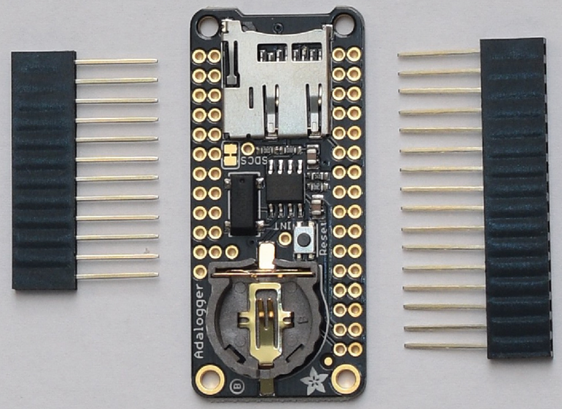
Micro SD card



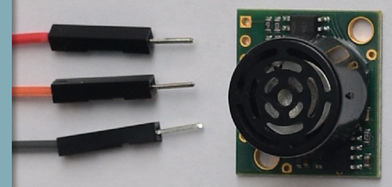
OLED display



Adafruit M0 processor



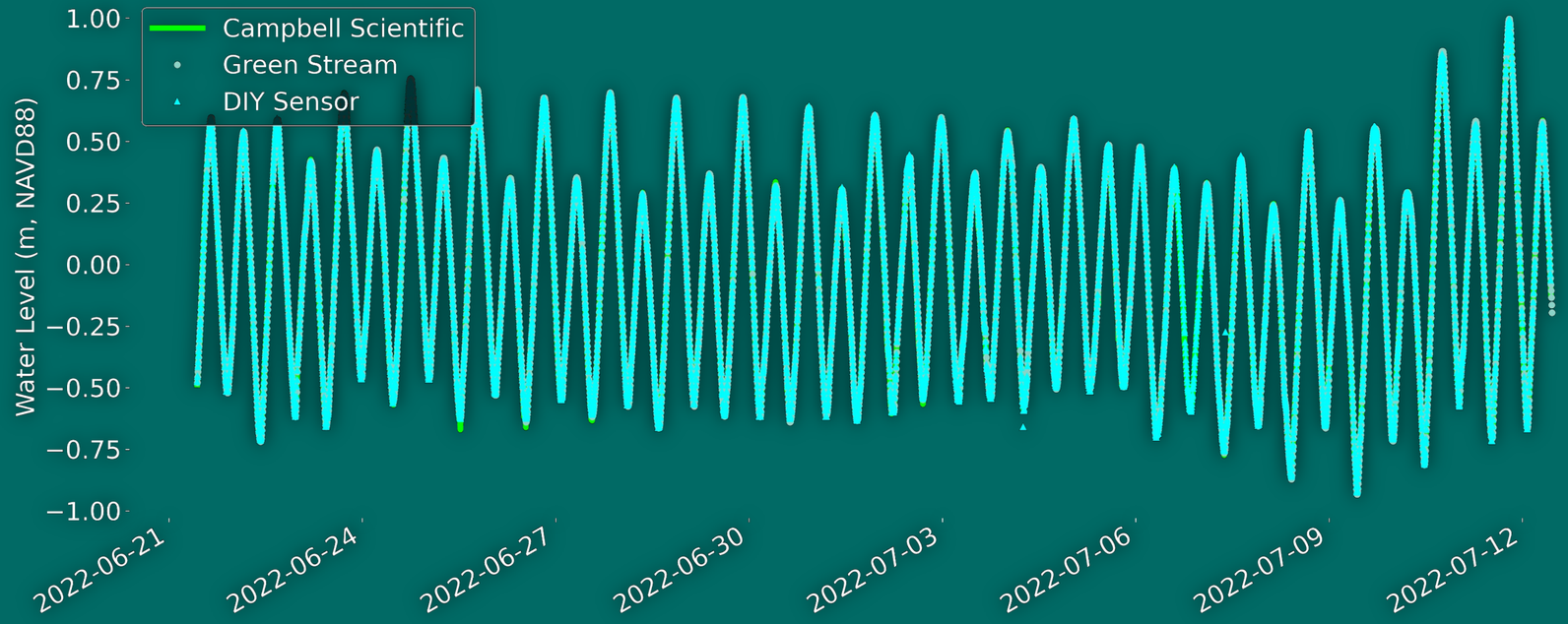
Real time clock (RTC)



Ultrasonic sensor

Lithium battery

Proof-of-Concept:

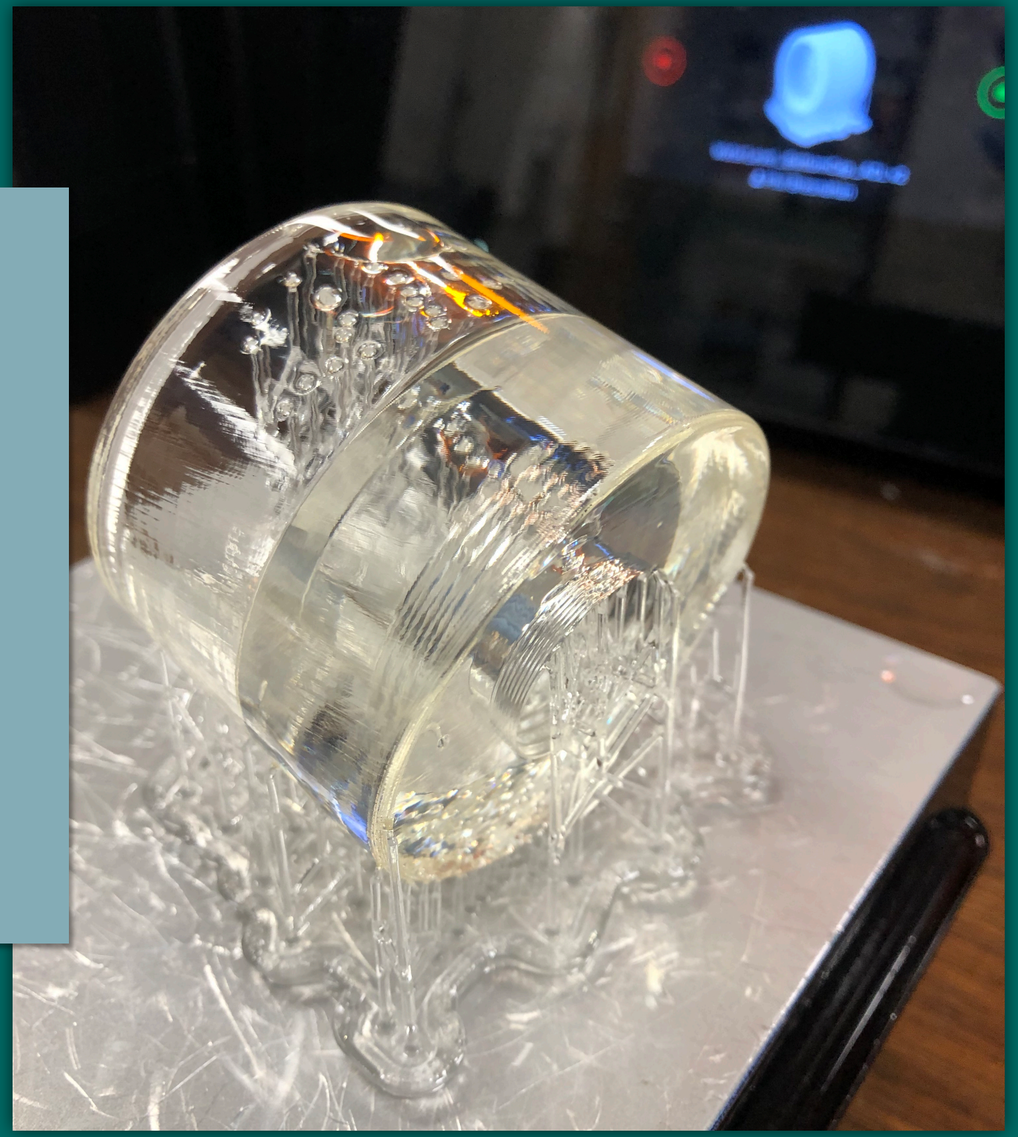


Our low-cost sensor has results almost indistinguishable from more expensive, commercial versions

- Error: < 1.5 cm and still improving
- Sufficient for flood detection, tide monitoring, education, etc.

Ongoing Research:

- 3D printing custom components (easy to reproduce/fabricate)
- Adding cellular connectivity, CORMP.org for data visualization/management
- Two sensors to be deployed on Smith Creek imminently
- With Principal Investigators Monica Rother and Andrea Hawkes, student Kendra Devereux
- Examine inundation and saltwater intrusion upstream of Cape Fear River/dredging



Want to get involved?

- (IMPORTANT! We do not yet have a designated volunteer program. We appreciate any interest, but any volunteer would be a bit of a guinea pig.)
- With ~ $300 and legal, safe access to a fixed dock structure to which you could mount a sensor, we could explore the potential of collaborating on the deployment of the cell-enabled, real-time device
- Write to bresnahanp@uncw.edu to learn more