



# THE DISCOVERY CENTER MAYFLY

**THE DISCOVERY CENTER**  
Discover yourself in nature

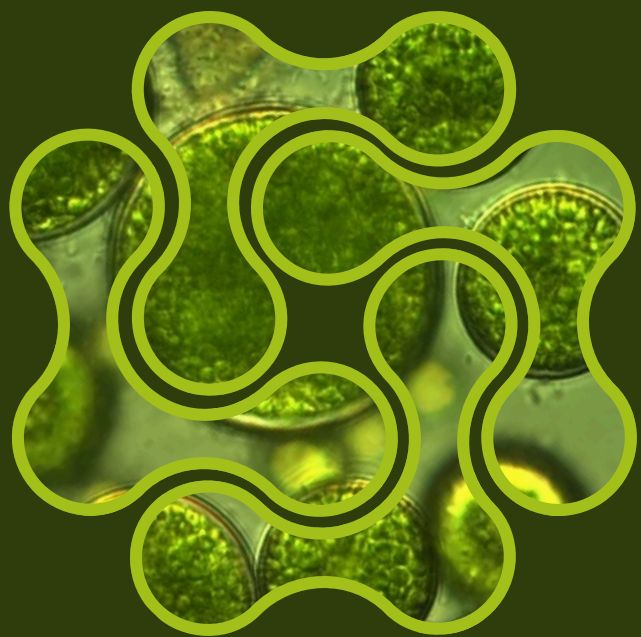
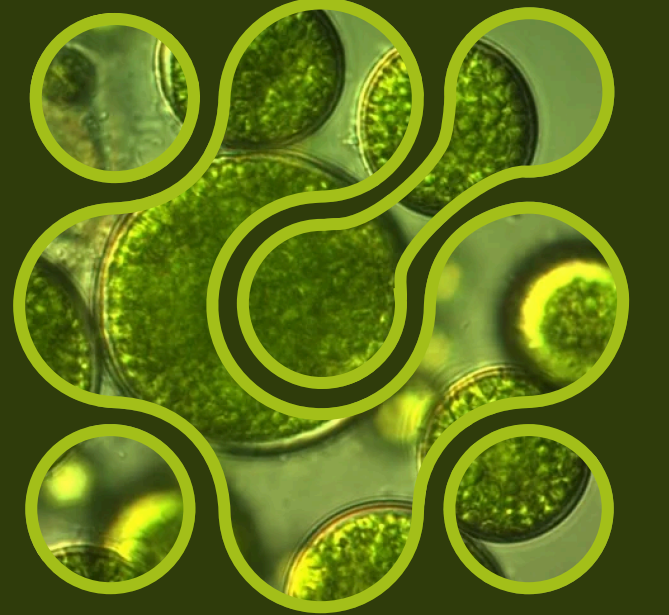
# SENSOR



**BRYN MAWR**  
COLLEGE

## The Discovery Center

The Discovery Center is part of the National Audubon Society through Audubon Mid-Atlantic, a non-profit dedicated to preserving and protecting birds across Maryland, Pennsylvania, and the District of Columbia through habitat maintenance. The Discovery Center is a space for visitors to engage with nature in a productive, educational way. It is all centered around the abandoned drinking water reservoir in the East Park.

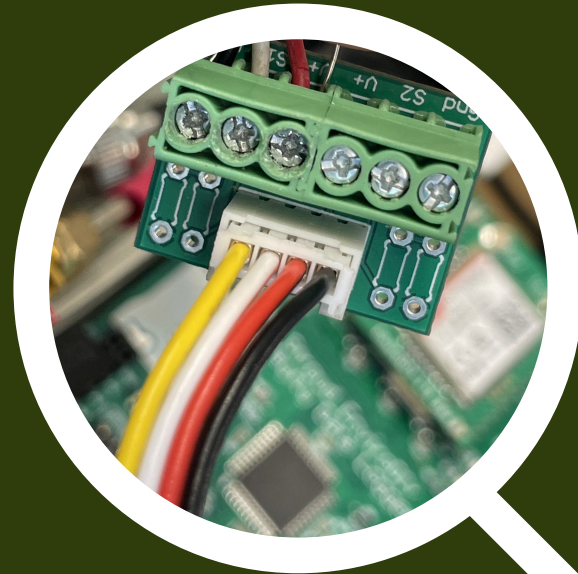


The East Park Reservoir is a shallow, closed-system body of water. Only 6-8 feet in depth, it is especially vulnerable and unable to cope with toxic algal blooms, which occur more frequently throughout the fall and summer months. These blooms can decrease the level of oxygen in the water and block out the sun, harming the over seven species of fish that reside in the reservoir. This has further harmful effects as birds that consume fish or even just have prolonged exposure to the blooms can be impacted by them. We were put in touch with Bria Wimberly to complete the coding on a water sensor that would monitor the conditions of the reservoir to predict and eventually prevent algal blooms in order to protect the park and the birds that the center is dedicated to.

## The Sensor and Why it's Needed

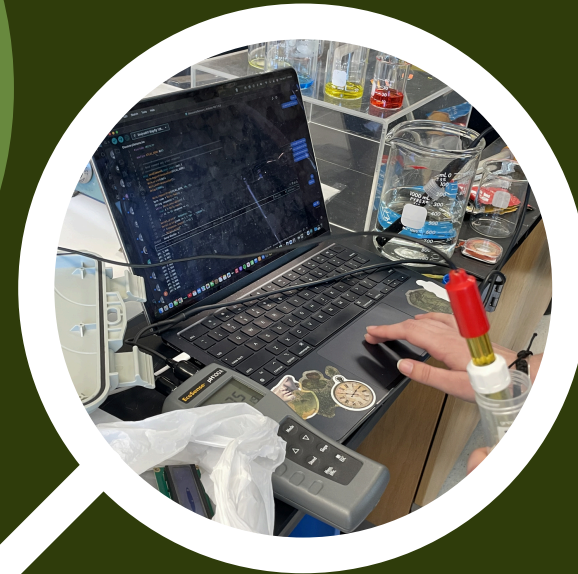
For this project, I was in charge of the coding and set up of our sensors. This was a long process involving a lot of coding and wiring of the sensors. I was given some code written by a previous intern, which I then had to go through and figure out what was done.

The DO sensor was not prebuilt into Mayfly code libraries which meant I had to write a custom class in order to feed the data directly to Monitor My Watershed. I had to take apart and reattach the wires of the sensor to the right place on the circuit board.



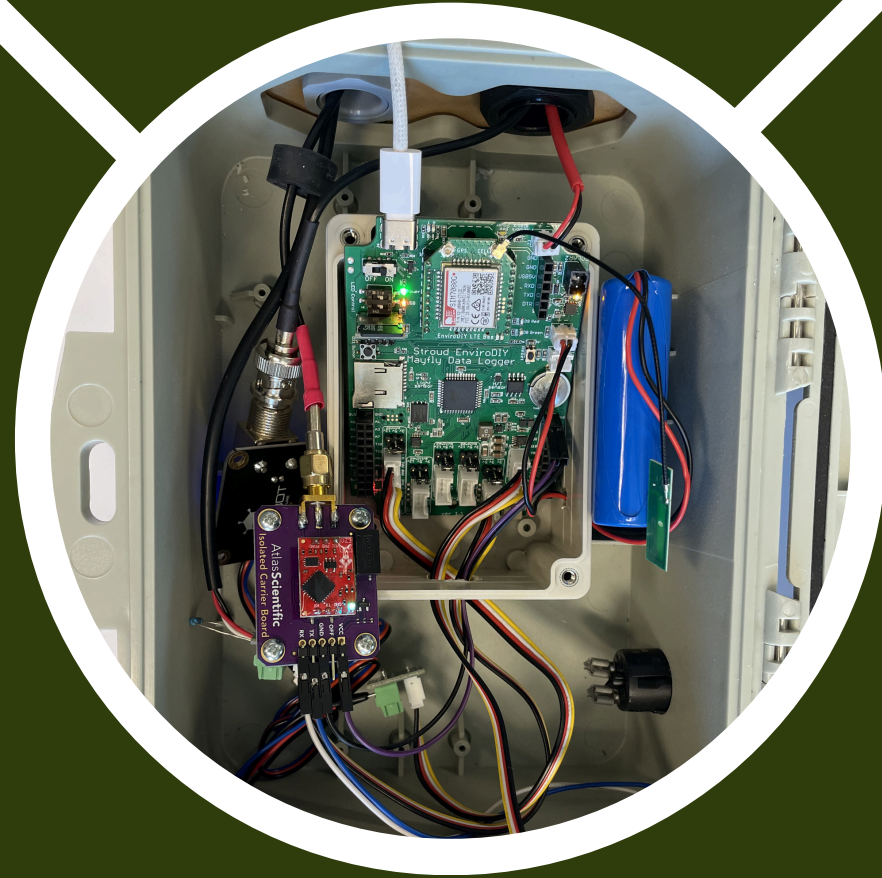
### Eden Raich 2027

I went through it one sensor at a time, and rewrote and fixed the code. The set up for the Mayfly and the SIM card worked, but there were a lot of issues with the individual sensor code. The temperature probe and the PH sensor were relatively easy.



Once everything was set up, I had to calibrate and test the PH sensor and the DO sensor. I then tested all the sensors against BMC Geology sensors to confirm they were providing accurate data.

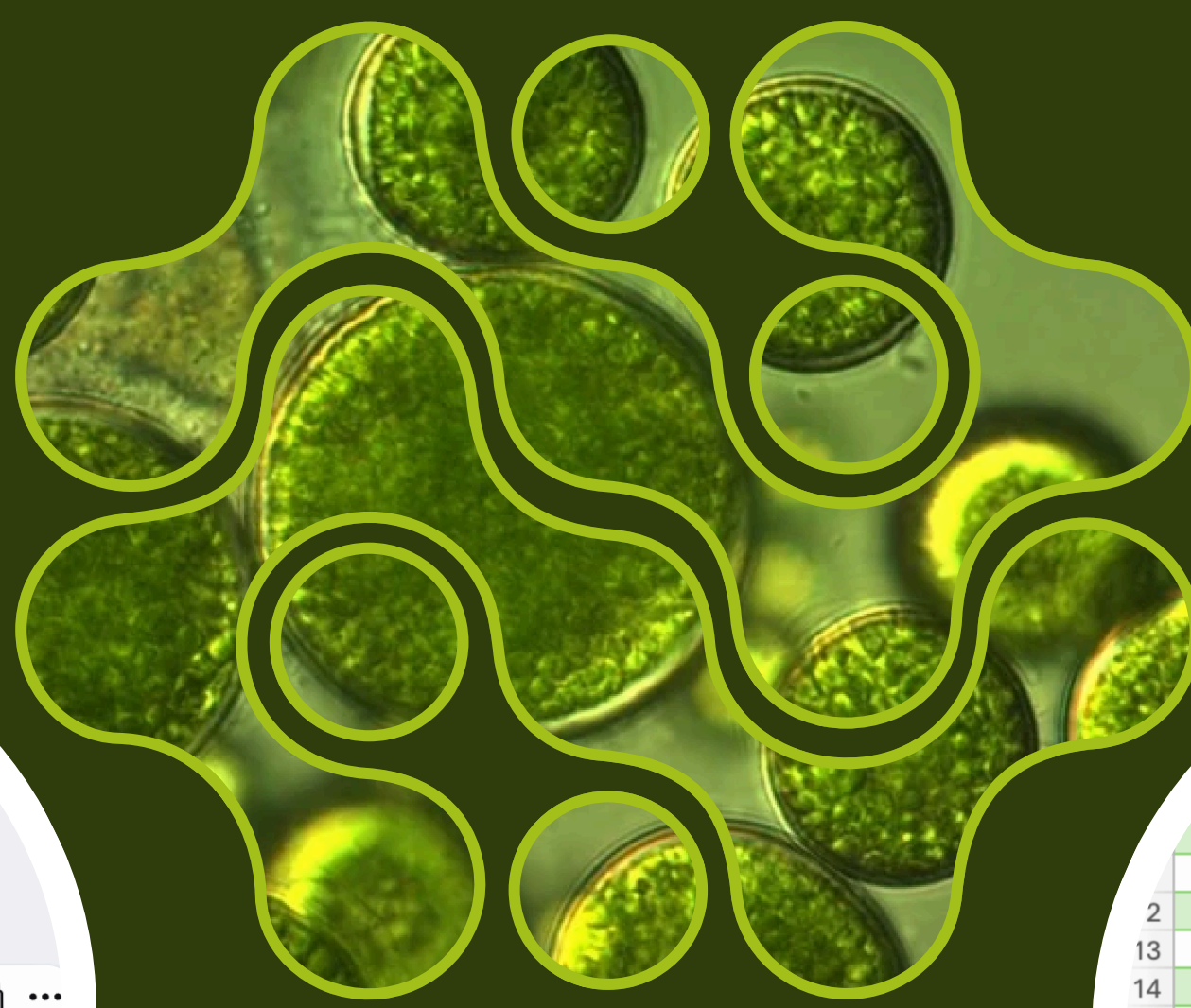
My work on this project involved keeping in communication with our contact at the Discovery Center: writing update emails, scheduling Zoom meetings, and delegating tasks. I acted as the go between for project progress, and ensured that we met the proper deadlines. I was also in charge of part of the final deliverable: the infographic. I ensured that the product closely resembled the Discovery Center website, in order to maintain aesthetic consistency.



I worked on how Monitor My Watershed retrieves its data behind the scenes and built a script that automatically pulls this data and converts it into a live updating CSV file, which can also be used in Excel. An part was uncovering how the data is fetched through hidden API requests, which was challenging at first since it wasn't directly accessible. I also found that the graphs from MMW couldn't be directly embedded into Squarespace, so I worked around this by linking to the live graphs instead.

I learned a lot during this project, especially regarding the importance of frequent, transparent communication. I enjoyed creating an infographic that was both informative and in line with the Discovery Center's current graphic design. I know that I have come away with a lot of new and strengthened skills that will be valuable elsewhere.

This project helped me better understand how to adapt when things don't go as planned. Since there wasn't enough real data available at first I used sample datasets to test ideas and make progress. Working with my team was also important as we were able to share ideas and figure out solutions together.



The sensor was installed on April 23rd, 2026 and is currently collecting temperature, pH and dissolved oxygen data.

Although we were not able to gather and analyze any data in the time allotted to work with our partner, we feel that we have set them up for success in the coding and set up of the sensor, and the infographic and the Standard Operating Procedure for the code.

Special Thanks To:

Bria Wimberly, Sean Keenan, Alejandro Sanoja, Jennifer Sporer and Liv Raddatz for all of their help and support throughout this project

### Olivia Crolle 2027



### Shalom Lencha 2027

