

October/November BCS Update

Greetings!

I apologize for this late update. Many surprise exams and unexpected papers fell into my schedule. So, because November was a little slow, I decided to lump together October and November into one report.

At the beginning of the October, we were approved to begin our protein study. The first step of this is to show the most effective way to extract proteins from fish tissue. From there, we will be able to look at differences in protein expression from a healthy specimen from an unaffected lake compared to a sick fish. This will give us evidence that there are changes happening at a protein level.

After searching through the list of possible ways we could add to what we already know about BCS, we decided to take a step back and look at old information we had been given in the spring. This consisted of a couple reports and some contacts who worked on the project in 2015. I spent the majority of October chasing leads of who had last worked with the samples three years ago and I think I finally got the entire story of the journey that those fish from Pipe Lake took.

1. U.S. Fish and Wildlife Services Lab, La Crosse

Specimens were sent to La Crosse to identify whether or not Black Crappie Sarcoma was a common virus that was manifesting differently in black crappies. It tested negative for the three suspected viruses, Infectious Pancreatic Necrosis Virus, Largemouth Bass Virus, and Viral Hemorrhagic Septicemia Virus. It also came back negative for a bacterial infection. They did isolate a virus but it was something they hadn't seen before. That sample, along with possibly a fish, was sent to a laboratory in Florida. However, ever since that first virus was isolated, they never were able to find another virus in fish tissues sent to them. This makes it questionable whether or not it was actually a virus or something that was only in that particular fish.

2. Florida Laboratory

The samples arrived here but there was damage to the virus, preventing the lab leader from running certain tests. The fish tissue was put through a technique called Next Generation Sequencing. In an overview, this is the act of sequencing all of the DNA in one sample. They would be able to find a virus because the sequence would look different than the main sequences, which would be fish DNA. However, they did not find viral DNA and so they put the project on hold indefinitely.

After visiting the La Crosse lab, they have a new interest in the BCS and are willing to redo the tests, looking at the disease a second time. Hopefully with their new equipment they will be able to find some evidence for what's causing the lesions and tumor. That's our hope anyway.

Mid-November we submitted an abstract to ASBMB Orlando, a national conference for a biochemistry society where many people much smarter than I am are going to be presenting their information. We will be bringing the bulk of this project to the conference in hopes that someone there can give us some other leads on what's happening to the fish and possibly look for partners to collaborate on this with in the summer. We are also preparing to present this at another conference held at UW-Stout to raise awareness of the disease and find out if other states have similar infections.

Retracing the steps of where the specimens have gone feels a lot like a soap opera with a cliffhanger ending. I imagine it's going to take a lot of groups working together to shed any sort of light on this problem. All we can do right now is slowly chip away at the mystery and solve this one piece at a time.

-Kayla

November/December plans

We will be looking into purchasing a cell line for attempting to grow viruses at the University. We would start that in January if that's the direction we want to go. December we will be deep in the protein identification process, which is exciting but incredibly tedious at the same time.

Funds:

Initial total	\$5,000
Fees for ASBMB	\$75
Total for end of November	\$4,925