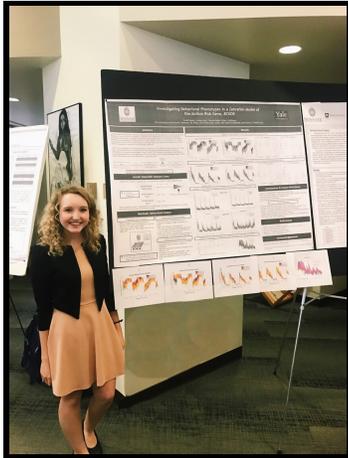


## **Summer Internship Report 2017**

### **Sarah Woody, C'19**

Hometown: Kingston, Tennessee



### **Yale Child Study Center New Haven, Connecticut**

**Provide an overview of the organization/research project and a summary of your responsibilities, tasks, and/or projects.**

This summer I was given the incredible opportunity to work in Dr. Ellen Hoffman's research lab at the Yale School of Medicine, which uses zebrafish as a scientific model to study autism risk genes. My project goal was to identify behavioral phenotypes in zebrafish mutants of the autism risk gene *bckdk*. To accomplish this, I placed zebrafish larvae in three different behavioral assays:

1. 3-day Rest/Wake Behavioral Assay
2. Visual Startle Response Assay
3. PTZ Sensitivity Assay

For each assay, the fish were placed in a video monitoring system and their activity was tracked. I would then gather the fish and genotype them using PCR. I would then obtain the data generated from the assays and run them through Matlab to generate graphs based on genotype. In this way I could effectively see activity differences between wild type zebrafish and homozygous mutants.

**During your internship, what did you accomplish or how did you make a difference? In what ways did you grow in your professional and technical skills?**

Through my experiments, I was able to generate some preliminary data for Dr. Hoffman that can be used as a reference for future experiments. Now that her lab has an idea of the effect a *bckdk* homozygous mutation has on a zebrafish, they can move forward with more experiments and eventually test these mutant fish with pharmacological agents that target neural pathways that are disrupted due to the mutation.

Working in Dr. Hoffman's lab was an incredible learning experience for me. I was able to get hands-on biology research lab experience from performing PCRs to performing dissections under the microscope. I was also able to sit in on lab meetings and present my research, which was great practice in effectively communicating my scientific findings and answering questions. The poster session at the end for all of the interns was great practice for this as well.

**Describe a problem that you helped to solve at your internship. What skills or knowledge from your education at Sewanee helped you address the problem?**

Problems and inconsistencies with my project data would come up in individual meetings with Dr. Hoffman, and I feel that the science, especially lab science, courses that I have taken at Sewanee greatly prepared me for coming up with solutions and tweaks to the project.

**In what way were your teamwork skills strengthened?**

I worked closely with two post-grads in the lab who helped me and guided me through this internship. This in itself helped strengthen my teamwork skills, as I constantly worked with the others in the lab to either help them with projects or work out schedules for when we needed to use the behavior equipment. There were several times where I had finished my tasks for the day and I would help the other members do dissections, PCRs, or feed the zebrafish. Teamwork is an important aspect in a biology lab, as we would have lab meetings each week where every member got together with Dr. Hoffman to go over any lab administrative business and to present research for constructive feedback.

**How did your internship affect your career plans?**

I have always wanted to do something in the medical field, but one of the reasons I wanted to do this internship was to see if research was something I might be interested in doing in the future. This internship opened my eyes to a side of the science field I hadn't experienced before, and it definitely solidified my love for science and medicine. Also, I believe the skills and knowledge I gained during this internship will carry me through my future endeavors.

**In what ways did your internship cause you to encounter people of different backgrounds from your own? What steps did you take to communicate effectively with such persons? What did you learn from such persons' perspectives?**

The internship program itself under Dr. Linda Mayes and the Yale Child Study Center did a wonderful job at opening the interns up to new ideas and perspectives. While there were many interns from Sewanee, there were also interns from other schools across the country that we met with several times per week. There was a lecture series each week, where a researcher or doctor affiliated with the Child Study Center would come and speak to us about their research and what they do. This was then followed by an article written by the speaker or an article related to their topic that was discussed by the interns. These discussions were extremely beneficial, as each person has their own unique perspective, and it was an enriching experience getting to talk to them and hearing what they have to say. Although each intern had different career goals and were working on different projects, we were all able to find something we had in common, and I am thankful for the connections I made during my time there.

**Words of thanks to your internship funding donors:**

I have always wanted to pursue a career in medicine, and due to your gracious donation, I was able to take a huge step forward in that goal with this internship. I would have never thought that I would have the chance to intern at the Yale School of Medicine, and it was definitely an enriching

experience. I have learned so many new techniques that will carry me through my time at school and beyond, and I am so grateful. Thank you!