Troy Biernath 8/1/2020

Reflection on Summer Research During COVID-19: ONDB

Working on the organonitrogen degradation database has shown me how connected yet variable biodegradation pathways are. Synthesizing and presenting the information in a cohesive way required me to evaluate and make decisions on what things should be considered related or distinct. It was surprising to me that compounds like cyanoguanidine have 3 or more different products from reactions in bacteria.

There are a number of useful skills I learned while working on the project. I learned how to turn a website from technically functioning to truly useful. Programming with R is extremely variable and learning to apply the simple things I had learned before, along with some HTML, was challenging but useful for future research I may do. Collaboration with the whole lab group helped determine what features would be useful and what excess features could be cut.

It was a unique experience during COVID-19 to find ways to communicate effectively. There are many potential platforms for communication, but the most useful ones seemed to be the ones that provided face-to-face interaction. I learned how to summarize my work in a way that could be quickly explained to the group as a whole in order to get constructive feedback. It was also useful to work together simultaneously, although remotely, so that we could prevent extra work due to miscommunication.

It was very useful to work as a team of students who could make our own decisions on details and preference issues, while still getting overall direction and feedback from senior researchers. There were many small decisions that Caleb, Dean, and I made ourselves about the formatting and clarity, but there were always some issues that we agreed it would be best to ask the senior researchers about, because we didn’t have enough experience to know what a user in the research field would want.

I did not do much database searching myself but organizing the databases and resources into distinct categories took some critical thinking and collaboration in the group that was very informative. Much of the time there was no instant feedback, so I had to be prepared to work on different aspects of the project depending on when other people were available to let me know how they wanted specific parts of the database. This was an extremely useful and relevant way to spend a summer in which only online research was possible. No in-lab experiments were required, but all of us students learned very valuable skills while also contributing something useful to the greater research community.