Student Researcher Presents Findings on Organism’s Ability to Preserve its Own Species

Bronson Teichert

Utah State University plant science major Alex Braeger presented his research on plant and animal reproduction as one of the 26 USU students selected to participate in Research on Capitol Hill at the Utah State Capitol in Salt Lake City. The North Logan native’s work focuses on daphnia magna, a small freshwater planktonic crustacean that has the ability to reproduce on its own and with other members of its species.

According to Braeger’s abstract, daphnia magna reproduce asexually during times of low environmental stress. The offspring are clones of the mother in many cases. During times of high environmental stress, the crustacean switches modes of reproduction and mates with male daphnia magna which creates greater genetic diversity and increases the chances of survival of the species.

Braeger is working to find a solution that would activate and disable the trigger that allows daphnia magna to switch modes of reproduction no matter the environmental conditions. These small creatures are found in freshwater environments like acidic swamps and rivers made of snow runoff.

“Our biggest challenge has been creating testing environments in which we can faithfully predict the biological changes in our subjects,” Braeger said.

The project began in May of 2018 with many discoveries surfacing along the way, but Braeger said his team in Professor John Carman’s lab have not reached their research goal yet. In fact, the obstacles gave Braeger a new perspective and respect for researchers who dedicate their lives to the work.

Braeger said his passion for the project has grown, and with that the anxiety of presenting his work on Capitol Hill to lawmakers that he hopes will share the same enthusiasm. He added that being accepted to present his findings at Research on Capitol Hill is also a great opportunity to get out of the lab spend some time in the city.

“I really look forward to sharing what we've been doing with people that are not in the scientific community,” Braeger said. “I also look forward to seeing what other students are researching and the possibility of finding something that I also might be really interested in. The potential to network is really exciting.”

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