

Gina Pappas

From: Kellie Navarro
Sent: Thursday, June 9, 2022 9:51 AM
To: Corey Colwill; Gina Pappas
Subject: Re: Reminder: Grua-O'Connell Final Report is Due

Hi Corey,

OK, perfect!

My project is on temperature impacts on the temperate coral, *Astrangia poculata*. *A. poculata*, inhabits hard-bottom environments from the Gulf of Mexico to Massachusetts and withstands large seasonal variation in temperature in its northern range (-2 to 26 °C). In terms of gene expression, a previous study with aposymbiotic *A. poculata* has shown more genes upregulated in response to cold stress, than heat stress. However, the response of the holobiont (coral host and symbiotic algae) to stress is unknown. I conducted an acute cold stress experiment to characterize gene expression in both host and algae under summer (12 °C) and winter water temperatures (6°C) at the northern range limit. I used RNAseq to characterize the transcriptomes of replicate symbiotic corals (n=10) exposed to summer or winter temperatures. I will present a differential expression analysis of both host and algal genes to test the hypothesis that one of the symbiotic partners plays a dominant role in the cold stress response. Understanding the cellular mechanisms of the temperature stress response in complex symbioses such as corals can help predict the future of coral populations in both temperate and tropical environments under increasing climate variability.

While I began this work during the Marine Science Semester, I will be continuing the data analysis portion of my project throughout my senior year with Dave Carlon and Amy Johnson as my co-advisors. I have already spoken with them about the project, and they have agreed to be my honors advisors. Since I have such a large dataset, I will begin data analysis this summer and will continue in the fall. We suspect that this part of the project along with the interpretation of the data analysis will provide a lot of findings that I can present during the initial honors presentation in the fall.

Thank you and let me know if I should include anything else!

Best,
Kellie

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From: Corey Colwill <ccolwill@bowdoin.edu>
Sent: Thursday, June 9, 2022 8:56 AM
To: Kellie Navarro <knavarro@bowdoin.edu>; Gina Pappas <gpappas@bowdoin.edu>
Subject: RE: Reminder: Grua-O'Connell Final Report is Due

Hi Kellie,

No worries! If you just wanted to send a brief update as to how your research has been unfolding, that would work for us!

Corey