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## INTRODUCTION

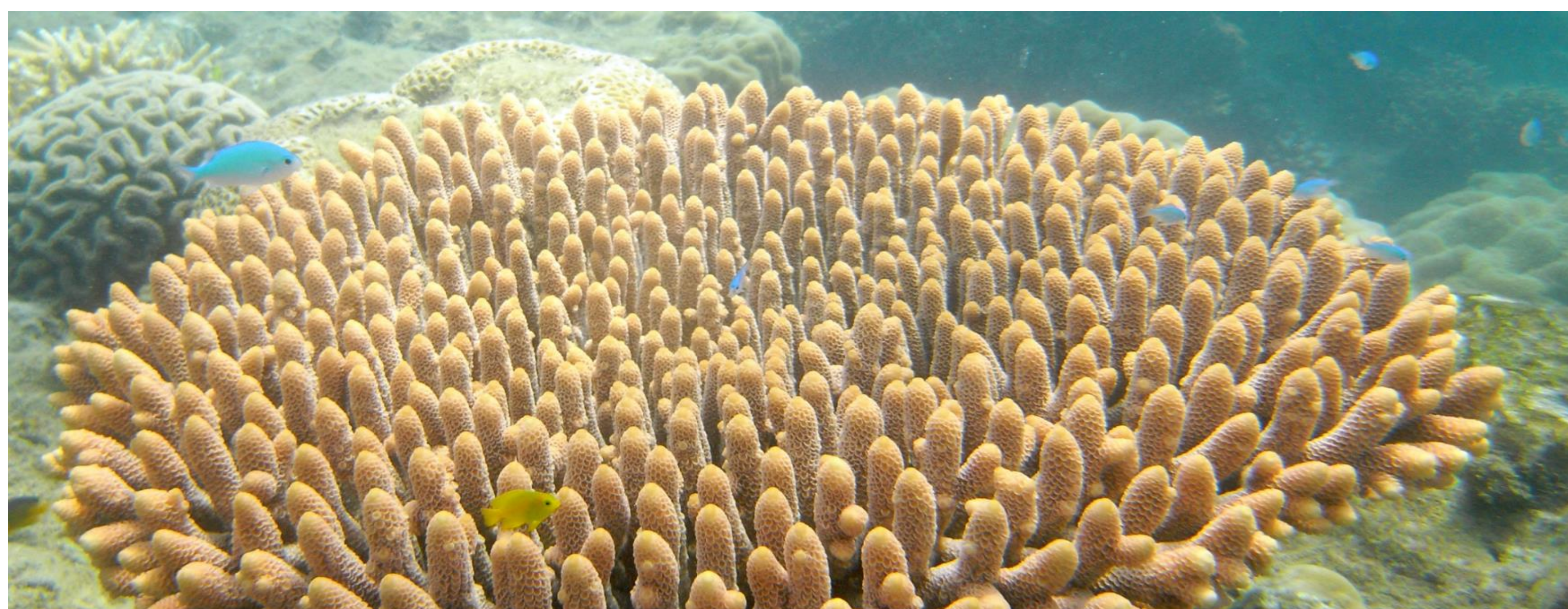
- Coral reefs sustain some of the most diverse ecosystems on Earth.
- Corals rely on endosymbiotic dinoflagellates – photosynthetic algae that provide nutrients and energy. In exchange, dinoflagellates are fed by coral waste and protected from the environment.
- This host buffering indicates the same environmental fluctuations such as lunar phase, time of day, and temperature impact the coral and symbiont to different degrees, although little research quantifies this.

## OBJECTIVES

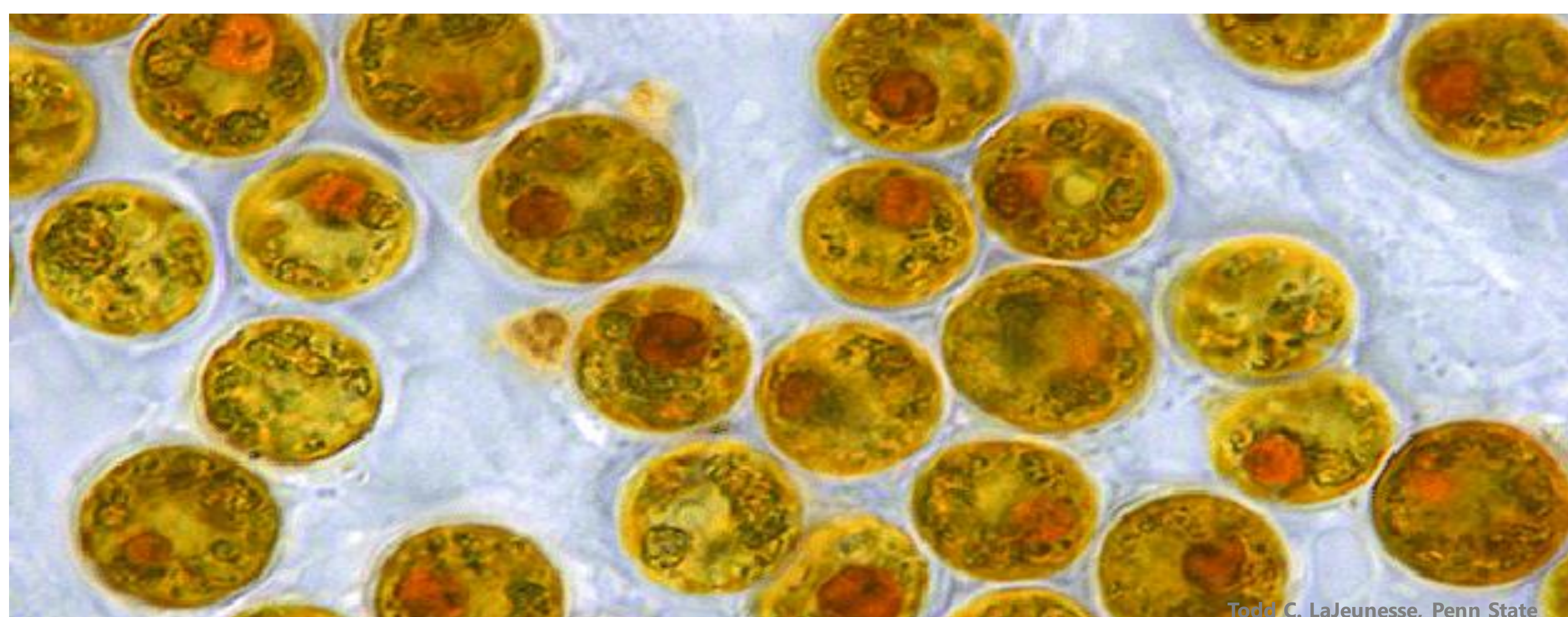
We aimed to:

- Assess host buffering in a coral-dinoflagellate symbiosis, using *A. millepora* and *C. goreau*; and
- Explore symbiont transcriptomic response to environmental rhythms (temperature, lunar phase, and time of day).

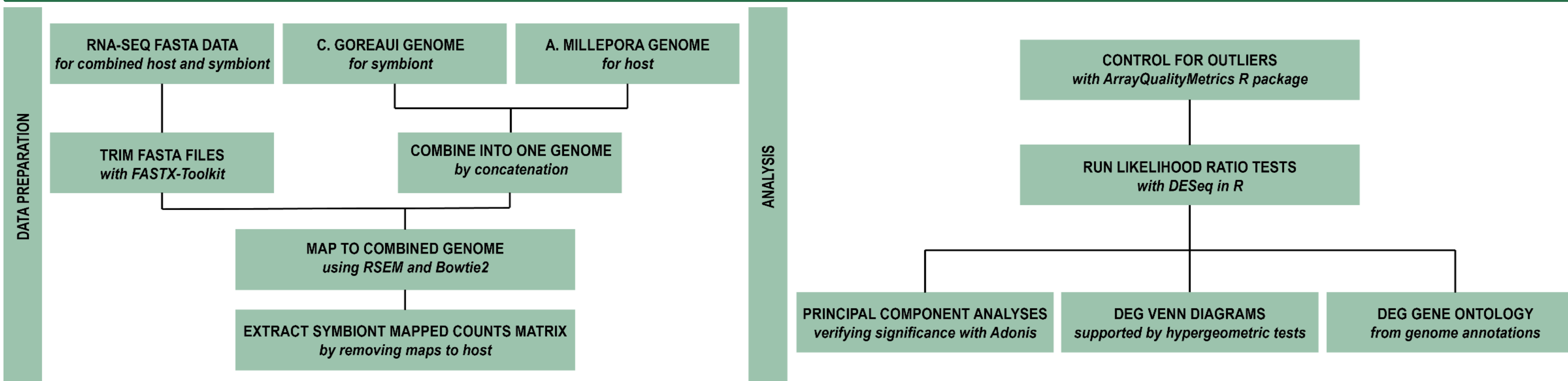
Coral Host *A. millepora*



Dinoflagellate Symbiont *C. goreau*

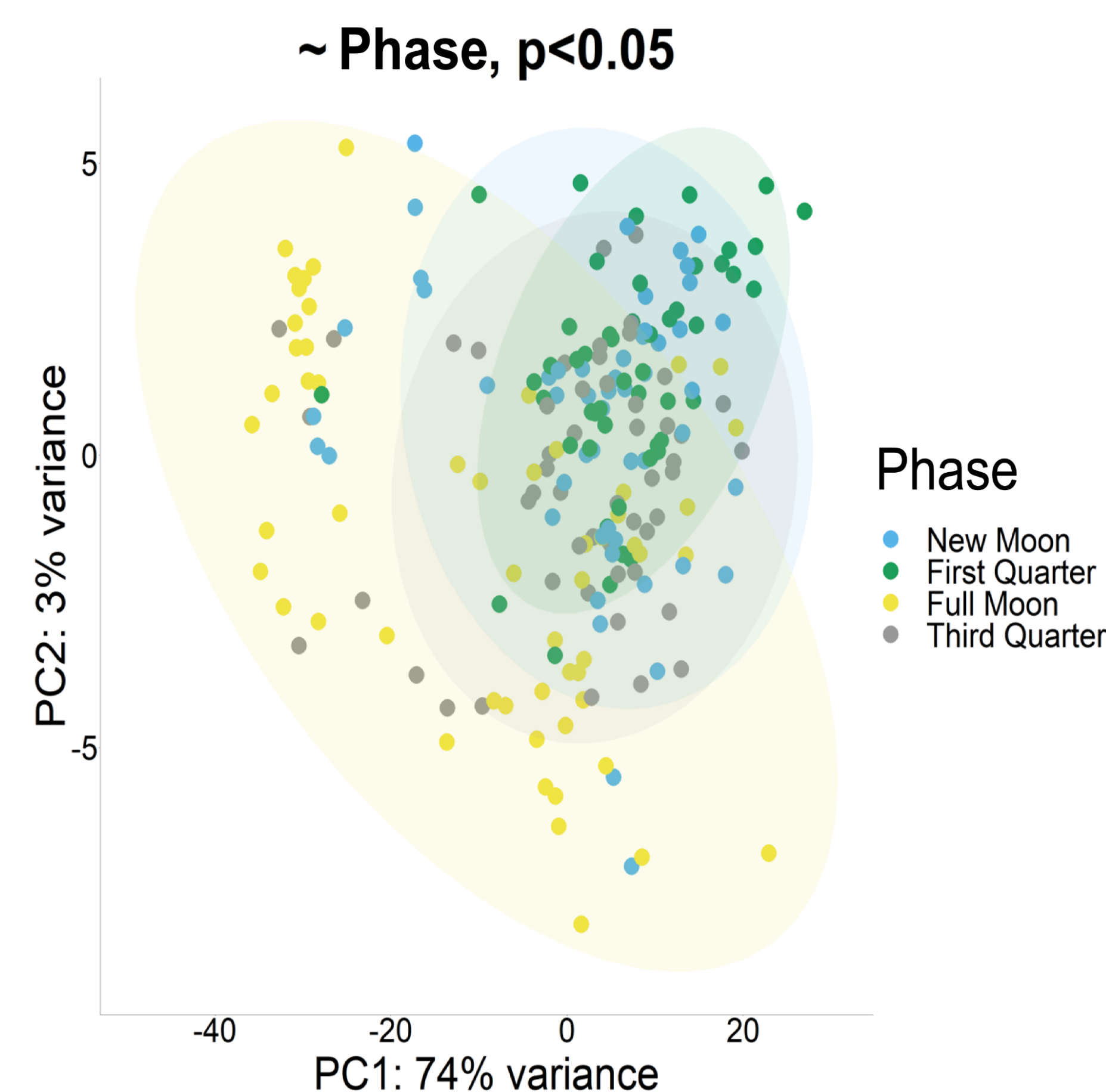


## METHODS

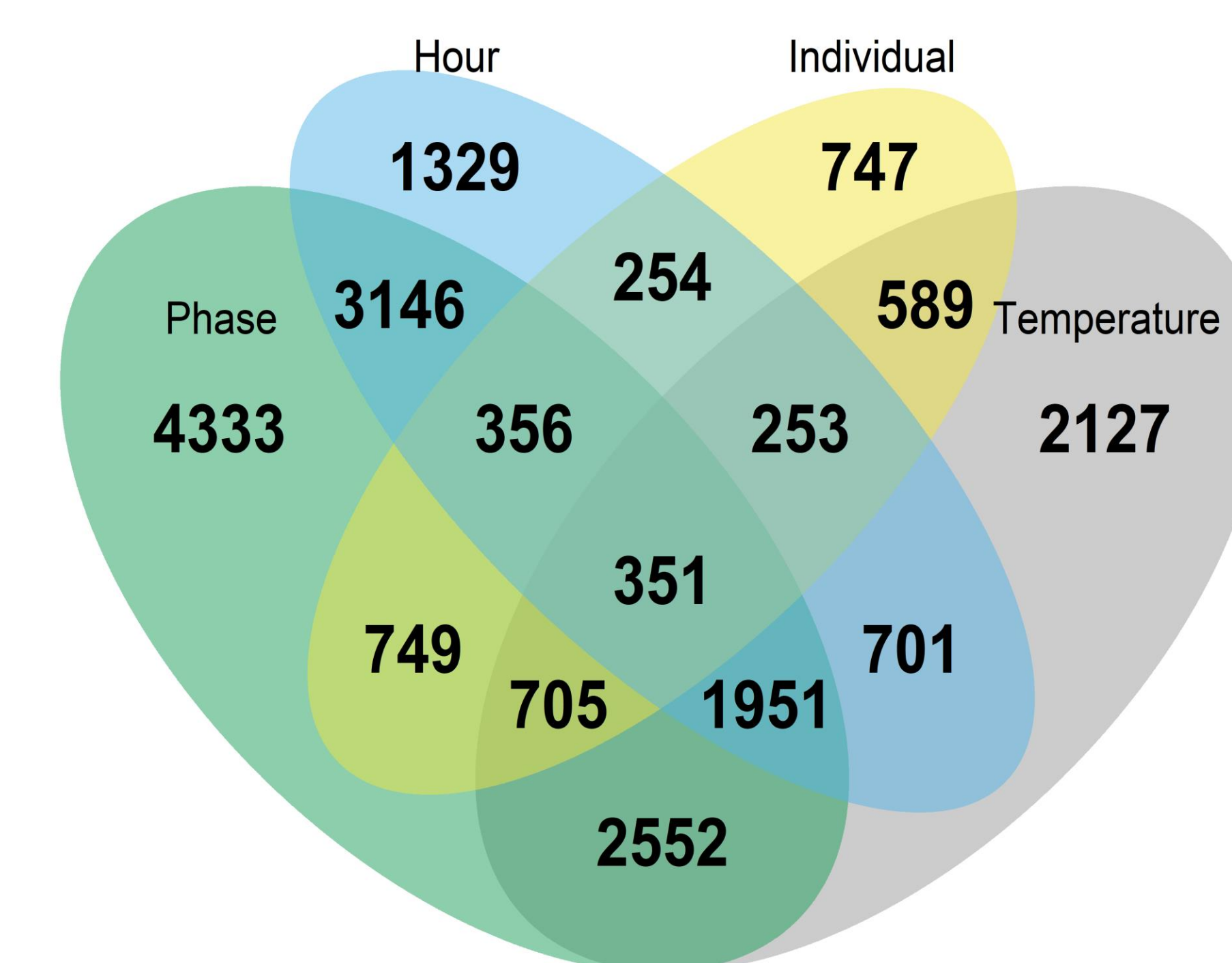


## RESULTS & CONCLUSIONS

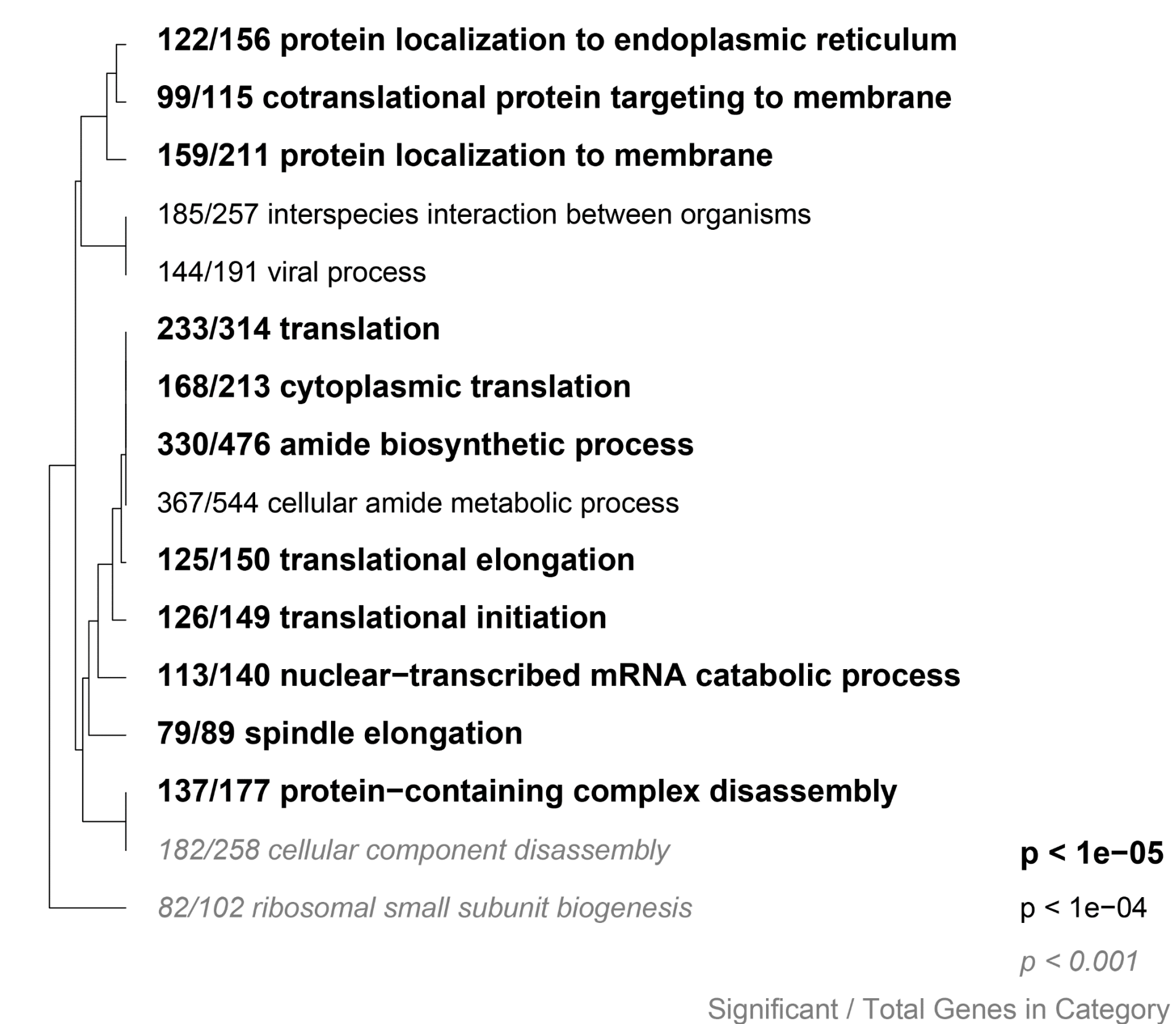
**Lunar phase drives gene expression in a tropical coral symbiont.**



**Many genes are significantly differentially expressed across multiple treatments.**



**Symbionts are functionally enriched for phase-related growth.**



## REFERENCES

Wright, R. M., Aglyamova, G. V., Meyer, E. and Matz, M. V. Gene expression associated with white syndromes in a reef-building coral, *Acropora hyacinthus*. *BMC Genomics* 2015, 16: 371.

Wuitchik DM, Wang D, Pells TJ, Karimi K, Ward S, Vize PD. 2019. Seasonal temperature, the lunar cycle and diurnal rhythms interact in a combinatorial manner to modulate genomic responses to the environment in a reef-building coral. *Mol Ecol*. 28(16):3629-41.

## ACKNOWLEDGEMENTS

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