

EVALUATION OF CLIMATE INDUCED CHANGES TO POREWATER BIOGEOCHEMISTRY IN MANGROVE/SALTMARSH ECOTONE

Anna R. Beard¹, Tracey B. Schafer¹, Samantha K. Chapman², Nicole Dix³, Todd Z. Osborne¹

¹Whitney Lab, University of Florida, St. Augustine FL

²Villanova University, Villanova Pennsylvania

³Guana Tolomato Matanzas National Estuarine Research Reserve, Ponte Vedra FL

Coastal wetlands can be found all over the globe and are recognized as some of the most productive ecosystems in the world. Saltmarshes dominant coastal wetlands in temperate zones while mangroves are limited to their poleward boundaries by freeze-induced mortality at the sub-tropical/temperate transition. With climate change, lack of freezing events in NE Florida have led to a northward expansion of mangroves into the historically saltmarsh dominated ecosystem i.e., *A. germinans* replacing *Spartina alterniflora*. Recent research suggests that warmer temperatures will likely change ecosystem dynamics via changes in dominant vegetation and increased biological activity. To investigate this, an in situ warming experiment using warming chambers (1.6 C° mean temperature increase) was conducted at three coastal wetlands along a latitudinal gradient within salt marsh cordgrass vegetation *Spartina alterniflora* and mangrove *Avicennia germinans* plots over a yearlong study. Seasonal sampling, via pore water well, *A. germinans* vs. *S. alterniflora* pore water nutrients were investigated along with warming vs non warming plots. Our findings showed no significant differences in warming vs. non-warming plots, and no significant differences in *A. germinans* vs. *S. alterniflora*. Seasonal differences in porewater total nitrogen, total phosphorus, dissolved organic carbon, salinity and ammonia stand alone in significance regardless of temperature or vegetation type.

PRESENTER BIO: Anna Beard is the Analytical Laboratory Manager for the Estuarine Biogeochemistry Laboratory at Whitney. She received a Bachelor of Science from Stetson University in marine science and has 10 years' experience in marine research. She has been a part of the Estuarine Biogeochemistry lab for 4 years running with a passion for coastal wetland research.