Christian Lopes, Florida International University
Research Mentor: James W. Fourquarean, Biology

**Goals**

- Understand lateral connectivity of seagrass ecosystem’s role in buffering anthropogenic impacts.
- Determine the response of carbon metabolism to resource availability from the landscape to organismal level.

**Preliminary Results**

**Methodology**

- Install hydrologic current sensors coupled with sensors of carbonate parameters and dissolved oxygen sensors at three sites along a nutrient gradient to measure metabolic responses.
- Measure production of organic and inorganic carbon and Carbon isotopes of carbon species at multiple locations at each site during seasons of high and low light regimes.

**Figure 1.** Seagrass beds adjacent to urban development and coral reefs.

**Figure 2.** (a) Carbonate metabolism proposed mechanism. (b) Sensor array to quantify the model.

**Figure 3.** Plant leaf carbon chemistry response to a resource availability gradient.

**Figure 4.** If we can identify the environmental variables that influence temporal and spatial variations in carbonate production we can better predict future carbon balance scenarios for these interconnected systems.