

**Soil and Water Sciences Department
Graduate Student Exit Seminar****Speaker:** Paul Julian
Ph.D. Degree Candidate**Advisor:** Alan Wright, Ph.D.**Title:** Evaluating Nutrient Biogeochemical
Processes in a Subtropical Treatment
Wetland**Date:** Monday, February 26th**Time:** 3:00 pm – 4:00 pm**Location:** McCarty Hall A, Room G186

Wetlands are essential biogeochemical hotspots with fundamentally important landscape scale functions and processes which regulate the flow of nutrients and energy across the landscape. Treatment wetlands leverage these ecosystem services to remove excessive and harmful nutrients from surface waters which can impact downstream nutrient-sensitive (oligotrophic) wetland ecosystems. Therefore, understanding nutrient biogeochemistry within treatment wetlands is essential to ensure effective and efficient operation of the system to maximize the potential of these ecosystem services. Nutrient processes including changes in stoichiometry between ecosystem compartments (i.e., surface water, soil flocculent material, recently accreted soil and live above-ground biomass), vegetation nutrient stoichiometric homeostasis, and uptake and transport of total phosphorus (TP) were evaluated along two treatment cells of the Everglades Stormwater Treatment Area (STAs) located in south Florida (USA). As expected, TP concentrations significantly declined within each cell for all ecosystem compartments, whereas trends in total N and C inconsistent. Nutrient stoichiometry is highly variable within and between ecosystem compartments of the two treatment cells. Moreover, the observed variability in stoichiometric relationships points to the decoupling of organic matter decomposition and potential nutrient mineralization rates. Vegetation within the STAs provides a large nutrient sink with relatively constant uptake pressure as indicated by the vegetations stoichiometric homeostasis. Vegetation, along with other hydrologic factors, influenced nutrient uptake and dynamics thereby regulating ambient nutrient conditions within a given treatment cell.

For our off-campus students, off-campus faculty, and on-campus students who cannot attend, this seminar can be viewed via live or watched at a later date via this link: [Paul Julian](#). In addition, all seminars are archived for viewing on our [SWSD Seminar Page](#).