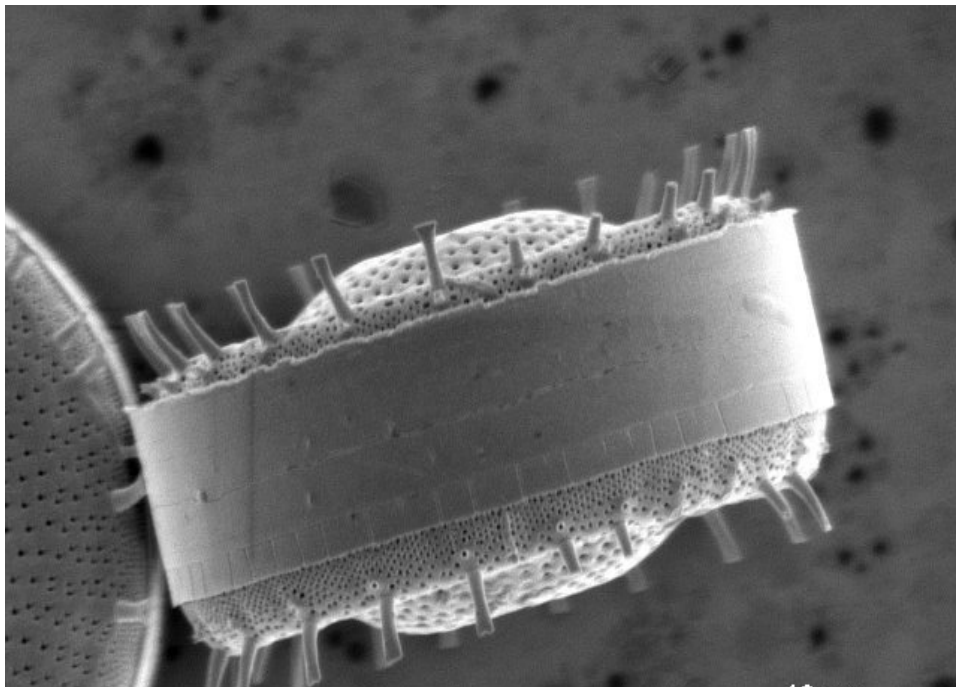


EARTH SCIENCES DEPARTMENT SEMINAR

**Diatom – Based Quantitative Reconstructions of
Salinity Fluctuations in Florida Bay (Florida, USA) in
the last 3000 yrs**

(Abstract)

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**Friday, November 19th, PC – 432
3:30 PM**

ABSTRACT

Florida Bay is a shallow embayment of the Gulf of Mexico, fed by estuaries draining the southern Everglades and separated from the Atlantic Ocean by the Florida Keys. The bay ecosystem is affected by changes in water quality and quantity in the adjacent marine and freshwater environment, resulting in fluctuations in the abundance and composition of marine organisms including algae, seagrass and sponges.

Diatom records have been used to determine the history of salinity fluctuations in Florida Bay, which, though inherently variable in this system may be increasing in the modern environment due to changes in water delivery. Modern distribution of diatoms in the Everglades and Florida Bay have been used to establish their utility as indicators of past salinity alterations. Inference models were developed to determine salinity changes from four chronologically calibrated (^{14}C and ^{210}Pb) sediment cores from Florida Bay. Basal sediments in most cores contain a freshwater flora of the common Everglades taxa (eg. *Fragilaria synegrotesca*, *Encyonema evergladianum*, *Nitzschia semirobusta*). Overlying sediments are dominated by marine taxa including *Paralia sulcata* var. *genuine* f. *radiate* and *Grammatophora oceanica*, which indicate increasing salinity in Florida Bay. In general, diatoms indicate recent increases in salinity on a decadal scale, superimposed on a longer history of sea-level rise on a millennial scale.