

## Water Institute Munch Bunch Seminar:

### **Net flow structure at tidal inlets and possible implications for transport of dissolved and suspended matter**

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**Observed net (tidally averaged) flow structures at four Florida tidal inlets are described in terms of their similarities and differences.**

**Flow structures at 3 of the 4 (St. Augustine, Ponce de Leon, and Jupiter) inlets consist of waters moving in the same direction, into or out of the inlet, throughout the water column. However, such net flow pattern exhibits opposing directions over shallow parts relative to deep parts. These flow patterns follow theoretical expectations in terms of their dependence on lateral variations in bathymetry. The net flow patterns are modulated in time by a combination of tides and winds. At the fourth (St. Andrew Bay) inlet, river discharge drives a net outflow near the surface and a net inflow near the bottom, in contrast to the other inlets, where net flows were unidirectional with depth. The depth-dependent pattern in St Andrew Bay, however, is greatly masked by wind-driven fluctuations. The flow patterns at all of the inlets indicate that the fate of suspended and dissolved matter will be affected by a complex interplay among tides, winds, freshwater discharges and the geometry of the inlet. Understanding of this interplay will not only allow effective management of natural resources in the connecting water bodies, it will also permit the design of efficient dredging operations.**

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[http://www.waterinstitute.ufl.edu/research/downloads/Valle-Levinson-Sediment\\_12-8-2008.pdf](http://www.waterinstitute.ufl.edu/research/downloads/Valle-Levinson-Sediment_12-8-2008.pdf)

**Thursday, April 16, 2009**

**Frazier-Rogers Hall 122**

**11:30 to 12:30 → seminar and 20 minute discussion**



**pizza provided**