

## David C. Fugate

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### Education

Ph.D., 2002, School of Marine Science, Virginia Institute of Marine Science, College of William and Mary, Physical Sciences, Dissertation: *Estuarine Suspended Aggregate Dynamics and Characteristics*

M.S., 1996, School of Marine Science, Virginia Institute of Marine Science, College of William and Mary, Biological Sciences, Thesis: *Enquiry into the Fractal Nature of Tidal Creeks*

B.S., 1983, School of Public Health, University of North Carolina at Chapel Hill, NC, Biostatistics

### Professional Experience

*Assistant Professor, Dept of Environmental and Marine Science, Florida Gulf Coast University, 1/06-present*

*Post-Doctoral Research Associate, Institute of Marine and Coastal Science, Rutgers U., 8/03-12/05.* Study of estuarine hydrodynamics and near bed shear stresses. Modelling of juvenile bivalve transport. Study of sediment transport in small well stratified estuary. Study of aggregation processes.

*Post-Doctoral Research Associate, Virginia Institute of Marine Science, 4/02-8/03.* Study of particle aggregation dynamics in estuarine systems. Hydrodynamic numerical modeling of shallow lagoonal system. Measurement of water column turbulence.

*Research Assistant, Virginia Institute of Marine Science, 8/96 –4/02.* Research into sediment transport, particle aggregate dynamics, water column turbulence, geochronology, nearshore fluvial transport.

*Wetland Remediator, Virginia Institute of Marine Science, 1/96 –8/96.* Aided in design, construction and monitoring of remediation of a DOT impacted wetland site.

*Research Assistant, Virginia Institute of Marine Science, 8/92 –12/95.*  
Research into salt marsh nutrient dynamics, geomorphology, remote sensing of chlorophyll, GIS analysis of SAV's. Development of database system for saltwater fish monitoring in VA.

*Programmer Analyst, Carolina Population Center, Chapel Hill, North Carolina. 2/85 - 7/92.* Senior programmer for the Cebu Infant Mortality study, a longitudinal study of pregnancy and infant health. Supervised and trained programmers and research assistants.

*Social Science Analyst, Center for Population and Policy Studies, Research Triangle Institute, Research Triangle Park, North Carolina. 2/84 -1/85.* Provided technical assistance for longitudinal population trends analyses.

*Programmer, Population Laboratories, Department of Biostatistics, University of North Carolina, Chapel Hill, North Carolina. 5/83 - 1/84.* Managed and analyzed large data base for the East Java Population Survey.

*Assistant Statistician, Lipids Research Program, Department of Biostatistics, University of North Carolina, Chapel Hill, North Carolina. 5/81 - 5/83.* Performed exploratory analysis and report preparation on dietary predictors of serum HDL and triglyceride levels.

### **Mentoring and Training**

Currently teaching Marine Systems, Scientific Processes at Florida Gulf Coast University

Mentoring one graduate student and one undergraduate student at Florida Gulf Coast University

Summer 2000, 2001, Co-mentored undergraduate students

1987-1992, Provided formal training courses in Job Control Language and IBM operating systems.

1985-1982, Provided computational user's service and statistical consulting within the population research field.

### **Grants Awarded**

2005, \$40,000 New Jersey Sea Grant, "Estimation of the fall velocity of suspended sediment in the Passaic R., NJ"

2003, Fellowship awarded for post doctoral study at the Institute of Marine and Coastal Sciences, Rutgers University

### **Professional Affiliations**

American Geophysical Union.  
Estuarine Research Federation.

### **Peer Reviewed Publications**

**Fugate, D.C.**, and C.T. Friedrichs, in press, Lateral dynamics and associated transport of sediment in the upper reaches of a partially mixed estuary, Chesapeake Bay, USA, *Continental Shelf Research*.

**Fugate, D.C.**, R.J. Chant, 2006, Aggregate settling velocity of combined sewage overflow. *Marine Pollution Bulletin* 52, pp 427-432

**Fugate, D.C.**, C.T. Friedrichs, A. Bilgili, 2006, Estimation of Residence Time in a Shallow Back Barrier Lagoon, Hog Island Bay, Virginia, USA., in, Estuarine and Coastal Modeling, Proceedings of the Ninth International Conference, October 31-November 2, 2005, Charleston, SC, ed. Spaulding, ML, American Society of Civil Engineers.

**Fugate, D.C.**, and R.J. Chant, 2005, Near bottom stresses in a small highly stratified estuary, *Journal of Geophysical Research* 110, C03022, doi:10.1029/2004JC002563.

**Fugate, D.C.**, and C.T. Friedrichs, 2003, Controls on Suspended Aggregate Size in Partially Mixed Estuaries, *Estuarine Coastal and Shelf Science*, 58, pp 389-404.

**Fugate, D.C.**, and C.T. Friedrichs, 2002. Determining concentration and fall velocity of estuarine particle populations using ADV, OBS, and LISST. *Continental Shelf Research* 22, pp. 1867-1886.

Lawson, S.E., P.L. Wiberg, K.J. McGlathery and **D. Fugate**, in press, Wind-driven sediment suspension controls light availability in a shallow coastal lagoon, *Estuaries and Coasts*.

Sanford, L.P., P.J. Dickhudt, L. Rubaiano-Gomez, M. Yates, S.E. Suttles, C.T. Friedrichs, **D.C. Fugate** and H. Romine, 2005. Variability of suspended particle concentrations, sizes and settling velocities in the

Chesapeake Bay turbidity maximum. In: I.G. Droppo, G.G. Leppard, P. Liss, and T. Milligan (eds.) *Flocculation in Natural and Engineered Environmental Systems*. CRC Press, Boca Raton, FL.

Kuehl, S.A., Brunskill, G.J., Burns, K., **Fugate, D.C.**, and Kniskern, T., 2004. Nature of sediment dispersal off the Sepik River, Papua New Guinea: Preliminary sediment budget and implications for margin processes. *Continental Shelf Research* 24. pp 2417-2429.

Gonzalez, L.M., **Fugate, D.C.**, El uso de equipos opticos para la medicion de sedimento suspendido, submitted to *Tecnociencia*.

Hunt, H.L., and Maltais, M.J., **Fugate, D.C.**, and Chant, R.J., in revision, Spatial and temporal variability in juvenile bivalve dispersal: effects of sediment transport and flow regime, submitted to *Environmental and Marine Biology*, submitted to *Marine Ecology Progress Series*.

### **Selected Abstracts and Proceedings**

**Fugate, D.C.**, C.T. Friedrichs, and L.P. Sanford, 2003. Atypical bottom shear stress asymmetry in a partially stratified estuary. Mid-Atlantic Bight Physical Oceanography and Meteorology Meeting, University of Massachusetts, Dartmouth, MA, 16-17 October.

**Fugate, D.C.**, C.T. Friedrichs, L.C. Schaffner, and G.M. Battisto, 2000. Tidally varying suspended particle populations in lower Chesapeake Bay. *Proceedings, Physics of Estuaries and Coastal Seas, 10th International Biennial Conference*, Sponsored by Old Dominion University and the College of William and Mary, Norfolk, VA, USA, 7-11 October 2000, p. 217-220.

**Fugate, D.C.**, C. Friedrichs, I. Anderson, A. Bilgili, and B. Zelenke, 2002, Determining residence time in Hog Island Bay using a 2-D finite element model allowing for dewatering of intertidal flats. *Eos, Transactions, American Geophysical Union*, 83 (Supl.).

**Fugate, D.** and C. Friedrichs, 2001, Determining characteristics and dynamics of multiple particle subpopulations in estuaries using optical and acoustic instruments. *Estuarine Research Federation 16 th Biennial International Conference*, St. Pete Beach, 4-8 November 2001.

Conrad, C.F., Chisholm-Brause, C.J., Daus, J., **Fugate, D.C.**, Kuehl, S.A., 2000. Historical trends in trace metal contaminants of the Elizabeth River

Subestuary, Chesapeake Bay, Virginia, American Chemical Society, 220th National Meeting in Washington , 20-24, August 2000.

**Fugate, D.C.**, 1999. Comparison of sedimentary patterns in marsh systems of dredged and natural estuaries, American Society of Limnology and Oceanography, Aquatic Sciences Meeting, Santa Fe, NM, 1-5 February, 1999.

## **Consulting**

Lawler Matusky & Skelly Engineers. Storm water sewage solids reactivity and settling characteristics. 2004-2005.