

Curriculum Vitae
Steven D. Meyers

Chief Scientist
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Education

Florida State University, Tallahassee, FL	Oceanography	postdoc, 1991-1993
University of Texas at Austin, Austin, TX	Physics	Ph.D., 1990
University of Rochester, Rochester, NY	Physics	B.S., 1984
University of Rochester, Rochester, NY	Mathematics	B.A., 1984

Appointments

Chief Scientist, Center for Maritime and Port Studies, USF, 2016-present.
 Senior Scientist, Ocean Modeling and Prediction Laboratory, USF, 2001-2016 (30 hr/wk, 0.75 FTE).
 Visiting Assistant Professor, University of South Florida, 1998-2001.
 Co-Assoc. Director, Center Ocean-Atmosphere Prediction Studies, Florida State University. 1994-1998.
 Research Associate, Center Ocean-Atmosphere Prediction Studies, Florida State University. 1993-1994.
 ONR Educator Postdoctoral Fellowship, Mesoscale Air-Sea Interaction Group, Florida State University. 1991-1993.

Current Research Topics and Achievements

- Modeling the impact of sea level rise on vessel navigation in coastal regions
- Machine learning applied to sewer overflows and sea level rise in Pinellas County
- Big data to examine vessel activity in Tampa Bay, their wake generation, and shoreline impacts
- First demonstration and explanation of hysteresis of subtidal estuarine circulation
- Pioneered the introduction of wavelet techniques in the meteorological and oceanographic communities
- Developed the new version of the Tampa Bay Nowcast-Forecast Model
 (suspended due to lack of funding)
- First laboratory measurement of potential vorticity and demonstrated relation to mixing

Synergistic Activities

- Working with the Tampa Bay Estuary Program to assess shoreline erosion from ship wakes.
- Working with the Florida Fish and Wildlife Conservation Commission to examine transport of marine debris within Tampa Bay and into the Gulf of Mexico.
- Worked with international team modeling the impact of barrier island loss on tides and storm surge in Tampa Bay.
- Worked with scientists from NOAA and Florida Fish and Wildlife to model retention of oyster larvae in Pensacola Bay.
- Member of Climate Science Advisory Panel, Tampa Bay.
- Supervised numerous postdoctoral researchers, graduate and undergraduate students.

Professional Organizations and Associations

American Geophysical Union
Florida Climate Institute
Coastal and Estuarine Research Federation
American Meteorological Society, West Central Florida
Tampa Bay Climate Science Advisory Panel

Recent Peer-Reviewed Publications

- 2020: Meyers, S.D, S.M Landry, M. Beck, M.E. Luther, Using Logistic Regression to Model the Risk of Sewer Overflows Triggered by Compound Flooding with Application to Sea Level Rise, Urban Climate, submitted.
- 2020: Meyers, S.D, L. Azadevo, M.E. Luther, A Scopus-based Bibliometric Study on the Use of Maritime Automatic Identification System Data in Artificial Intelligence and Related Research, Maritime Policy and Management, submitted.
- 2020: Meyers, S.D, M.E. Luther, S. Ringuet, G. Raulerson, E. Sherwood, K. Conrad and G. Basili, Ship Wakes in Tampa Bay, Ocean and Coastal Management, submitted.
- 2020: Meyers, S.D, M.E. Luther, S. Ringuet, G. Raulerson, E. Sherwood, K. Conrad and G. Basili, Characterizing Vessel Traffic using the AIS: a Case Study in Florida's Largest Estuary, Journal of Waterway, Port, Coastal, and Ocean Engineering, 10.1061/(ASCE)WW.1943-5460.0000592, to appear.
- 2020: Meyers, S.D. and M.E. Luther, Simulating the Impact of Sea Level Rise on Maritime Navigation within a Large, Channelized Estuary, Maritime Policy & Management, doi.org/10.1080/03088839.2020.1723810.
- 2017: Meyers, S. D., A. Linville, and M. E. Luther, Changes in Residence Time Due to Large-Scale Infrastructure in a Coastal Plain Estuary. Journal of Coastal Research, 33(4), 815-828.
- 2017: Arnold, B., S. D. Meyers, M. E. Luther, S. Geiger, D. Narvaez, E. Hoffman, and M. E. Luther, Salinity and Larval Dispersal in Pensacola Bay and Its Implications for Restoration of Oyster Reefs, Journal of Shellfish Research, 36(1), 101-118.
- 2016: Ulm, M., Arns, A., Wahl, T., Meyers, S.D., Luther, M.E. and J. Jensen, The Impact of Barrier Island Loss on Extreme Events in Tampa Bay. Frontiers in Environmental Science, doi: 10.3389/fmars.2016.00056.
- 2015: Wahl, T., S. Jain, J. Bender, S.D. Meyers and M.E. Luther, Increased Risk of Compound Flooding from Storm Surge and Rainfall for Major US Cities, Nature Climate Change, doi:10.1038/nclimate2736.
- 2015: Meyers, S.D., Wilson, M., Luther, M.E., 2015. Observations of hysteresis in the annual exchange circulation of a large microtidal estuary. Journal of Geophysical Research, Oceans 120, 2904-2919.

Recent Non-Reviewed Publications

- 2019: Meyers, S.D, M.E. Luther, S. Ringuet, G. Raulerson, E. Sherwood, K. Conrad and G. Basili, Meyers, S.D. and M.E. Luther. 2019. Ship Wakes in Tampa Bay. Tampa Bay Estuary Program, St. Petersburg, FL. TBEP Technical Report #06-19. 68 pp.
- 2019: Meyers, S.D and M.E. Luther, Potential Changes in Salinity Associated with Port Tampa Bay New Berth Construction in East Bay, Port Tampa Bay, 22 pp.
- 2018: Meyers, S.D, M.E. Luther, S. Ringuet, G. Raulerson, E. Sherwood, K. Conrad and G. Basili, Wakes from Large Vessels and the Risk to the Shoreline Environment in Tampa Bay, Proceedings OCEANS 2018, Charleston, SC.
- 2018: Luther, M.E., S.D. Meyers, and J. Sudder. Real Time Observations of Oceanographic and Meteorological Parameters for Maritime Transportation: Origins and Novel Applications, Proceedings OCEANS 2018, Charleston, SC.

- 2016: Meyers, S.D., M.E. Luther, M. Ulm, A. Arns, T. Wahl, and J. Jensen, How Losing Egmont Key Will Impact Tides and Storm Surge in Tampa Bay, Proceedings of the Bay Area Scientific Information Symposium, 221-225.
- 2016: Meyers, S.D., M.E. Luther and A.M. Moss, Changes in Residence Time Due to Large-Scale Infrastructure in a Coastal Plain Estuary, Proceedings of the Bay Area Scientific Information Symposium, 10-18.

Earlier Peer-Reviewed Publications:

- 2014: Burghart, S., L. D. VanWounden, C., S. D. Meyers, R. P. Kitzmiller, E., and M. Breitbart, DNA Barcoding of Individual Fish Eggs to Assess Spawning Aggregations. *Marine Ecology Progress Series*, 503: 195-204
- 2014: Meyers, S. D. and M. E. Luther, Real-Time Oceanographic Data : From Safety to Science. *Eos, Transactions American Geophysical Union*, 95: 305-306
- 2014: Wilson, M., S. D. Meyers, and M. E. Luther, Synoptic Volumetric Variations and Flushing of the Tampa Bay Estuary. *Climate Dynamics*, 29: 914-918.
- 2013: Meyers, S. D., A. Linville, and M. E. Luther, Alteration of Residual Circulation Due to Large-Scale Infrastructure in a Coastal Plain Estuary. *Estuaries and Coasts*: 1-15.10.1007/s12237-013-9691-3
- 2010: Havens, H., M. E. Luther, S. D. Meyers, and C. A. Heil, Lagrangian Particle Tracking of a Toxic Dinoflagellate Bloom within the Tampa Bay Estuary. *Marine Pollution Bulletin*, 60: 2233-2241
- 2009: Havens, H., M. E. Luther, and S. D. Meyers, A Coastal Prediction System as an Event Response Tool: Particle Tracking Simulation of an Anhydrous Ammonia Spill in Tampa Bay. *Marine Pollution Bulletin*, 58: 1202-1209
- 2008: Meyers, S. D. and M. E. Luther, A Numerical Simulation of Residual Circulation in Tampa Bay. Part II: Lagrangian Residence Time. *Estuaries and Coasts*, 31: 815-827.10.1007/s12237-008-9085-0
- 2007: Meyers, S. D., M. E. Luther, M. Wilson, H. E. Holm, A. Linville, and K. Sopkin, A Numerical Simulation of Residual Circulation in Tampa Bay. Part I: Low-Frequency Temporal Variations. *Estuaries and Coasts*, 30: 679-697
- 2006: Shi, J. Z., M. E. Luther, and S. Meyers, Modelling of Wind Wave-Induced Bottom Processes During the Slack Water Periods in Tampa Bay, Florida. *International Journal for Numerical Methods in Fluids*, 52: 1277-1292
- 2006: Wilson, M., S. D. Meyers, and M. E. Luther, Changes in the Circulation of Tampa Bay Due to Hurricane Frances as Recorded by Adcp Measurements and Reproduced with a Numerical Ocean Model. *Estuaries and Coasts*, 29: 914-918
- 2005: Luther, M. E. and S. D. Meyers, Hydrodynamic Simulations of Circulation and Dependent Physical Parameters in the Palm River and McKay Bay, 253 pp.
- 2005: Meyers, S. D., Luther, M.E., Circulation Modeling in the Vicinity of the H.L. Culbreath Bayside Power Station, Hillsborough Bay, Florida.
- 2001: Meyers, S. D., E. M. Siegel, and R. H. Weisberg, Observations of Currents on the West Florida Shelf Break. *Geophysical Research Letters*, 28: 2037-2040
- 2001: Zamudio, L., A. P. Leonardi, S. D. Meyers, and J. J. O'Brien, Enso and Eddies on the Southwest Coast of Mexico. *Geophysical Research Letters*, 28: 13-16.10.1029/2000gl011814
- 2000: Basu, S., S. D. Meyers, and J. J. O'Brien, Annual and Interannual Sea Level Variations in the Indian Ocean from Topex/Poseidon Observations and Ocean Model Simulations. *Journal of Geophysical Research: Oceans*, 105: 975-994.10.1029/1999jc900231
- 1999: Melsom, A., S. D. Meyers, J. J. O'Brien, H. E. Hurlburt, and J. E. Metzger, Enso Effects on Gulf of Alaska Eddies. *Earth Interactions*, 3: 1-30
- 1999: Meyers, S. D. and S. Basu, Eddies in the Eastern Gulf of Alaska from Topex/Poseidon Altimetry. *Journal of Geophysical Research: Oceans*, 104: 13333-13343

- 1999: Meyers, S. D., J. J. O'Brien, and E. Thelin, Reconstruction of Monthly Sst in the Tropical Pacific Ocean During 1868–1993: Using Adaptive Climate Basis Functions. *Monthly Weather Review*, 127: 1599-1612
- 1999: Mizoguchi, K.-i., S. D. Meyers, S. Basu, and J. J. O'Brien, Multi- and Quasi-Decadal Variations of Sea Surface Temperature in the North Atlantic. *Journal of Physical Oceanography*, 29: 3133-3144
- 1999: Spiesberger, J. L., H. E. Hurlburt, M. Johnson, M. Keller, S. Meyers, and J. J. O'Brien, Acoustic Thermometry Data Compared with Ocean Models: The Importance of Enso in Modifying the Ocean Interior. *J. Acoust. Soc. Amer.*, 106: 2120-2120
- 1998: Meyers, S. D., A. Melsom, G. T. Mitchum, and J. J. O'Brien, Detection of the Fast Kelvin Wave Teleconnection Due to El Niño-Southern Oscillation. *Journal of Geophysical Research: Oceans*, 103: 27655-27663
- 1998: Spiesberger, J. L., H. E. Hurlburt, M. Johnson, M. Keller, S. Meyers, and J. O'Brien, Acoustic Thermometry Data Compared with Two Ocean Models: The Importance of Rossby Waves and Enso in Modifying the Ocean Interior. *Dynamics of Atmospheres and Oceans*, 26: 209-240
- 1996: Meyers, S. D., M. A. Johnson, J. L. Spiesberger, M. Liu, and J. J. O'Brien, Interdecadal Variability in a Numerical Model of the Northeast Pacific Ocean: 1970-89. *J. Phys. Oceanogr.*, 26: 2635-2652
- 1995: Kelly, B. G., S. D. Meyers, and J. J. O'Brien, On a Generating Mechanism for Yanai Waves and the 25-Day Oscillation. *Journal of Geophysical Research: Oceans*, 100: 10589-10612
- 1995: Meyers, S. D. and J. J. O'Brien, Pacific Ocean Influences Atmospheric Carbon Dioxide. *Eos, Transactions American Geophysical Union*, 76: 533-533
- 1994: Meyers, S. D., Cross-Frontal Mixing in a Meandering Jet. *Journal of Physical Oceanography*, 24: 1641-1646
- 1994: Meyers, S. D., J. F. Magnan, and J. J. O'Brien, Fractal Trajectories in a Numerical Model of the Upper Indian Ocean. *Nonlin. Proc. Geophy.*, 1: 45-50
- 1994: Meyers, S. D., C. S. Jones, D. M. Legler, K. F. Miles, and J. J. O'Brien, The Sensitivity to Parametric Variation in Direct Minimization Techniques. *Monthly Weather Review*, 122: 1632-1639
- 1993: Meyers, S. D., B. G. Kelly, and J. J. O'Brien, An Introduction to Wavelet Analysis in Oceanography and Meteorology: With Application to the Dispersion of Yanai Waves. *Monthly Weather Review*, 121: 2858-2866
- 1991: Behringer, R. P., S. D. Meyers, and H. L. Swinney, Chaos and Mixing in a Geostrophic Flow. *Physics of Fluids*, 3: 1243-1249
- 1989: Meyers, S. D., J. Sommeria, and H. L. Swinney, Laboratory Study of the Dynamics of Jovian-Type Vortices. *Physica D: Nonlinear Phenomena*, 37: 515-530
- 1989: Sommeria, J., S. D. Meyers, and H. L. Swinney, Laboratory Model of a Planetary Eastward Jet. *Nature*, 337: 58-61
- 1988: Sommeria, J., S. D. Meyers, and H. L. Swinney, Laboratory Simulation of Jupiter's Great Red Spot. *Nature*, 331: 689-693