

## VITAE

Lynn Ann Leonard  
Department of Earth and Ocean Sciences  
University of North Carolina at Wilmington  
601 S College Road  
Wilmington, NC 28403

### **Education:**

College of William and Mary, Williamsburg, VA

August 1982 - May 1986

B.S. (with high honors) in Geology, 1986.

Senior research topic: Stratigraphy and development of the Goodwin Islands, Virginia.

Duke University, Durham, NC

August 1986 - August 1988

M.S. in Geology, 1988

Area of research: Beach replenishment on U.S. Atlantic Coast barrier islands.

University of South Florida, St. Petersburg, FL

August 1988 - 1994

Ph.D. in Marine Science (5/4/94)

Area of research: Sediment dynamics and surficial hydrodynamics in an open marine marsh.

### **Professional Experience:**

July 2017 – present: Professor with Tenure, University of North Carolina Wilmington,  
Department of Earth and Ocean Sciences

July 2008 - 2017: Chair, Department of Geography and Geology/Earth and Ocean Sciences, UNCW

January 2012 – 2016: Chair, Department of Geography and Geology, and Chair Department of Physics and  
Physical Oceanography, UNCW

August 2005-present: Director, Coastal Ocean Research and Monitoring Program, UNCW

August 2004-present: Professor with Tenure, University of North Carolina Wilmington, Department of  
Geography and Geology.

August 2004-July 2005: Assistant Chair, Department of Geography and Geology

August 1999-2004: Associate Professor with Tenure, University of North Carolina Wilmington, Department of  
Earth Science.

August 1999-2004: Graduate Coordinator, M.S. Geology Program, University of North Carolina Wilmington,  
Department of Earth Science.

August 1994-1999: Assistant Professor, University of North Carolina Wilmington, Department of Earth  
Science.

January 1994-August 1994: Post-doctoral Research Associate, University of South Florida, Department of  
Marine Science.

August 1988-January 1994: Graduate Research Assistant, University of South Florida, Department of Marine Science.

May 1987 - August 1988: Research Assistant, Duke University, Department of Geology.

August 1986 - December 1987: Teaching Assistant, Duke University Department of Geology

May 1986 - July 1988: Physical Science Technician GS/5, Office of Minerals Management, Department of the Interior, Vienna, VA.

December 1985 - January 1986: Physical Science Technician GS/5, Office of Minerals Management, Department of the Interior, Vienna, VA.

### **Research Grants (>\$10M):**

- 2019. RAPID: The Response and Recovery of Adjacent Natural and Built Coastlines Impacted by Hurricane Florence. PIs: Joe Long (lead), Eman Ghoneim (Co-PI), Andrea Hawkes (Co-PI), **Lynn Leonard (Co-PI)** and Devon Eulie (Co-PI). National Science Foundation (\$48,543)
- 2019. Hurricane IRMA Observational Supplemental. **PI-Leonard** NOAA/SECOORA. (\$13,856)
- 2018. Wallops Island Wave Buoy. **PI: Leonard** Granting Agency: LJT & Associates, Wallops Flight Facility (\$5362)
- 2018. Optimization & Enhancement of SECOORA Observing Elements to Support Products & Applications – Year 3 **PI-Leonard**. Granting Agency: NOAA/SECOORA (\$372,300)
- 2017. Optimization & Enhancement of SECOORA Observing Elements to Support Products & Applications – Year 2 (**PI-Leonard**) NOAA/SECOORA (\$375K)
- 2016. Optimization & Enhancement of SECOORA Observing Elements to Support Products & Applications – Year 1 (**PI-Leonard**), NOAA/SECOORA (\$380K)
- 2015. Ocean Observing Efforts in the Carolinas (**PI-Leonard**) NOAA/SECOORA (\$385K)
- 2014. Ocean Observing Efforts in the Carolinas (**PI-Leonard**) NOAA/SECOORA (\$385K)
- 2013. Ocean Observing Efforts in the Carolinas (**PI-Leonard**) NOAA/SECOORA (\$385K)
- 2012. Ocean Observing Efforts in the Carolinas (**PI-Leonard**) NOAA/SECOORA (\$367K)
- 2011. Impacts of Increased Tidal Range and Salinity in the Cape Fear River Ecosystem” (**PI-Leonard**, Co-PIs: Posey, Alphin) Dial Cordy and Associates (\$144,734)
- 2011. Maintenance of RCOOS assets, Data Management Activities, and Education and Outreach (**PI-Leonard**) SECOORA (\$386,749)
- 2010. Analysis of the Geomorphologic Evolution of Masonboro Island, NC (**PI-Leonard**), NC SeaGrant (\$4000)
- 2010. Observing and Data Management in Support of SECOORA (**PI-Leonard**, Co-PI: Dorton) SC SeaGrant (\$200K)
- 2010. Implementation of Regional Integrated Ocean Observing Systems Support of RCOOS (**PI-Leonard**, Co-PI: Dorton) SC SeaGrant (\$20,015)
- 2009. Year 3 Carolinas Regional Coastal Observing System (**PI – Leonard**) NOAA CSC (\$1.4M)
- 2009. Key Parameters for Assessing Beach Functionality (PI-Cahoon; **Co-PIs: Leonard**, Posey, Alphin Lankford) NC SeaGrant (\$59,514)
- 2008. Wilmington Harbor Coastal Harbor Monitoring Program (**PI-Leonard**) Evans-Hamilton, Inc. (\$5000)
- 2008. Key Parameters for Assessing Beach Functionality (PI-Cahoon; **Co-PIs: Leonard**, Posey, Alphin Lankford) NC SeaGrant (\$14,357)
- 2008. Key Parameters for Assessing Beach Functionality (PI-Cahoon; **Co-PIs: Leonard**, Posey, Alphin Lankford) NC SeaGrant (\$23,395)
- 2008. Service, Maintain, and Calibrate Remote Data Collection Platforms in Swamps and Channels of Cape

- Fear River Basin (**PI-Leonard**) Elizabeth City State University/USACE (\$57,678)
2008. Implementation of RCOOS support of RCOOS development for SECOORA: Data Management (**PI-Leonard**, Co-PI: Dorton) SC SeaGrant (\$13,514)
2008. Year 2 Carolinas Regional Coastal Observing System (**PI – Leonard**, Co-PIs: J. Dorton) NOAA CSC (\$1.4M)
2007. Development of the North Carolina Estuarine Observing Network (**PIs: L. Leonard** and S. Culver, Co-PIs: R. Leuttich, H. Seim, R. Eggleston) UNC-GA (\$275,000 – 2 years).
2007. Year 1 Carolinas Regional Coastal Observing System (**PI – Leonard**, Co-PIs: Dorton, Williams, Merritt) NOAA CSC (\$1.4M)
2007. Field Test of the AIS ASWSS Buoy System (**PI-Leonard**) General Dynamics (\$29,354)
2007. Sediment Analysis of Coastal Sediments (**PI-Leonard**) CZR, Inc. (\$1610)
2006. Year 5: Coastal Ocean Research and Monitoring Program (**PI-Leonard**) NOAA CSC (\$413,000)
2006. Field Test of the AIS ASWSS Buoy System. (**PI-Leonard**) General Dynamics (\$17,000)
2005. Documenting the Importance of Water Flow to Everglades Landscape Structure and Sediment Transport in Everglades National Park (**PI-Leonard**) NPS-Everglades National Park (\$81,000)
2005. Coastal Ocean Research and Monitoring Program (**PI-Leonard**, Co-PIs: Bingham, Cooper, Cahoon, Durako, Lankford, Moss, Mallin and Posey) NOAA Coastal Services Center (\$2,160,000)
2004. Coastal Climatology Products for Recreation and Tourism End-Users in Southeastern NC (**PI-Gamble, Co-PI: Leonard**) NOAA-CSC (\$74,890)
2004. Coastal Ocean Research and Monitoring Program (**PI-Moss; Co-PIs: Leonard**, Bingham, Cooper, Cahoon, Durako, Lankford, Mallin and Posey) NOAA CSC (\$2,340,000)
2003. Flow Dynamics and Particle Dispersion in the Florida Everglades (**PI- Leonard**) Florida International University (\$70,000)
2003. A Collaborative Coastal Ocean Research and Monitoring Program (**PI-Moss; Co-PIs: Leonard**, Bingham, Cooper, Cahoon, Durako, Lankford, Mallin and Posey) NOAA (\$1,192,200)
2003. Monitoring of the Cape Fear River Widening and Wilmington Harbor Dredging Project (**PI- Hackney, Co-PIs: Leonard**, Posey, Avery) USACE (\$365,000)
2003. Marsh Fragmentation and Extent Versus Barrier Island Topography: An Investigation Using Aerial Photography, Digital Terrain Modeling and GIS (**Co-PIs: L. Leonard** and J. Halls) NC Sea Grant (\$5000)
2003. From Source to Sea: An Analysis of Fluvial Sediment Delivery to the Cape Fear River Estuary (**PI-Benedetti, Co-PIs: Leonard**, Smith) UNCW Center for Marine Science (\$18,885)
2002. Year 2: Monitoring the effects of the Cape Fear Harbor dredging project on water levels in the Cape Fear River 2001-2002 (**PI- Hackney, Co-PIs: Leonard**, Posey, Avery) USACE (\$235,062)
2002. Effects of potential increased tidal range in the Cape Fear River ecosystem due to deepening Wilmington Harbor, NC (**PI- Hackney, Co-PIs: Leonard**, Posey, Avery; Three separate awards in the amounts of: \$10,044, \$25,884, and \$43,188).
2002. The Influence of Flow Dynamics and Particle Dispersion on the Everglades Landscape (**PI-Leonard**). FIU (\$70,000)
2001. Monitoring Sedimentation and Currents on a Muddy Shoreface: The Impact of Dredge and Fill Projects on the Oak Island Nearshore Zone (**PI- Cleary, Co-PIs: Leonard**, Posey and Alphin) UNCW Center for Marine Science (\$45,000)
2001. Coastal Ocean Research Monitoring Program: Onslow Bay (**PI- Moss, Co-PIs: Leonard**, Bingham, Posey, Lankford, Mallin, Durako) NOAA/OAR (\$950,000)
2000. Monitoring of the Cape Fear River Widening and Wilmington Harbor Dredging Project (**PI- Hackney, Co-PIs: Leonard**, Posey, Avery) USACE (\$350,000)
2000. Transplanted Oyster (*Crassostrea virginica*) Beds as Self-Sustaining Mechanisms for Water Quality Improvement in Small Tidal Creeks: A Pilot Study. (**PI- Leonard**, Co-PIs: Posey, Mallin, and Alphin) UNCW Center for Marine Science Research (\$25,000)
2000. Identifying Optimal Propagation Conditions for Greenhouse-Grown *Spartina alterniflora* Seedlings (**PI-Padgett, Co-PIs: Leonard** and Durako) UNCW Center for Marine Science (\$25,350).

1999. Sediment Recycling: Marsh Renourishment Through Dredged Material Disposal (**PI-Leonard**, Co-PIs: Laws, Alphin, Posey, Cahoon) NOAA/CICEET (\$126,883)
1999. Monitoring the potential effects of increased tidal range on the Cape Fear River ecosystem due to deepening and widening Wilmington Harbor, NC (**PI-Leonard**) Coastal Zone Resources and the USACE (\$67,560)
1999. Coastal Ocean Monitoring of Onslow Bay (PI-Cahoon, **Co-PIs: Leonard**, Bingham, Emslie, Mallin, Skrabal, and Spivack) NOAA (\$730,000)
1999. Hydrodynamics and Particle Dispersion in *Phragmites australis* and *Spartina alterniflora* Marshes: Prospect Bay, MD (**PI-Leonard**) Marsh Ecology Research Program (\$21,045)
1999. Biogeochemical Fingerprinting of Phosphorus Sources in Anthropogenically Impacted Estuarine Watersheds (**Co-PIs: L. Leonard**, S. Kinsey, M. Mallin) UNCW Center for Marine Science Research (\$35,763)
1998. Hydrodynamics of Flows Through Vegetated Marsh Canopies: Chesapeake and Delaware Bay Tidal Marsh Systems (**PI-Leonard**) Marsh Ecology Research Program. (\$17,000)
1998. Hydrodynamics of Surficial Tidal Flows, Pamlico Sound, NC (**PI-Leonard**). UNCW Center for Marine Science Research (\$4278)
1997. Hurricane Impacts in the Back-Barrier Marshes of Masonboro Island, NC (**PI-Leonard**) UNCW Center for Marine Science Research (\$4066)
1996. Sediment Transport on Tidal Flats: Columbia River Estuary. National Science Foundation, Land Margin Ecosystem Research program (PI- S. Simenstead, \$5000 for travel and equipment to consult on this project)
1996. Sediment Transport Processes in Intertidal Environments: the Columbia River Estuary (**PI-Leonard**). UNCW Center for Marine Science Research (\$3855)
1996. Back Barrier Responses to Hurricane Induced Sedimentation (**PI-Leonard**) Charles L. Cahill Award for Faculty Research and Development, University of North Carolina at Wilmington (\$1690)
1995. Sediment Transport and Depositional Processes in Local Marsh Systems, Wilmington NC (**PI-Leonard**) UNCW Center for Marine Science Research (\$3777)
1995. Flow Dynamics and Sediment Transport in Vegetated Coastal Systems (**PI-Leonard**) College of Arts and Sciences Summer Initiative award, University of North Carolina at Wilmington (\$3000)
1995. Sediment Deposition in North Carolina Tidal Marshes Using Lead-210 Dating (**PI-Leonard**) Charles L. Cahill Award for Faculty Research and Development, University of North Carolina at Wilmington (\$2500)
1992. Sediment Transport in Marsh Canopies (**PI-Leonard**) Louisiana Universities Marine Consortium Foundation (\$2000)

#### **Professional Affiliations:**

Coastal and Estuarine Research Federation  
 American Fisheries Society  
 Sigma Xi  
 SECOORA

#### **Publications:** (student co-authors denoted by \*)

##### Published (peer-reviewed):

1. Snowden, J., Hernandez, D., Quintrell, J., Harper, A., Morrison, R., Morell, J., and **Leonard, L.** 2019. "The U.S. Integrated Ocean Observing System: Governance Successes and Lessons from Two Decades of Growth", *Front. Mar. Sci.* DOI: 10.3389/fmars.2019.00242.
2. Ghoneim, E. Dorofeeva, A.\*, Benedetti, M., Gamble, D., **Leonard, L.**, and AbuBakr, M. 2017. Vegetation Drought Analysis in Tunisia: A Geospatial Investigation. *J Atmos Earth Sci* 1: 002.

3. Porter, D., Dorton, J., **Leonard, L.**, Kelsey, H., Ramage, D., Cothran, J., Jones, A., Glavarino, C., Subramanian, V., and D. Hernandez. 2015. Integrating Environmental Monitoring and Observing Systems in Support of Science to Inform Decision Making: Case Studies for the Southeast. Coastal Ocean Observing Systems: Advances and Syntheses. Elsevier. p. 418-428. DOI: 10.1016/B978-0-12-802022-7.00022-5
4. Ensign, S., Siporin, K., Piehler, M., Doyle, M., and **L. Leonard** 2012. Hydrologic versus biogeochemical controls of denitrification in tidal freshwater wetlands. *Estuaries and Coasts*, s12237-012-9491-1.
5. Larsen, L.G., N. Aumen, C. Bernhardt, V. Engel, T. Givnish, S. Hagerthey, J. Harvey, **L. Leonard**, P. McCormick, C. McVoy, G. Noe, M. Nungesser, K. Rutchey, F. Sklar, T. Troxler, J. Volin, and D. Willard. 2011. Recent and historic drivers of landscape change in the Everglades ridge, slough, and tree island mosaic. *Critical Reviews in Environmental Science & Technology*, 1547-6537, Volume 41, Issue S1, 2011, pp. 344 – 381.
6. Thomas, J., Boicourt, W., Kerkering, H., **Leonard L.**, Ostrander, C., and I. Watts, 2010. IOOS® Contributions to the Decision-Making Process for Mariners and Coastal Managers. *Marine Technology Society Journal*, 44(6):146-155.
7. Deng, Y.\*, Solo-Gabriele, H, Laas, M.\*, **Leonard, L.**, Childers, D., He, G., and Engel, V. 2010. Impacts of hurricanes on patterns of surface water flow within a wetland. *Journal of Hydrology*. 392: 164-173.
8. He, G., Engel, V., **Leonard, L.**, Croft, A., Childers, D., Laas, M., Deng, Y.\*, and Solo-Gabriele, H. 2010. Factors Controlling Surface Water Flow in a Low-gradient Subtropical Wetland. *Wetlands*. 30:275–286.
9. **Leonard, L.**, Dorton, J., Culver, S., and Christian, R. 2009. “Coastal and Estuarine Observing in North Carolina: Integrating Observations & Science to Understand Our Coastal Environment”. ECU Press. 30p.
10. Fletcher, M., **Leonard, L.**, Dorton, J., Hanson, J. 2009. Carolinas Regional Coastal Ocean Observing System (Carolinas RCOOS): a model for integration of sub-regional observing systems. In: Oceans 2009 Proceedings.
11. Reed, D.J., D.A. Bishara, D.R. Cahoon, J. Donnelly, M. Kearney, A.S. Kolker, **L. Leonard**, R.A. Orson, and J.C. Stevenson. 2008. Site-Specific Scenarios for Wetlands Accretion as Sea Level Rises in the Mid-Atlantic Region. Section 2.1 in: Background Documents Supporting Climate Change Science Program Synthesis and Assessment Product 4.1, J.G. Titus and E.M. Strange (eds.). EPA 430R07004. U.S. EPA, Washington, DC.
12. Seim, H., **L. Leonard**, D. Savidge, M. Fletcher and C. Edwards, 2008. Observing system depiction of circulation in the SE US coastal ocean, US/EU Baltic Symposium, Tallin, Estonia, May, 2008, IEEE Papers and Proceedings.
13. Davis, L.A.\*, **Leonard, L.A.**, and Snedden, G.A. 2008. Hydrography and bottom boundary layer dynamics: Influence on inner shelf sediment mobility, Long Bay, NC. *Southeastern Geology* 45(3): 97-110.
14. Wren, P.A., Marshall, J.A., **Leonard, L.A.**, and Van der Linde, M.\* 2008. The effects of hardbottom geometry on sediment transport processes on the mid-continental shelf in Onslow Bay, North Carolina. *Southeastern Geology* 45(3):111-126
15. Hackney, C.T., Avery, G.B. **Leonard, L.A.**, Posey M., and Alphin T. 2007. Biological, chemical, and physical characteristics of tidal freshwater swamp forests of the lower Cape Fear River/Estuary , North

Carolina. In: Conner, W.H., T.W. Doyle, and K.W. Krauss, eds. Ecology of Tidal Freshwater Forested Wetlands in the Southeastern United States. , Springer, Dordrecht, The Netherlands.

16. DeVoe, M.R., E. Buckley, J. Dorton, M. Fletcher, **L. Leonard**, P. Lumpkin, C. Mooers, L. Pietrafesa, D. Porter, H. Seim, S. Sheldon, R. Weisberg and L. Xie. 2007. Regional coastal IOOS development in the South Atlantic Bight. *Marine Technology Society Journal*. 40(4):110-117
17. Croft, A. L.\*, **L. A. Leonard**, T.D. Alphin, L.B. Cahoon, and M.H. Posey. 2006. The effects of thin layer sand renourishment on tidal marsh processes: Masonboro Island, North Carolina. *Estuaries and Coasts* 22(5): 737-750.
18. **Leonard, L.A.** and Croft, A.L. \*, 2006. The effect of standing biomass on flow velocity and turbulence in *Spartina alterniflora* canopies. *Estuarine, Coastal, and Shelf Science* 69: 325-336.
19. **Leonard, L.**, Croft, A., Childers, D., Mitchell-Bruker, S., Solo-Gabriele, H. and Ross, M., 2006. Characteristics of surface-water flows in the ridge and slough landscape of Everglades National Park; implications for particulate transport. *Hydrobiologia* 569: 5-22.
20. Bazante, J.\*, Solo-Gabriele, H., Jacobi, G., Reed, D., Mitchell-Bruker, S., Childers D., **Leonard, L.**, and Ross, M. 2006. Hydrologic Measurements and Implications for Tree Island Formation Within Everglades National Park. *Journal of Hydrology* 329, 606– 619.
21. M. Fletcher, D. Porter, **L. Leonard**, M. Moss, M. Durako, J. Dorton, L.J. Pietrafesa, E. Buckley, L. Xie. 2006. Adaptive integration of sub-regional coastal ocean observing systems: a case study of the coastal ocean research and monitoring program (CORMP) and the Carolinas Coastal Ocean Observing and Prediction System (Caro-COOPS). Proceedings of “Oceans 2006 MTS/IEEE”, Boston, MA, September 18-21, 2006
22. Benedetti, M.M., Raber, M.J.\*, Smith, M.S., and **Leonard, L.A.**, 2006. Mineralogical indicators of alluvial sediment sources in the Cape Fear River basin, North Carolina. *Physical Geography* 27 (3): 258-281.
23. Wren, P.A.\* and **Leonard, L.A.**, 2005. Sediment transport on the mid-continental shelf in Onslow Bay, North Carolina during Hurricane Isabel. *Estuarine, Coastal, and Shelf Science* 63: 43-56.
24. Nelson, Kimberly\*, **Lynn A. Leonard**, Martin H. Posey, Troy D. Alphin and Michael A. Mallin 2004. Using Transplanted Oyster (*Crassostrea virginica*) Beds to Improve Water Quality in Small Tidal Creeks: A Pilot Study. *Journal of Experimental Marine Biology and Ecology*. 298: 347-368.
25. Cressman, K.\*, Posey, M.H., Mallin M.A., **Leonard, L.A.** and Alphin T.D. 2003. Effects of Oyster Reefs on Water Quality in a Tidal Creek Estuary. *Journal of Shellfish Research*, 22(3): 753-762.
26. Bazante, J.\*, H. M. Solo-Gabriele, M. S. Ross, D. L. Childers, S. Mitchell-Bruker, and **L. Leonard**, 2003. Water Velocity and Suspended Solids Concentrations in the Proximity of Tree Islands in Everglades National Park. *Proceedings of the Joint Conference on the Science and Restoration of the Greater Everglades and Florida Bay Ecosystem, “From Kissimmee to the Keys”*, South Florida Ecosystem Restoration Task Force. pp. 19-20.
27. **Leonard, Lynn A.** 2003. Particulate Loading in a Tidal Creek Watershed: A Five Year Study Bradley Creek, North Carolina. In: Davis, R.A., P. Howd, and A. Sallenger (eds.) Coastal Sediments '03 “Crossing Disciplinary Boundaries: Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, Clearwater, Florida, CD-media.

28. O'Reilly, J.M.\*, Renfro, A.A.\*, Croft A., and **Leonard, L.A.** 2003. Effect of sediment availability on fecal coliform bacteria transport and retention in coastal wetlands. *In: Davis, R.A., P. Howd, and A. Sallenger (eds.) Coastal Sediments '03 "Crossing Disciplinary Boundaries: Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, Clearwater, Florida, CD-media.*
29. Renfro, A.A.\*, O'Reilly, J.M.\*, Croft, A., and **Leonard, L.A.** 2003. Sediment transport and deposition in riparian and tidal wetlands of the lower Cape Fear River. *In: Davis, R.A., P. Howd, and A. Sallenger (eds.) Coastal Sediments '03 "Crossing Disciplinary Boundaries: Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes, Clearwater, Florida, CD-media.*
30. **Leonard, Lynn A.** and Reed, Denise J. 2002. Hydrodynamics and Sediment Transport Through Tidal Marsh Canopies. *Journal of Coastal Research* SI36:459-469.
31. **Leonard, Lynn A.**, Beavers, Rebecca L., and P. Ansley Wren\* 2002. Flow Dynamics and Sedimentation in *Spartina alterniflora* and *Phragmites australis* Marshes of the Chesapeake Bay. *Wetlands* 22(2): 425-424.
32. Reed, Denise J., Thomas Spencer, Anne Murray\*, Jonathan R. French, and **Lynn Leonard**, 1999. Marsh surface sediment deposition and the role of tidal creeks: implications for created and managed coastal marshes. *Journal of Coastal Conservation*, 5: 81-90.
33. **Leonard, Lynn A.** 1997. Controls of sediment transport and deposition in an incised mainland marsh basin, southeastern North Carolina. *Wetlands* 17(2): 263-274.
34. **Leonard, Lynn A.** 1996. Sediment deposition within vegetated tidal marsh canopies: the influence of hydrology, suspended sediments and storms. *In: Pandalai, SG. (ed.) Recent Advances in Coastal Research, Research Signpost, p. 71-85.*
35. **Leonard, Lynn A.** 1996. Sedimentology and depositional processes in the tidal marshes of southeastern North Carolina. *In: W.J. Cleary (ed.) Environmental Coastal Geology: Cape Lookout to Cape Fear, NC. Carolina Geological Society, Wilmington, North Carolina, p. 61-69.*
36. **Leonard, Lynn A.** and Luther, Mark E., 1995. Flow hydrodynamics in tidal marsh canopies. *Limnology and Oceanography*, 40(8): 1474-1484.
37. **Leonard, Lynn A.**, Hine, Albert C., Luther, Mark E., Stumpf, Richard P., and Wright, Eric E., 1995. Sediment transport processes in a west-central Florida open marine marsh tidal creek; the role of tides and extra-tropical storms. *Estuarine, Coastal, Shelf Science*, 41: 225-248.
38. **Leonard, Lynn A.**, Hine, Albert C., and Luther, Mark E., 1995. Surficial sediment transport and deposition processes in a *Juncus roemerianus* marsh, west-central Florida. *Journal of Coastal Research*, 11 (2): 322-336.
39. **Leonard, Lynn A.**, Pilkey, Orrin H., and Clayton, Tonya D., 1990. An analysis of replenished beach design parameters on the U. S. East Coast. *Journal of Coastal Research*, 6 (1): 15-36.
40. **Leonard, Lynn A.**, Dixon, Katharine, and Pilkey, Orrin H., 1990. A comparison of beach replenishment of the U. S. Atlantic, Pacific and Gulf coasts. *In: Maurice Schwartz (ed.) International Beach Replenishment. Journal of Coastal Research Special Volume no. 6, pp. 127-140.*

41. **Leonard, Lynn A.**, Pilkey, Orrin H., Clayton, Tonya D., and Dixon, Katharine, 1989. U. S. beach replenishment experience: A comparison of the Atlantic, Pacific and Gulf coasts. *In*: O. Magoon *et al.* (eds.), Coastal Zone '89, American Society of Civil Engineers, New York, pp. 1994-2006.
42. **Leonard, Lynn A.**, Pilkey, Orrin H., and Clayton, Tonya D., 1988. An assessment of parameters critical to beach replenishment. *In*: L. S. Tait (ed.), Florida Shore and Beach Proceedings: Tallahassee, Florida Shore and Beach Preservation Association Inc., pp. 115-124.

Reply papers:

43. Pilkey, O. H. and Leonard, L. A., 1990. Per Brunn Discussion (in reply to discussion of Leonard *et al.*, 1990). *Journal of Coastal Research*, 6 (4), 1022.
44. Pilkey, O. H. and Leonard, L. A., 1990. Discussion of the Houston paper (in reply to discussion of Leonard *et al.*, 1990). *Journal of Coastal Research*, 6 (4) p. 1023-1030.

Peer-Reviewed White Papers:

45. Virmani, J., Dorton, J., Jochens, A., **Leonard, L.**, Morrison J. Ru, O'Donell, J., Quintrell, J., and Weisberg, R. 2012. Fixed Platforms in an Integrated and Interdisciplinary Ocean Observing System. *In*: IOOS- Integrated Ocean Observing System SUMMIT 2012. A New Decade for an Integrated and Sustained Ocean Observing System. Community White Papers, 5 p.
46. **Leonard, L.**, Dorton, J., Porter, D. and Virmani J. 2012. Identifying Stakeholder Driven User Needs: Lessons learned in the Southeast. 2012. Fixed Platforms in an Integrated and Interdisciplinary Ocean Observing System. *In*: IOOS- Integrated Ocean Observing System SUMMIT 2012. A New Decade for an Integrated and Sustained Ocean Observing System. Community White Papers, 5 p.

Publications for Public Audiences:

Leonard, L., Dorton, J., Culver S., and Christian R. 2009. Coastal and Estuarine Observing in North Carolina: Integrating Observations & Science to Understand Our Coastal Environment. 62 p.

Meeting Proceedings:

Bushnell, M., Thomas, J., Burger, E., Heitsenrether, R., Galvarino, C., Dorton J., and **Leonard L.** 2018. Status and Near-Term Plans for the U.S. IOOS Quality Assurance/Quality Control of Real-time Oceanography Data (QARTOD) Project. *Oceans 18, MTS-IEEE. Technical Paper Proceedings.*

**Leonard, Lynn A.** 2003. Particulate Loading in a Tidal Creek Watershed: A Five-Year Study Bradley Creek, North Carolina. *In*: Davis, R.A., P. Howd, and A. Sallenger (eds.) Coastal Sediments '03 "Crossing Disciplinary Boundaries: Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes: Abstracts, Clearwater, Florida.

O'Reilly, J.M., Renfro, A.A., Croft A., and **Leonard, L.A.** 2003. Effect of sediment availability on fecal coliform bacteria transport and retention in coastal wetlands. *In*: Davis, R.A., P. Howd, and A. Sallenger (eds.) Coastal Sediments '03 "Crossing Disciplinary Boundaries: Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes: Abstracts, Clearwater, Florida.



**Renfro, A.A.**, O'Reilly, J.M., Croft, A., and Leonard, L.A. 2003. Sediment transport and deposition in riparian and tidal wetlands of the lower Cape Fear River. *In*: Davis, R.A., P. Howd, and A. Sallenger (eds.) Coastal Sediments '03 "Crossing Disciplinary Boundaries: Fifth International Symposium on Coastal Engineering and Science of Coastal Sediment Processes: Abstracts, Clearwater, Florida

Technical Reports

Monitoring Effects of a Potential Increased Tidal Range in the Cape Fear River Ecosystem Due to Deepening Wilmington Harbor, North Carolina Year 10: June 1, 2009 – May 30, 2010. Posey, M., R. Ingle, **L. A.**

**Leonard**, T. Alphin, G. B. Avery, and Hackney C.T. W912HN-05-D-0014, U.S. Army Corps of Engineers, Wilmington District, NC. 304p.

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Civelli, R.\* and **L. Leonard** 2001. Effects of Culvert Geometry on Estuarine Sediment Dispersal. 16<sup>th</sup> Biennial Conference of the Estuarine Research Federation, Abstracts, St. Pete Beach, FL. November 2001, p. 26.

Halls, J.N., **L.A. Leonard**, and S.T. Kinsey 2001. A Spatial Sensitivity Analysis of Land Cover/Land Use and Sediment Phosphorus Compounds in Small Tidal Creek Watersheds. 16<sup>th</sup> Biennial Conference of the Estuarine Research Federation, Abstracts, St. Pete Beach, FL. November 2001, p. 55.

Nelson, K. \*, **L. Leonard**, M. Posey, T. Alphin, M. Mallin, and D. Parsons 2001. Oyster (*Crassostrea virginica*) Reefs as a Bioremediation Tool in Small Tidal Creeks. 2001. 16<sup>th</sup> Biennial Conference of the Estuarine Research Federation, Abstracts, St. Pete Beach, FL. November 2001, p. 26.

Hackney, C.T., A.R. Clark, M.H. Posey, **L.A. Leonard**, G.G. Avery, and T.D. Alphin 2001. Impacts of an Artificial Increase in Sea Level on Wetlands in the Cape Fear River Basin: Baseline Monitoring. 16<sup>th</sup> Biennial Conference of the Estuarine Research Federation, Abstracts, St. Pete Beach, FL. November 2001, p. 54.

Croft, A.\* and **L. Leonard** 2001. The Effects of Thin Layer Disposal of Dredged Material on Tidal Marsh Processes. 16<sup>th</sup> Biennial Conference of the Estuarine Research Federation, Abstracts, St. Pete Beach, FL. November 2001, p. 30.

Wren P.A\*., and **L.A. Leonard** 2001. Hydrodynamics and Particle Dispersion in Phragmites australis and Spartina alterniflora Marshes. *Eos Trans. AGU*, Spring Meet. Suppl., Abstract B52C-04.

**Leonard, L.A.**, Grindlay, N.R., Beavers, R.L., and Wren, P.A\*. 2001. Sediment Mobility Study on the Mid-Continental shelf: The Role of Storms in Onslow Bay, NC American Geophysical Union Chapman Conference, June 2001.

Wren, A.\* **Leonard, L.A.**, and Beavers, R.L. 2001. Sediment Mobility During Storms on the Mid-Continental Shelf: Onslow Bay, NC, GSA Abstracts with Programs Vol. 33, No. 2., March 2001

Croft, A\*. and **Leonard, L.A.** 2001. Effects of Dredged Material Disposal on Tidal Marsh Processes. GSA Abstracts with Programs Vol. 33, No. 2, p. 71 March 2001.

Miller, S.L.\*, **Leonard, L.A.**, Kinsey, S.T., and Halls, J. 2001. Phosphorus as a Biogeochemical indicator of Anthropogenic Effects in Estuarine Watersheds. GSA Abstracts with Programs Vol. 33, No. 2, March 2001.

Nelson, K.\*, **Leonard, L.A.**, Posey, M.H., and Alphin, T. 2001. Transplanted Oyster (*Crassostrea virginica*) Beds as Self-Sustaining Mechanisms for Water Quality Improvement in Small Tidal Creeks. GSA Abstracts with Programs Vol. 33, No. 2, March 2001.

Roberts, T.L\*, Crowe, J.\*, and **Leonard, L.A.** 2001. Suspended Particulate Matter Transport in the Lower Cape Fear River System. GSA Abstracts with Programs Vol. 33, No. 2, p. 68. March 2001.

Beavers, R. L., F. M. Bingham, **L. A. Leonard**, N. R. Grindlay, and P. A. Wren\* 2000. Sediment Transport Measurements from the Coastal Ocean Monitoring Program in Onslow Bay, North Carolina. *In: Society of Engineering Science, Symposium on "Sediment Transport on Continental Shelves, Slopes, and Beyond", Abstracts.*

Laws, R.A., Harris, W.B., **Leonard, L.A.**, Shafter, K.S.D. and Smith, M.S. 2000. Summer Ventures in Science and Math: An Intensive Summer Curriculum for Secondary School Students. 31<sup>st</sup> International Geological Congress Abstracts, Rio DeJaneiro, Brazil.

**Leonard, L.A.** 2000. Tidal marsh restoration; recent efforts to improve design and function. Geological Society of America, Southeastern Section, 49th annual meeting, Abstracts with Programs, 32; 2, p. 58.

Wren, Ansley\*, **Leonard, Lynn A.**, and Beavers, R. 2000. Tidal hydrodynamics in marsh canopies: Examples from marshes of the US East Coast. *In: Benthic Ecology 29th Annual Meeting, Abstracts, p. 146.*

Wren, Ansley\* and **Leonard, Lynn** 2000. A field study of fine scale hydrodynamics in marsh canopies and implications of the impacts on particle deposition and distribution in coastal marshes. *In: The Geological Society of America Southeastern Section 49th Annual Meeting, Abstracts with Programs, p. 84.*

**Leonard, Lynn A.**, Laws Richard A., Cahoon, Lawrence, Posey, Martin; Alphin, Troy; Reese, Heather\*, and Gina Panasik\* 2000. Sediment Recycling: Marsh renourishment through dredged material disposal. *In: Benthic Ecology 29th Annual Meeting, Abstracts, p. 86.*

**Leonard, L.A.** 1999. Flow characteristics, sediment transport, and deposition in tidal marshes of the US Atlantic coast. *In: Estuarine Research Federation '99 Conference Abstracts, New Orleans, LA p. 61.*

Kinsey, S.T., J. Vollenweider\*, P.V. Sundareshward, R. Civelli\*, and **L.A. Leonard** 1999. Phosphorus compound distribution in estuarine sediments of southeastern North Carolina. *In: Estuarine Research Federation '99 Conference Abstracts, New Orleans, LA p. 55.*

Laws, R.A., J. Hilterman\*, **L. Leonard**, and L. Cahoon 1999. Composition and biomass of microalgae from back-barrier marshes, Masonboro Island, NC: Impact of storm-induced overwash. *In: Estuarine Research Federation '99 Conference Abstracts, New Orleans, LA p. 60.*

Green, J.K\*, H.A. Runion\*, and **L.A. Leonard**. 1998. Water Quality and Sediment Loading in Tidal Creeks: Wilmington, NC. *In: Geological Society of America, Abstracts with Programs, Charleston, WVA, v. 30 n. 4 p. 15.*

Hilterman, J.\*, R. Laws, and **L. Leonard**. 1998. The effects of Hurricane Fran on diatom assemblages from a back barrier marsh, southeastern North Carolina. *In: Crossing Disciplines/Crossing Boundaries: Research in the South Atlantic Bight, SECOR Program & Abstracts, Savannah, GA, p. 17.*

**Leonard, L.A.**, and R.A. Laws. 1998. Sediment loading in small tidal creek systems. *In: Crossing Disciplines/Crossing Boundaries: Research in the South Atlantic Bight, SECOR Program & Abstracts, Savannah, GA, p. 25.*

Moundalexis, A.E\*, R.A. Laws, and **L.A. Leonard** 1998. Aerial photographic survey of Hurricane induced alterations to Masonboro Island, NC. *In: Crossing Disciplines/Crossing Boundaries: Research in the South Atlantic Bight, SECOR Program & Abstracts, Savannah, GA, p. 32.*

- Hilterman, J.\* , **L.A. Leonard**, and R.A. Laws. 1997. Effects of Hurricane Fran on diatom assemblages from a southeastern North Carolina back barrier marsh. *In: Estuarine Research Federation Meeting, Abstracts*, Providence, RI, p. 80.
- Moundalexis, A.E.\* , **L.A. Leonard**, and W.J. Cleary. 1997. The effects of Hurricanes Bertha and Fran on the back-barrier environments of Masonboro Island, NC. *In: Estuarine Research Federation Meeting, Abstracts*, Providence, RI, p. 128.
- Leonard, L.A.** 1997. Vegetation's role in controlling sediment transport and deposition in tidal marsh systems. *In: Geological Society of America, Abstracts with Programs*, King of Prussia, PA, v. 29 p. 60.
- Moundalexis, A.E.\* , **L.A. Leonard**, and W.J. Cleary. 1997. Overwash sedimentation in the backbarrier environment of Masonboro island, NC. *In: Geological Society of America, Abstracts with Programs*, King of Prussia, PA, v. 29 p. 68.
- Leonard, L.A.**, K.S. Metz\*, and A.E. Moundalexis\*. 1997. Sediment transport and deposition processes in back barrier marshes of southeastern North Carolina. *In: Estuarine Research Federation Meeting, Abstracts*, Providence, RI, p. 106.
- Angelidaki, K.J.\* and **L. Leonard**. 1996. Sediment transport processes in a North Carolina tidal creek system. *In: Geological Society of America, Abstracts with Programs*, Jackson, MS, v. 28 n. 2 p. 2.
- Metz, K.S.\* and **L. Leonard**. 1996. Inlet migration and sedimentation on back barrier tidal marshes. *In: Geological Society of America, Abstracts with Programs*, Jackson, MS, v. 28 n. 2 p. 38.
- Leonard, L.A.** 1996. In situ measurements of tidal flows through marsh vegetation. *In American Geophysical Union 1996 Spring Meeting Abstracts*, Baltimore, MD, p. 78.
- Angelidaki, K.\* and **L.A. Leonard**. 1996. Sediment and nutrient transport over individual tidal cycles in a tidal creek in North Carolina. *In: Geological Society of America, Abstracts with Programs*, Denver, CO, v. 28 p. A-95.
- Leonard, L.A.** 1995. Sediment deposition in a North Carolina back barrier marsh system: patterns, processes and storms. *In: Geological Society of America, Abstracts with Programs*, Knoxville, TN, v. 27 p. 69.
- Leonard, L.A.** 1995. Sediment transport and deposition in a North Carolina micro-estuarine marsh. *In: Estuarine Research Federation 13th International Conference Abstracts*, Corpus Christi, TX, p. 76-77.
- Leonard, L. A.** 1995. The role of canopy architecture in over-marsh flow dynamics. *In: Society for Sedimentary Geology, Congress on Sedimentary Geology, Program and Abstracts Volume 1*, St. Pete Beach, FL, p. 83.
- Quigley, W.C.\* , A.C. Hine, **L.A. Leonard**, and E.E. Wright. 1995. Sedimentation rates determined on variable temporal and spatial scales in an open-marine, marsh-dominated, microtidal coastline. *In: Society for Sedimentary Geology, Congress on Sedimentary Geology, Program and Abstracts Volume 1*, St. Pete Beach, FL, p. 102.
- Wood, N.J.\* , **L.A. Leonard**, and A.C. Hine. 1995. Suspended sediment linkage from coastal embayments to marsh surfaces: implications of tidal creek efficiency and marsh deposition. *In: Society of Wetland Scientists Annual Meeting, Abstracts with Programs*, Boston, MS, p. 118.

Wood, N.\*, A.C. Hine, and **L. Leonard**. 1995. Sediment linkage from coastal embayment transport to marsh surface deposition: Waccasassa Bay, Florida. *In: Society for Sedimentary Geology, Congress on Sedimentary Geology, Program and Abstracts Volume 1, St. Pete Beach, FL, p. 102.*

**Leonard, L.A.**, M.E. Luther, and A.C. Hine. 1994. Hydrologic factors affecting sediment transport and deposition on marsh surfaces. *In: Wetlands, Local Functions, Global Dependence, Society of Wetland Scientists Annual Meeting, Portland, OR, p. 104.*

Quigley, W.C., A.C. Hine, **L.A. Leonard**, E.E. Wright, and S.L. Goodbred. 1994. Variations in sedimentation rates of an open-marine, marsh dominated coastline. *In: Geological Society of America, Abstracts with Programs, Seattle, WA, v. 26 p. 305.*

Wright, E.E., A.C. Hine, **L.A. Leonard**, and S.L. Goodbred. 1994. Holocene stratigraphic evolution of a riverine siliciclastic coastline overlaying an Eocene karst limestone platform: Suwannee River marsh system, west-central Florida. *In: Geological Society of America, Abstracts with Programs, Seattle, WA, v. 26 p. 305.*

Hine, A.C., **L.A. Leonard**, E.E. Wright, S.L. Goodbred, W.C. Quigley, and R.P. Stumpf. 1993. Regional factors controlling the evolution of an open-marine marsh fronting an incipient epicontinental sea-NW Florida Gulf Coast. *In: The Science & Management of Coastal Estuarine Systems, Estuarine Research Federation Annual Meeting 1993 Proceedings, Hilton Head, SC.*

**Leonard, L.A.**, A.C. Hine, M.E. Luther, and R.P. Stumpf. 1993. Sediment transport processes in a west-central Florida open marine marsh tidal creek. *In: Geological Society of America, Abstracts with Programs, Tallahassee, FL. v. 25 p. 34.*

**Leonard, L.A.**, A.C. Hine, and M.E. Luther. 1993. Suspended sediment transport and deposition in a *Juncus roemerianus* marsh, west-central Florida. *In: Proceedings of the IGU-CCE Conference on Sediment Dynamics, Deposition and Erosion in Temperate Salt Marshes, Cocodrie, LA.*

**Leonard, L.A.**, M.E. Luther, A.C. Hine, and D.J. Reed. 1993. Free surface flow in marsh canopies. *In: ASLO/SWS '93 Abstracts with Programs, Edmonton, Canada, p. 66.*

**Leonard, L.A.**, E.E. Wright, W.C. Quigley, and A.C. Hine. 1993. Sediment transport and deposition in microtidal marsh systems. *In: Geological Society of America, Abstracts with Programs, Boston, MA, v. 25 p. A-115.*

**Leonard, L.A.**, M.E. Luther, A.C. Hine, D.J. Reed, and R.P. Stumpf, 1993. Processes controlling sediment deposition in two Gulf of Mexico marsh systems; west-central Florida and south-east Louisiana. *In: The Science & Management of Coastal Estuarine Systems, Estuarine Research Federation Annual Meeting 1993 Proceedings, Hilton Head, SC.*

Stumpf, R.P., A.C. Hine, *L.A. Leonard*, E.E. Wright, R. Hoenstine, and C. Garrett. 1993. Geomorphic characteristics of salt marshes of the Florida Big Bend region. *In: Proceedings of the IGU-CCE Conference on Sediment Dynamics, Deposition and Erosion in Temperate Salt Marshes, Cocodrie, LA.*

#### **Research Cruises and Field Operations:**

- 1990 Seismic stratigraphy of Tampa Bay, RV *Bellows*
- 1991 Seismic stratigraphy of the Florida Keys, RV *Suncoaster*
- 1991 Sediment fluxes in *Juncus roemerianus* marshes, Crystal River, FL., small boat work
- 1991 Seismic stratigraphy, side-scan sonar and vibracoring of the Suwannee River delta, RV *Bellows*
- 1992 Seismic stratigraphy and side-scan sonar survey of the Florida Keys, RV *Bellows*

- 1992 Surficial processes of marsh sedimentation, Terrebonne and Fourleague Bay, LA. RV *Acadiana* and small boat work
- 1993 Surficial processes of marsh sedimentation, Terrebonne and Fourleague Bay, LA. RV *Acadiana* and small boat work
- 1996 Sediment dynamics of tidal flats, Columbia River Estuary, OR. RV *Sproul* and small boat work
- 1998 Water quality of tidal inlet plumes, Wrightsville Beach, NC. RV *Cape Fear*
- 1999 Oceanographic research methods teaching cruise, Wrightsville Beach, NC RV *Cape Fear*
- 2000-03 Effects of dredged material disposal on tidal marshes, Masonboro Island, NC, small boat work
- 2001-03 Effects of storms on sediment transport in Onslow Bay, NC RV *SeaHawk*
- 2001-04 Monitoring the effects of dredging on water level in the Cape Fear River
- 2002-03 Sediment mobility on the mid-continental shelf, Onslow Bay, NC RV *SeaHawk*
- 2002-03 Influence of flow dynamics and particle dispersion on the Everglades landscape, airboat work
- 2003-04 Surficial sediment characteristics in Long Bay, NC—the role of the Cape Fear Plume RV *SeaHawk*; RV *Cape Fear*
- 2004 Sidescan sonar survey on sediment types near the mouth of the Cape Fear River, NC RV *Cape Fear*
- 2004-07 Flow dynamics and landscape evolution in Everglades National Park (multiple field campaigns)
- 2008-10 Coastal Ocean Monitoring, Onslow Bay NC RV *Cape Fear* (multiple cruises)
- 2015-19 Oceanographic Techniques Teaching Cruise, RV *Cape Fear* (2X per year)

**Honors and Awards:**

- U.S. Government merit award, Minerals Management Service, August 1985.
- High Honors in Geology, College of William and Mary, 1986.
- Graduate Research Fellowship, University of South Florida: 1988-89.
- Graduate Council Fellowship, University of South Florida: 1989-90.
- Gulf Coast Oceanographic Fellowship, Dept of Marine Science, Univ. of South Florida: 1989.
- Gulf Coast Oceanographic Fellowship, Dept of Marine Science, Univ. of South Florida: 1990.
- Gulf Coast Oceanographic Fellowship, Dept of Marine Science, Univ. of South Florida: 1991.
- ASLO/ONR Award: Best student Poster ASLO/SWS meeting, Edmonton, Canada: May 1993.
- College of Arts and Sciences Research Initiative Award, Wilmington, NC: April 1995.
- Sigma Xi: March 1997
- Most Outstanding Faculty Member, Department of Earth Sciences, UNCW: April 1999
- UNCW Million Dollar Club: April 1999
- Biggs Teaching Award Nominee, Geological Society of America: Nov. 1999
- UNCW Chancellor's Teaching Excellence Award: May 2000
- Faculty Co-Marshal, December Commencement: December 2000
- UNCW Five Million Dollar Club: April 2006
- Department of Commerce, National Weather Service, Public Service Award: April 2007
- UNCW Faculty Scholar Award 2012
- UNCW Ten Million Dollar Club: April 2012
- Faculty Banner Carrier, December Commencement 2017.
- PTA Volunteer of the Year, nominee 2018. Nominated for work with AHS Marine Science Academy.

**Invited Talks:**

- 1993. Processes controlling sediment deposition in two Gulf of Mexico marsh systems; west-central Florida and south-east Louisiana. Estuarine Research Federation Annual Meeting, Hilton Head, South Carolina.
- 1995. Physical Factors Controlling Sediment Transport in Tidal marshes. Department of Geology, East Carolina University, Greenville, North Carolina.
- 1995. Hydrodynamics and Sedimentation of Overmarsh Flows. Marine, Earth and Atmospheric Sciences Seminar, North Carolina State University, Raleigh, North Carolina.

1995. Sediment Transport and Deposition Processes on Marsh Surfaces. Duke University, School of the Environment Marine Laboratory, Beaufort, North Carolina.
1997. Sediment Transport and Deposition Processes in Vegetated Marsh Systems. The School of Natural and Applied Sciences, Coastal Carolina University, Conway, South Carolina.
1997. Sediment Transport Dynamics in Diverse Tidal Marsh Systems. Skidaway Institute of Oceanography, Savannah, GA.
1997. The Impact of Hurricane Fran on Southeastern North Carolina Beach and Marsh Systems. CAASS-Stressed Stream Analysis Workshop, SUNY-Brockport, New York.
1998. Particulate Transport Pathways in Tidal Marsh Systems. Horn Point Environmental Laboratory, University of Maryland, MD.
2000. Tidal marsh restoration; recent efforts to improve design and function. Geological Society of America, Southeastern Section, 49th annual meeting, Charleston, SC
2000. Hydrodynamics and Sediment Transport in Tidal Marshes. Geology at the University of South Carolina, Columbia, SC.
2001. Sediment Mobility Study on the Mid-Continental Shelf: The Role of Storms in Onslow Bay, NC. Margins Chapman Conference, Ponce, Puerto Rico.
2002. Hydrodynamics and Sediment Transport Through Tidal Marsh Canopies. Seventh International Coastal Symposium (ICS2002), Templepatrick, Northern Ireland, March 2002.
2002. Monitoring Flow Conditions in Wetland Environments. Florida International University, June 2002.
2003. Beneficial Use of Dredged Materials to Restore Degraded Salt Marshes. Restore America's Estuaries Inaugural Conference, Baltimore, Maryland.
2004. Hydrodynamics and Particulate Transport in Vegetated Marsh Canopies. AGU Chapman Conference, Salt Marsh Geomorphology: Physical and Ecological Effects on Landform, Abstracts. Halifax, Nova Scotia.
2005. The Coastal Ocean Research and Monitoring Program at UNCW. LCFRP Steering Committee, Mtg. Wilmington, NC
2005. CORMP and CaroCOOPs: Ocean Observing in the Carolinas. Brief to NOAA, Dept. of Commerce, Washington D.C.
2005. Common Interface Concepts for the Open IOOS II Demonstration project. National Federation of Regional Associations Meeting, OceansUS. Washington, D.C.
2006. Coastal Ocean Observing in Southeastern NC: A Briefing to the NC Congressional Delegation, Washington DC
2006. The Southeast Ocean Observing Partnership: A Briefing to the congressional delegations of NC, SC, GA, and FL, Washington DC June 2006
2006. The Southeast Ocean Observing Partnership: A Briefing to NOAA and the Dept. of Commerce, Washington DC
2006. Taking the Pulse of the Ocean. 2006-2007 Planet Ocean Seminar Series, UNCW Center for Marine Science.
2007. The Coastal Ocean Research and Monitoring Program at UNCW. Briefing to the UNCW Board of Trustees
2007. Application and Integration of Coastal Ocean Observing Technologies: Sub-regional Programs Making a Regional Difference. Coastal Zone 2007, Portland, Oregon.
2007. Coastal Ocean Observing Activities at UNCW. Presentation to Dr. Steve Leath, VP Research, UNC General Administration.
2007. Surface Flow and Particle Transport in the Everglade Ridge and Slough. South Florida Water Management District, Palm Beach, FL
2007. Supporting Coastal Managers Through the Integrated Ocean Observing System: Carolinas Coast, Rip Current and Coastal Waters Forecasting. Coastal Zone 07, Portland, OR, July 2007 speaker and panelist.
2007. The Everglades: Landscape and Restoration. UNCW Marine Odyssey Program.

- 2007. Application of Coastal Ocean Observing Technologies: Serving North Carolina's Needs for Weather and Water Information, Estuarine Research Federation Bi-Annual Meeting, Providence, RI.
- 2008. Information Management and Coastal Ocean Observing. Presentation to the Center for Marine Science Advisory Board.
- 2008. Ocean Observing Opportunities in North Carolina. Cape Fear Community College.
- 2009. Ocean Observing in the Carolinas. Briefing to the UNCW Board of Trustees
- 2009. Estuarine and Ocean Observing in North Carolina – applications to climate change studies. UNC-Marine Sciences Directors
- 2010. Ocean Observing Programs in the Southeastern U.S. – Briefings to congressional delegates from NC and FL. Washington, DC.
- 2011. *In situ* Observations (Coastal and Moored). Briefing to SECOORA and Board of Directors. SECOORA Annual Members Meeting. Savannah, GA.
- 2012. Designing a Regional Ocean Observing System: Status of the Southeast Build Out Plan. SECOORA Board of Directors Meeting, Miami FL.
- 2014. Ocean Observing in the Carolinas. Briefing to the North Carolina Congressional Delegation.
- 2018. The Coastal Ocean Research and Observing Program: New Partnerships. SECOORA Annual Meeting, May 2018.

### **Graduate Theses Supervised:**

Kalliopi Angelidaki: Sediment and Nutrient Transport in a Southeastern North Carolina Tidal Creek. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: May 1997.

Jacque Hilterman: The Effect of Hurricane Fran on Diatom Assemblages in a Southeastern North Carolina Back Barrier Marsh. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: December 1998.

Elizabeth Moundalexis: The Effect of Hurricanes Bertha and Fran on the Back-Barrier Marshes of Masonboro Island. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: December 1998.

Susan Avau: Substrate and Bacteria Affinities: The Fate of Fecal Coliforms in a Small Tidal Creek. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: May 2001.

Kimberly Nelson: Transplanted oyster (*Crassostrea virginica*) beds as self-sustaining mechanisms for water quality improvement in small tidal creeks. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: May 2002.

Shelly Miller: Biogeochemical Fingerprinting of Phosphorus Sources in Anthropogenically Impacted Watersheds. Master of Science in Marine Science, University of North Carolina at Wilmington. Graduated: May 2002.

Alexander Croft: Effects of Thin Layer Dredge Material Disposal on Tidal Marsh Processes, Masonboro Island, NC. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: May 2003.

Jennifer O'Reilly: Assessment of Tidally Influenced Riparian Wetlands as Sinks for Fecal Coliform Bacteria, Master of Science in Marine Science, University of North Carolina at Wilmington. Graduated: July 2003.

Alisha Renfro: Sediment Deposition and Accumulation in a Riparian Marsh and Swamp in a Brown and Black Water River System. Master of Science in Marine Science, University of North Carolina at Wilmington. Graduated: December 2004.

Richard Civelli: Sedimentation Patterns in Urbanized Marsh Systems. Master of Science in Geology, University of North Carolina at Wilmington.

Jeff Marshall: Sediment Dynamics on the Inner Continental Shelf of Southeastern NC: Onslow Bay. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: August 2004.

Maverick Raber. Characteristics of Sediment in Cape Fear River Watershed: Are There Differences Between Upper and Lower Watershed? Master of Science in Geology, University of North Carolina at Wilmington. Graduated: May 2004.

Beth Reimer. A Spatial Analysis of Changes in Back Barrier Marsh Acreage: Masonboro Island. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: December 2004.

Michael Slattery. Sediment dispersal from the Cape Fear River Plume in Long Bay. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: December 2006.

Lori Saal. Impact of Rainfall on Suspended Sediment Concentrations in an Urbanized Tidal Creek, Southeastern North Carolina. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: December 2005.

Luke Davis. Hydrography and Bottom Boundary Layer Dynamics: Influence on Inner Shelf Sediment Mobility, Long Bay, NC. Master of Science in Geology, University of North Carolina Wilmington. Graduated: May 2006.

Sara Althof. Hydrodynamic flow in a Tidal Marsh: a biophysical experiment. Master of Science in Marine Science, University of North Carolina Wilmington. Graduated: May 2007.

Devon Olivola. Sediment deposition and availability in the riparian wetlands of the Cape Fear River. Master of Science in Geology, University of North Carolina Wilmington. Graduated: May 2008.

Jesse Baldwin. Variability in Beach Topography and Forcing along Oak Island, North Carolina. Master of Science in Geology, University of North Carolina Wilmington. Graduated: December 2008.

Erin Scher. Sedimentary Processes in Back Barrier Tidal Marshes: Masonboro Island, NC. Master of Science in Geology, University of North Carolina Wilmington. Graduated: December 2012.

Kristen Hall. Morphologic Changes in Masonboro Island, NC: The Role of Tropical Storms and Anthropogenic Activity. Master of Science in Geology, University of North Carolina Wilmington. Graduated: May 2014.

Kerri Allen. Fine Scale Hydrodynamic Processes Associated with Oyster Reefs: A Flume and Field Study. Master of Science in Geology, University of North Carolina Wilmington. Graduated: August 2013.

Sean Leathem. Physical and Biological Effects of Reef Rugosity on Three-Dimensional Hydrodynamics and Sedimentation over Transplanted Oyster Reefs in a Shallow Tidal Creek System. Master of Science in Geology, University of North Carolina at Wilmington. Graduated: December 2016.

Stephen Fabian. Investigating the morphology and hydrodynamics of the former Cabbage Inlet, Masonboro Island, NC. Master of Science in Geoscience, University of North Carolina at Wilmington. Graduated: August 2017.



Aaron Knowlton. Effects of Causeway Construction on Vegetation and Sedimentation in North Carolina Tidal Marshes. Master of Science in Geoscience, University of North Carolina at Wilmington. Graduated: August 2018.

Frank Marshall. Impacts of Living Shoreline Design on Hydrodynamics, Sediment Properties, and Substrate Geochemistry. Master of Science in Geoscience, University of North Carolina at Wilmington. Expected Graduation: May 2020.

Yvonne Marsan. Sediment Depositional Processes in an Urbanized Tidal Creek System. Master of Science in Geoscience. University of North Carolina Wilmington. Expected Graduation: December 2019.

PhD student: (UNCW-NCSU-cooperative) Ansley Wren: Sediment mobility on the mid-continental shelf: Onslow Bay, NC. Graduated: May 2004

### **Other Synergistic Activities (Select Examples)**

#### *Ocean Observing:*

2004-05 COTS/ONR “Common Interface” working group: Interoperability Demonstration Project II  
2004-05 COTS/ONR Interoperability Demonstration Project II Steering Committee  
2005-06 SECOORA Business Planning Committee  
2004-06 Co-Director, Coastal Ocean Research and Monitoring Program, UNCW  
2004-05 SECOORA planning workshop participant (June 2004, Nov. 2004 and July 2005)  
2004 COTS/SECOORA/NDBC Buoy upgrade planning meeting (Sept. 2004)  
2004 SECOORA Summit, Development of user-focused web portal working group, Chair (Nov. 2004)  
2005 IOOS Planning Workshop, Washington DC May 2005.  
2005-06 SECOORA Business Plan Committee (DMAC, Data observations& Transmission WGs)  
2005-06 Caro-COOPS Science Advisory Committee  
2006-pres. UNCW SECOORA Representative  
2006 Chair, Search Committee, SECOORA Ocean Data Partnership Information Management Coord.  
2006 Public Workshop: Ocean Research Priorities Plan, Rapporteur, Denver, CO. Apr. 2006  
2006-07 Contributor, Ocean Research Priorities Plan Document for President Committee on Ocean Policy.  
2007-08 SECOORA Board of Directors and Board Liaison to Stakeholder Council  
2007-08 SECOORA Board Development Committee  
2008-09 NOAA IOOS Metrics Development working team Regional Association representative  
2008 IOOS Regional Association Workshop, invited participant (Dec. 2008, Baltimore, MD)  
2008 SECOORA Temporary Leadership Committee  
2008-09 SECOORA Operations and Maintenance Committee  
2008-10 Guest Instructor, UNCW Marine Quest  
2009-11 UNCW Climate Change Working Group (Chair) & representative to UNC-system climate change group  
2009-10 SECOORA Public Policy and Operations Committees  
2010 NOAA IOOS Metrics Development working team (II)  
2011-13 SECOORA Board of Directors  
2011-12 SECOORA Executive Committee – Secretary  
2012 SECOORA Congressional Visitation Delegation  
2011-12 SECOORA Science Committee (Chair)  
2012-15 NOAA Integrated Ocean Observing System Federal Advisory Committee  
2013-15 SECOORA Outreach and Education Committee  
2016-18 SECOORA Governance Committee  
2018-19 SECOORA Annual Meeting Planning Committee  
2019-pres. SECOORA Science Committee

University Service (Coastal and Marine Sciences):

- 1999-04 Chancellor Appointee to the University Diving and Water Safety Committee
- 1999-06 CMS Small Boat Use Committee (Chair, 2003)
- 2001-04 CMS space committee (Chair, 2004-2004)
- 2001-02 Marine Science Education Committee, member
- 2001-02 Marine Science Education Cross-cutting committee, Chair
- 2001 Kenan Endowed Chair Search Committee, member
- 2003 Marine Science Graduate Program Review Committee, member
- 2004 Congressional Visit Host, Center for Marine Science
- 2005-07 Carolinas Coastal Ocean Observing Partnership, Institutional Representative
- 2005-08 UNC-Marine Science Advisory Board
- 2005-08 Center Researchers for Innovative Strategic Planning, CMS, member
- 2005-07 Marine Quest/Marine Odyssey Advisory Council
- 2005-06 UNC-System, NC Integrated Ocean Observations Team, member
- 2007-13 CMS Internal Advisory Committee
- 2013-pres. Ashley High School Marine Science Academy Liaison
- 2013-16 Marine Science Undergraduate Fellowship Committee, Chair
- 2013-17 CMS Chairs Advisory Committee
- 2016-17 CRUS-NC Coastal Research for Undergraduate Students in NC, co-organizer
- 2016-17 UNCW Marine Science Self-Study, Vision Committee, member
- 2016-17 Marine Science Council Formation, Ad-Hoc Committee, Chair
- 2017 CMS Public Day
- 2017 UNCW Global Marine Science Summit, Technical Program Organizer, Field Trip Organizer and Steering Committee Member
- 2017-18 CMS Ad Hoc: Marsh Boardwalk Planning Committee
- 2017-pres. CMS Drone Use Committee, member
- 2018-pres. Marine Science Council
- 2018-19 Marine Science Council, Budget Committee, Chair
- 2018-19 Marine Science Council, Pilot Project Review Committee, Chair
- 2018-19 Marine Science Council, Space Committee, member
- 2019 UNCW Global Marine Science Summit, Technical Program Organizer, Field Trip Organizer and Steering Committee Member

University Service (Graduate Programs):

- 1998-99 M.S. Marine Science Planning Committee
- 1999-2004: Graduate Coordinator, M.S. Geology Program
- 1999-2005 Graduate Council
- 1999-2000 Graduate Council, Committee on Graduate Faculty Appointments
- 2000-03 Graduate Council, Policy and Planning Committee, Chair (2002-2003)
- 2018-19 Graduate Advisory Committee, M.S. Geosciences, member
- 2018-19 Graduate Advisory Committee, M.S. Marine Sciences, member

University Service (Department and College):

- 1995-99 Phi Sigma Pi National Honor Fraternity, Advisor
- 1995-99 Chancellor's appointed Student Organizations Committee
- 1999-2004 Department Student Awards Committee, member
- 1999-2004 Earth Sciences Graduate Students Association, Advisor
- 2003-04 CAS Research Initiatives Committee, member
- 2003-04 Oceanography Minor Development Committee, member
- 2006-07 Departmental Seminar Committee, chair

- 2006-07 Departmental Annual Review Committee
- 2007-08 Chair Search Committee, member
- 2014-16 S&BS Renovation Committee, EOS representative
- 2015-16 Marine Science Faculty Cluster Search Committee, member
- 2016-17 Chancellor's Expanded Leadership Council for Strategic Planning. Subcommittee on engagement
- 2017-pres. Grants and Contracts Working Group, member
- 2017-18 Departmental Awards Committee
- 2017-pres. EOS Oceanography and Geology Curriculum Committees

Other Service to the Profession:

- 2001 Co-Organizer and Chair of special session for Spring 2001 AGU meeting on "The development of tidal marsh systems"
- 2001 Session Chair, Geomorphology of Coastal Marshes, Estuarine Research Federation Meeting, Nov. 2001.
- 2001 Student Presentation Judge, Estuarine Research Federation Meeting, Nov. 2001.
- 2003 Scientific Steering Committee, Coastal Sediments 2003
- 2003 Co-organizer and Special Session Chair, "Development of Wetlands", Coastal Sediments 2003
- 2004 Student Presentation Judge, SEERS, October 2004
- 2004 NOAA Coastal Ocean Program Sea Level Rise Workshop, participant Feb. 2004
- 2006 Organizing Committee: SEERS/AERRS spring meeting
- 2006 Panelist and co-author, Coastal Marsh Response to Sea-Level Rise in the Mid-Atlantic, EPA Climate Change Science Program
- 2006 DUNCOC Program Committee
- 2007 Student presentation judge: ERF Bi-Annual Meeting, Providence, RI
- 2007 Student presentation judge: AERS/SEERS meeting, Atlantic Beach, NC
- 2011 Governor's Scientific Advisory Committee on Offshore Energy
- 2017 US Navy Ocean Science Taskforce, member

Public Outreach:

- 2001 NC-INSTAR: Instructor and co-organizer. This one-week in-residence program was conducted for middle and high school teachers throughout North Carolina. The goal of this program was to provide the participants with new skills that could be used in the classroom through experiential learning. The program was funded in part by a grant from the National Science Foundation to G. Healy (UNC-C) and by the Charlotte-Mecklenburg School District. Dr. Joanne Halls was the other instructor from UNCW.
- 2003 NC-INSTAR: Instructor. June 2003
- 2003 Summer Ventures Faculty, Ecology and Oceanography. June-July 2003.
- 2004 Summer Ventures Faculty, Ecology and Oceanography. June-July 2004.
- 2005 Media Interviews, Wilmington Star News (1), Television (1)
- 2005 SeaHawk Saturday, representative
- 2006 Landfall Speaker Series, Lecturer. October 2006
- 2006 Planet Ocean Speaker. November 2006
- 2006 Media Interviews, Wilmington Star News (4), Television (1)
- 2006 Coastal Ocean Observing in Southeastern NC: A Briefing to the NC Congressional Delegation, Washington DC January 2006
- 2006 The Southeast Ocean Observing Partnership: A Briefing to the congressional delegations of NC, SC, GA, and FL, Washington DC June 2006
- 2006 The Southeast Ocean Observing Partnership: A Briefing to NOAA and the Dept. of Commerce, Washington DC June 2006
- 2006 Ocean Observing Programs at UNCW: A presentation to the UNCW Board of Trustees, Wilmington, NC August 2006.

2006 Coastal Ocean Observing in Southeastern North Carolina. Cape Fear Community College, Wilmington, NC October 2006

2006 Collection and Management of Real-time Data. Presentation to the Lower Cape Fear River Science Technical Board, Wilmington, NC October 2006.

2007 UNCW MarineQuest Presentation

2007 Media Interviews: Newspaper (2), Radio (1)

2007 Advisory meeting: St James Plantation and Generation Development Group

2007 SeaHawk Saturday, representative

2009 SeaHawk Saturday, representative

2009-pres. Anderson Elementary Science Fair Judge & Project mentor

2010-13 Wrightsboro Elementary Science Fair Judge

2011-pres. Anderson Elementary Science Olympiad Mentor

2011-15 Annual Earth Science Week Activities

2013-16 Cape Fear Community College Marine Technology Program Advisory Committee

2014-pres. NHCS County Science Fair, Volunteer

2015-pres. NHC Elementary Science Olympiad, Volunteer and Event Leader

2015 UNCW STEM-day Volunteer

2016 UNC-System Semester at the Coast planning Committee

2016, 17 STEM EXPO and CAS Open House

2017 Codrington Elementary Science Fair Judge

2017-18 Outdoor Classroom Interactive Display and Weather Station, Anderson Elementary

2017-19 Student Intern Mentor: 5 high school students

2018, 19 CAS Team STEAM, Day Director

2018, 19 Summer Ventures Faculty, Coastal Oceanography

2018-pres. NC Estuarine Research Reserve-Masonboro Island, Local Advisory Committee, Member

2019 SECOORA public hurricane forum, Convener