Joseph W. Long, Ph.D (910) 962-2904
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University of North Carolina Wilmington, Wilmington, NC 28403

Education

May 2000	B.S., Civil and Environmental Engineering	Clarkson University	Potsdam, NY
March 2005	M.OcE, Ocean Engineering	Oregon State University	Corvallis, OR
May 2009	Ph.D., Civil/Coastal Engineering	Oregon State University	Corvallis, OR

Professional Experience

Aug 2021 – present	Assistant Professor, Director of Coastal Engineering Program, University of North Carolina Wilmington
Aug 2018 – Aug 2021	Assistant Professor, University of North Carolina Wilmington
Oct 2012 – July 2018	Research Civil Engineer/Oceanographer, U.S. Geological Survey St. Petersburg Coastal & Marine Science Center
Feb 2012 – May 2016	Adjunct Professor, Eckerd College
Oct 2009 – Sept 2012	Mendenhall Postdoctoral Fellow, U.S. Geological Survey St. Petersburg Coastal & Marine Science Center
July 2009 –Sept 2009	Postdoctoral Research Assistant, College of Oceanic & Atmospheric Sciences, Oregon State University
Sept. 2002 – June 2009	Graduate Research/Teaching Assistant, School of Civil and Construction Engineering, Oregon State University
June 2000 – July 2002	Hydraulic/Water/Wastewater Engineer, Stearns and Wheler, LLC

Awards & Professional Societies

- 2017 Keynote speaker XBeachX conference; Delft, The Netherlands
- Invited speaker AGU Fall Meeting 2014
- 2009 USGS Mendenhall Postdoctoral Fellowship
- Invited and fully sponsored to attend/present at the *2011 Marine Geosciences Leadership Symposium* held by the Consortium for Ocean Leadership, Washington D.C (April 2011).
- American Geophysical Union Outstanding Student Paper Award, Fall Meeting 2004
- American Geophysical Union Member (2002 – present)
- American Society of Civil Engineers (Assoc. Member) (2008 – present)

Teaching and Mentoring Experience

Eckerd College (instructor of record): 2012-2016

Introduction to Oceanography (enrollment: ~30):	5 semesters

University of North Carolina Wilmington (instructor of record courses only): 2018-present

Introduction to Oceanography (enrollment: ~100):	5 semesters
Contemporary Topics in Geosciences: Rip Currents (enrollment: 10 grad/undergrad):	1 semester
Written Communication in Oceanography (enrollment 17):	1 semester
Oceanography Capstone (enrollment: 6):	1 semester
Field Methods in Oceanography (enrollment: 20)	1 semester
Waves, Tides, and Coasts (enrollment: 19 grad/undergrad)	1 semester

Undergraduate Mentoring:

Taylor Prody	Honors thesis adviser (graduated 2020)
Kelsea Edwing	Honors thesis adviser (in-progress) & 2019 SECORRA Student Data Challenge Winner
Deanna Edwing	Honors thesis adviser (in-progress) & 2019 SECORRA Student Data Challenge Winner
Roy Mitchell	Directed Independent Study Student (Spring 2020)
Orion Witmer	Directed Independent Study Student (Spring 2020)
Amelia Lewis	Directed Independent Study Student (Spring 2021)
Amelia Stahl	First-Year Research Experience (FYRE) Student (Spring 2021)

Graduate/Postgraduate Mentoring:

Matthew Vincent	Masters thesis adviser (expected graduation May 2023)
Jeremy Braun	Masters thesis adviser (expected graduation May 2023)
Jesse Beckman	Masters thesis adviser (expected graduation Dec 2021)
Shannon Brown	Masters thesis adviser (graduated May 2021)
Adam Collins	Masters committee member (graduated May 2020)
Taylor Galloway	Masters committee member (graduated May 2021)
Hunter Synan	Masters committee member (expected graduation Dec 2021)
Frank Marshall	Masters committee member (expected graduation May 2022)
Laura Grim	Masters committee member (expected graduation May 2022)
Davina Passeri	Mendenhall Postdoctoral Adviser (USGS; until 2017)
Jenna Brown	Postdoctoral Adviser (USGS; until 2017)
Matt Ware	External PhD research adviser (Florida State University; 2017)
Anne Floor de Beer	External Masters research adviser (TU Delft; 2017)
Anouk de Bakker	External Masters research adviser (Utrecht University; 2011)

Teaching-related publications:

- **Long, J.W.**, Dixon, R.W., and Lichtenwalner, S. (2020). Ocean Waves: Linking the marine atmosphere and the ocean surface. In Bristol, D.L. and Pfeiffer-Herbert, A. (Eds.), Ocean Data Labs: Exploring the Ocean with OOI Data – Online Laboratory Manual. Rutgers, The State University of New Jersey. Accessed September 14, 2020. https://datalab.marine.rutgers.edu/ooi-lab-exercises/

- Anders, T., **Long, J**., Nuester, J., Weislogel., A, Williams, A., & Lichtenwalner, C. S. (2021). Profiles of DO and Chlorophyll-a in the Open Ocean. OOI Data Labs Collection. Accessed October 14, 2021. https://datalab.marine.rutgers.edu/explorations/2019/profiles.php

Recent/Current Funding

- The response and recovery of adjacent natural and built coastlines impacted by Hurricane Florence, National Science Foundation, OCE-1901894. PIs: **Long (lead)**, Hawkes, Ghoneim, Leonard; Eulie November 2018- October 2020, $48,543 (UNCW: $48,543)

- Launching WebCOOS: Webcams for Coastal Observations and Operational Support, NOAA Ocean Technology Transition Program, PIs: Hernandez, Porter, **Long**, Pang, Wilcox, September 2020- August 2023, $ 1,149,096 (UNCW: $188,054)

- Beach Berms: The missing link to predicting decadal-scale barrier island evolution? , U.S. Army Corps of Engineers/U.S. Coastal Research Program. PIs: **Long (lead)**, Hawkes, October 1, 2020 – September 30, 2023, $265,549 (UNCW: $265,549)

Professional Service

- U.S. Coastal Research Program Academic Advisory Board Member (1 of 5 nationwide)
- USCRP 2018 Coastal Storm Processes and Impacts Workshop Steering Committee Member
- USCRP 2021 Human and Ecosystem Health Workshop Steering Committee Member
- American Geophysical Union Fall Meeting 2010 Session Chair (Nearshore Processes)
- American Geophysical Union Ocean Sciences Meeting 2018 Session Chair (Coastal Geomorphology)
- Journal reviewer: *Journal of Geophysical Research-Oceans, Journal of Geophysical Research-Earths Surface, Continental Shelf Research, Coastal Eng., Ocean Modeling, Water, Water Resources Engineering, Marine Geology, Remote Sensing, Geomorphology, Environmental Modeling and Software, Geophysical Research Letters, Journal of Coastal Research , Shore and Beach*
- Proposal reviews for NSF (GLD, OCE, EAR, BCS, PREVENTS), Sea Grant (Hawaii, Puerto Rico, Woods Hole, Virginia, New Jersey, Alaska), NRL postdoctoral fellowship program
- Textbook reviews (Springer, W.W. Norton)

University/Departmental Service (UNCW only)

- Department of Earth and Ocean Sciences Faculty Senator (Fall 2020)
- Coastal and Marine Science Council Member (Fall 2019 to present)
- Coastal and Marine Science Council Mission/Strategic Planning Subcommittee (Fall 2018; Fall 2020)
- Faculty search committee (Fall 2018 (2), Fall 2019)
- Oceanography curriculum committee (Fall 2018 – present)
- Wings up Wilmington Service Event (Fall 2019)
- Department of Earth and Ocean Sciences Seminar Coordinator (Fall 2019)
- UNCW College of Arts and Sciences Open House (Fall 2018, Spring 2019)
- UNCW Center for Marine Science Open House (Fall 2019)
- Academic Adviser for UNCW Oceanography majors (9 undergraduate students)

Refereed Journal Publications (*student author; **postdoc author)

1. *Beckman, J. N., **Long, J. W**., Hawkes, A. D., Leonard, L. A., & Ghoneim, E. (2021). Investigating Controls on Barrier Island Overwash and Evolution during Extreme Storms. *Water*, *13*(20), 2829. MDPI AG. Retrieved from http://dx.doi.org/10.3390/w13202829
2. Mieras, R. S., *O'Connor, C. S., and **Long, J. W**. (2021) Rapid-response observations on barrier islands along Cape Fear, North Carolina during Hurricane Isaias. Shore & Beach: "A dedicated issue on the 2019 & 2020 hurricane seasons," Vol. 89, Issue 2, 1-11.
3. Passeri, D. L., Dalyander, P. S., **Long, J. W.**, Mickey, R. C., Jenkins III, R. L., Thompson, D. M., & Gonzalez, V. M. (2020). The roles of storminess and sea level rise in decadal barrier island evolution. *Geophysical Research Letters*, *47*(18), e2020GL089370.
4. *Collins, A. M., Brodie, K. L., Spicer, B. A., Hesser, T. J., Farthing, M. W., Lee, J., & **Long, J. W.** (2020). Bathymetric Inversion and Uncertainty Estimation from Synthetic Surf-Zone Imagery with Machine Learning. *Remote Sensing*, *12*(20), 3364.
5. *de Beer, A. F., McCall, R. T., **Long, J. W.**, Tissier, M. F. S., & Reniers, A. J. H. M. Simulating wave runup on an intermediate–reflective beach using a wave-resolving and a wave-averaged version of XBeach. *Coastal Engineering*, *163*, 103788.

6. **Long, J.W.**, Dalyanader, P. S., Poff, M., Spears, B., Borne, B., Thompson, D., Mickey, R., Dartez, S., Grandy, G. (2020). Event and decadal-scale modeling of barrier island restoration concepts for decision support. *Shore & Beach*, 88(1), 49-57, doi: http://doi.org/10.34237/1008816
7. Dusek, G., Hernandez, D., Willis, M., Brown, J. A., **Long, J. W.**, Porter, D. E., & Vance, T. C. (2019). WebCAT: Piloting the development of a web camera coastal observing network for diverse applications. *Frontiers in Marine Science*, 6, 353.
8. *Santos, V. M., Wahl, T., **Long, J. W.**, Passeri, D. L., & Plant, N. G. (2019). Combining Numerical and Statistical Models to Predict Storm‐Induced Dune Erosion. *Journal of Geophysical Research: Earth Surface*, 124(7), 1817-1834.
9. *Ware, M., **Long, J. W.**, & Fuentes, M. M. (2019). Using wave runup modeling to inform coastal species management: An example application for sea turtle nest relocation. *Ocean & Coastal Management*, 173, 17-25.
10. Elko, N, Dietrich, J.C., Cialone, M., Stockdon, H.F., Bilskie, M.V., Boyd, B., Charbonneau, B., Cox, D., Dresback, K.M., Elgar,S., Lewis, A., Limber, P., **Long, J.W.**, Massey, T.C., Mayo, T., McIntosh, K., Nadal-Caraballo, N., Raubenheimer, B., Tomiczek, T., Wargula, A. (2019). U.S. Coastal Research Program: Advancing the Understanding of Storm Processes and Impacts. *Shore & Beach*, 87(1), 41-55.
11. **Passeri, D. L., Bilskie, M. V., Plant, N. G., **Long, J. W.**, & Hagen, S. C. (2018). Dynamic modeling of barrier island response to hurricane storm surge under future sea level rise. *Climatic change*, 149(3-4), 413-425.
12. *Torres‐Garcia, L. M., Dalyander, P. S., **Long, J. W.**, Zawada, D. G., Yates, K. K., Moore, C., & Olabarrieta, M. (2018). Hydrodynamics and sediment mobility processes over a degraded senile coral reef. *Journal of Geophysical Research: Oceans*, 123(10), 7053-7066.
13. **Passeri, D.L., **Long, J.W.**, Plant, N.G., Bilskie, M.V. and Hagen, S.C., (2018). The influence of bed friction variability due to land cover on storm-driven barrier island morphodynamics. *Coastal Engineering*, 132, pp.82-94.
14. Mickey, R., **Long, J.W.**, Dalyander, P.S., Plant, N. and Thompson, D., (2018). A framework for modeling scenario-based barrier island storm impacts. *Coastal Engineering*, 138, pp.98-112.
15. Overbeck, J. R., **Long, J.W.**, and Stockdon, H.F. (2017), Testing model parameters for wave-induced dune erosion using observations from Hurricane Sandy, *Geophys. Res. Lett.*, 44, 937–945, doi:10.1002/2016GL071991.
16. Wahl, T., N. G. Plant, and **J. W. Long** (2016), Probabilistic assessment of erosion and flooding risk in the northern Gulf of Mexico, *Journal of Geophysical Research: Oceans*, 121, 3029–3043, doi:10.1002/2015JC011482.
17. **Long, J. W.**, and H. T. Özkan-Haller (2016), Forcing and variability of nonstationary rip currents, J. Geophys. Res. Oceans,121, 520–539, doi:10.1002/2015JC010990.
18. Dalyander, P. S., Plant, N. G., **Long, J. W.**, & McLaughlin, M. (2015). Nearshore dynamics of artificial sand and oil agglomerates. *Marine pollution bulletin*, *96*(1), 344-355.
19. **Long, J. W.**, Plant, N. G., Dalyander, P. S., & Thompson, D. M. (2014). A probabilistic method for constructing wave time-series at inshore locations using model scenarios. *Coastal Engineering*, *89*, 53-62.
20. **Long, J. W**., *de Bakker, A., & Plant, N. G. (2014). Scaling coastal dune elevation changes across storm-impact regimes. *Geophysical Research Letters*, *41*(8), 2899-2906.
21. Sherwood, C. R., **Long, J. W.**, Dickhudt, P. J., Dalyander, P. S., Thompson, D. M., & Plant, N. G. (2014). Inundation of a barrier island (Chandeleur Islands, Louisiana, USA) during a hurricane: Observed water‐level gradients and modeled seaward sand transport. Journal of Geophysical Research: Earth Surface, 119(7), 1498-1515.

22. Dalyander, P.S., **J.W. Long**, N.G. Plant, and D.M. Thompson (2014), Assessing mobility and redistribution patterns of sand and oil agglomerates in the surf zone, *Marine Pollution Bulletin, 80*(1), 200-209.
23. Stockdon, H. F., D.M. Thompson, N.G. Plant, and **J.W. Long** (2014). Evaluation of wave runup predictions from numerical and parametric models. *Coastal Engineering*, *92*, 1-11.
24. Plant, N.G., Flocks, J., Stockdon, H.F., Long, J.W., Guy, K., Thompson, D.M., Cormier, J.M., Smith, C.G., Miselis, J.L. and Dalyander, P.S. (2014). Predictions of barrier island berm evolution in a time-varying storm climatology. *Journal of Geophysical Research: Earth Surface*, *119*(2), 300-316.
25. Nosal A.P., D.C. Cartamil, **J.W. Long**, M. Luhrmann M, N.C.Wegner, J.B. Graham (2013), Demographic composition, movement patterns, and putative causes of leopard sharks (Triakis semifasciata) aggregating in a marine reserve along the open coast of southern California, USA, *Environmental Biology of Fishes*
26. **Long, J.W.**, & N.G. Plant (2012). Extended Kalman Filter framework for forecasting shoreline evolution. *Geophysical Research Letters*, *39*(13).
27. **Long, J.W.**, and H.T. Özkan-Haller (2009), Low-frequency characteristics of wave group–forced vortices, *J. Geophys. Res*., 114, C08004, doi:10.1029/2008JC004894
28. **Long, J.W**., and H.T. Özkan-Haller (2005), Offshore controls on nearshore rip currents, *J. Geophys. Res*., 110, C12007, doi:10.1029/2005JC003018
29. Scott, C.P., D.T. Cox, T.B. Maddux, and **J.W. Long** (2005), Large-scale laboratory observations of turbulence of a fixed barred beach, *Meas. Sci. Technol*. 16, doi:10.1088/0957-0233/16/10/004

Scientific Reports

1. Jenkins, R.L., III, **Long, J.W.**, Dalyander, P.S., Thompson, D.M., and Mickey, R.C., (2020). Development of a process-based littoral sediment transport model for Dauphin Island, Alabama: U.S. Geological Survey Open-File Report 2020–1011, 37 p. https://doi.org/10.3133/ofr20201011.
2. Mickey, R.C., **Long, J.W.**, Dalyander, P.S., Jenkins, R.L., III, Thompson, D.M., Passeri, D.L., and Plant, N.G., (2020). Development of a modeling framework for predicting decadal barrier island evolution: U.S. Geological Survey Open-File Report 2019–1139, 46 p., https://doi.org/10.3133/ofr20191139.
3. Mickey, R.C., Godsey, E., Dalyander, P.S., Gonzalez, V., Jenkins, R.L., III, **Long, J.W.**, Thompson, D.M., and Plant, N.G., (2020). Application of decadal modeling approach to forecast barrier island evolution, Dauphin Island, Alabama: U.S. Geological Survey Open-File Report 2020–1001, 45 p., https://doi.org/10.3133/ofr20201001.
4. **Long, J.W.**, Henderson, R.E., and Thompson, D.M., (2020). Forecasting future beach width—A case study along the Florida Atlantic coast: U.S. Geological Survey Open-File Report 2019–1150, 13 p., https://doi.org/10.3133/ofr20191150.
5. Passeri, D.L., **Long, J.W.**, Jenkins, R.L., and Thompson, D.M., 2018, Effects of proposed navigation channel improvements on sediment transport in Mobile Harbor, Alabama: U.S. Geological Survey Open-File Report 2018–1123, 22 p., https://doi.org/10.3133/ofr20181123.
6. Mickey, R.C., **Long, J.W.**, Plant, N.G., Thompson, D.M., and Dalyander, P.S., (2017). A methodology for modeling barrier island storm-impact scenarios (ver. 1.1, March 2017): U.S. Geological Survey Open-File Report 2017–1009, 17 p., https://doi.org/10.3133/ofr20171009.
7. Thompson, D.M., Dalyander, P.S., **Long, J.W.**, and Plant, N.G., (2017). Correction of elevation offsets in multiple co-located lidar datasets: U.S. Geological Survey Open-File Report 2017–1031, 10 p., https://doi.org/10.3133/ofr20171031.
8. Dalyander, P. S., **Long, J. W.**, Plant, N. G., McLaughlin, M. R., & Mickey, R. C. (2015). Field observations of artificial sand and oil agglomerates. *Open-File Report*, (2015-1057).

9. Doran, K. S., **Long, J. W.**, & Overbeck, J. R. (2015). A method for determining average beach slope and beach slope variability for US sandy coastlines. *Open-File Report*, (2015-1053).
10. Dalyander, P. S., Mickey, R. C., **Long, J. W.**, & Flocks, J. G. (2015). Effects of proposed sediment borrow pits on nearshore wave climate and longshore sediment transport rate along Breton Island, Louisiana. *Open-File Report*, (2015-1055).

Published Conference Proceedings

1. Doran, K. S., Stockdon, H. F., **Long, J.**, & Plant, N. G. (2019). Forecasts of Coastal-Change Hazards. In *Coastal Sediments 2019* (pp. 1400-1409).
2. Aretxabaleta, A. L., Doran, K. S., **Long, J. W.**, Erikson, L., & Storlazzi, C. D. (2019). Toward a national coastal hazard forecast of total water levels. In *Proceedings of the Coastal Sediments 2019* (pp. 1373-1384).
3. Santos, V. M., Wahl, T., **Long, J. W.**, Passeri, D. L., & Plant, N. G. Surrogate model development for coastal dune erosion under storm conditions. In *Proceedings of the Coastal Sediments 2019*
4. N.G. Plant and **Long, J.W.** (2015). Morphodynamic Data Assimilation Used to Understand Changing Coasts. *Coastal Sediments 2015*: doi: 10.1142/9789814689977_0244
5. Miselis., J.L., **Long, J.W.**, Dalyander, P.S., Flocks, J.G., Buster, N.A., and Mickey, R.C. (2015). Integrating Geophysical and Oceanographic Data to Assess Interannual Variability in Longshore Sediment Transport. *Coastal Sediments 2015*: doi: 10.1142/9789814689977_0011
6. Overbeck, J.R., Long, J.W., Stockdon, H.F., and Birchler, J.J (2015). Enhancing Evaluation of Post-Storm Morphologic Response Using Aerial Orthoimagery from Hurricane Sandy. *Coastal Sediments 2015*: doi: 10.1142/9789814689977_0250
7. Plant, N.G, **Long, J.W.**, Dalyander, P.S., Thompson, D.M., and Raabe, E.A., 2013, Application of a hydrodynamic and sediment transport model for guidance of response efforts related to the Deepwater Horizon oil spill in the Northern Gulf of Mexico along the coast of Alabama and Florida: U.S. Geological Survey Open-File Report 2012–1234, 46 p., http://pubs.usgs.gov/of/2012/1234/.
8. **Long, J.W.** and Plant, N.G. (2010), Assimilating Models and Data to Enhance Predictions of Shoreline Evolution, *in Proceedings of 32nd International Conference on Coastal Engineering*, Shanghai, China.
9. **Long, J.W.** and Özkan-Haller, H.T. (2008), Long-Term Predictions of Offshore Controlled Rip Currents, *in Proceedings of 31st International Conference on Coastal Engineering*, pp. 1018-1027, San Diego, USA.
10. **Long, J.W.** and Özkan-Haller, H.T. (2006), A New Look at Wave Group Induced Nearshore Circulation, *in Proceedings of 30th International Conference on Coastal Engineering*, pp. 1018-1027, San Diego, USA.
11. **Long, J.W.**, Özkan-Haller, H.T., and J.A. Shore, J.A. (2004), Modeling of the Wave and Circulation Field at the Nearshore Canyon Experiment (NCEX), *in Proceedings of 29th International Conference on Coastal Engineering*, pp. Lisbon, Portugal.

Conference Presentations

Over 75 conference oral and poster presentations – list available upon request.

Sample of Media Coverage and Interviews

Scientific American:	https://www.scientificamerican.com/article/local-flood-forecasting-has-been-dangerously-imprecise-mdash-thats-about-to-change1
NPR**:**	http://www.npr.org/2016/08/24/488523371/climate-change-complicates- predictions-of-damage-from-big-surf
Live Science:	https://www.livescience.com/60334-hurricane-irma-could-change-florida- coast.html
Weather.com:	https://weather.com/news/news/hurricane-matthew-dune-damage-usgs-report