

Dylan L. Anderson

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Formal Education:

Ph.D. Ocean and Coastal Engineering Anticipated 2019
 School of Civil and Construction Engineering
 Oregon State University, Corvallis, Oregon, 97331, USA.

B.S. Geology and Geophysics with Honors May 2012
 Environmental Sciences Department
 Boston College, Chestnut Hill, Massachusetts, 02467, USA.
"Sediment Transport Processes in a Coastal Lagoon; Katama Bay, Martha's Vineyard."
 Supervised Gail Kineke

Appointments:

Graduate Research Assistant (October 2017 -) September 2013 -
 National Science Foundation Graduate Research Fellowship (2014-2017)
 Provost's Distinguished Graduate Fellowship (2013-2014)
 ARCS Scholarship (Achievement Reward for College Scientists, 2013-2016)
 School of Civil and Construction Engineering, Oregon State University
 Corvallis, OR, 97331, USA.

Undergraduate Research Fellowship 2011-2012
 Coastal Processes Laboratory, Boston College
 Chestnut Hill, MA, 02467, USA.

Outreach and Lecturing Experience

- Invited Speaker, NSF NHERI Coastal Hazards Engineering July 2017
 - National workshop for new users of O.H. Hinsdale Research Laboratory, 30 minute lecture: *Lessons learned from a large-scale experiment of sandbar migration*
- Visiting Scholar: University of Cantabria May-June 2017
 - Three month experience working with Dr. Fernando Mendez in Santander, Spain.
- OSU College of Engineering Research Exposition, Portland Arts Museum March 2016
 - Represented the coastal and ocean department at an annual event highlighting student research to the general public
- OSU Coastal and Ocean Seminar Series, Corvallis, OR February 2016
 - Hour long lecture: *Statistically Downscaling Atmospheric Variability to Local Wave Climates*
- OSU Coastal and Ocean Seminar Series, Corvallis, OR January 2016

- Hour long lecture: *Momentary Bed Failures induced by Asymmetrical Waves in the Surf Zone*
- ARCS Research Symposium, Portland Arts Museum, Portland, OR November 2015
 - Student presentation: *Expected Impacts of the 2015 El Nino*
- State of the Coast, Coos Bay, OR October 2015
 - Poster Fair: *The Effect of large-scale Climate Change on Oregon's Local Coastal Erosion Hazards*
- Visiting Seminar, *Multi-scale temporal and spatial coastal variability in the Pacific Northwest*, USGS Pacific Coast and Marine Science Center, Santa Cruz, CA July 2015
- OSU Coastal and Ocean Seminar Series, Corvallis, OR May 2015
 - Hour long lecture: *One-line modeling of alongshore sediment transport processes within headland bounded systems*
- OSU Coastal and Ocean Seminar Series, Corvallis, OR March 2015
 - Hour long lecture: *Introducing BARSED, a sandBAR SEDiment transport experiment in O.H. Hinsdale's Long Wave Flume*
- OSU College of Engineering Research Exposition February 2015
 - Represented my department in a poster fair open to the general public
- OSU Civil Engineering Student Series, Corvallis, OR January 2015
 - 20 minute lecture to entry level engineering students
- Invited Student Speaker, ARCS Luncheon, Newport, OR April 2014
 - 15 minutes Outreach Talk during a 100-person luncheon at Rogue Brewery following a tour of Hatfield Marine Science Center
- OSU CCE/MIME Research Exposition, Hilton Conference Hall, Portland OR March 2014
 - One of several selected civil engineering students presenting 10 minute talks to prospective graduate students

Teaching Experience:

- Oregon State University: GEO485/585 Coastal Geomorphology Winter 2017
 - Teaching internship: led class lectures and activities, designed and graded assignments, and assisted in course goals and syllabus design
- Boston College; EESC1157 Oceanography Lab Assistant Spring 2012
 - Weekly 2 hour labs with short lecture components and grading of assignments (20 undergraduates)
- SEA High School Summer Programs; Instructor Summer 2011
 - Instructed high school students on oceanography, navigation, and sail handling of the tall ship research vessel SSV Corwith Cramer in the offshore North Atlantic

Professional Development

- NSF NHERI Coastal Hazards Engineering: New User Workshop July 2017
 - Introduction to capabilities of NSF facilities and funding avenues to secure grant proposals and laboratory time
- Young Coastal Scientists Workshop, Wilmington, DE July 2014
 - Guest lectures from professors at the University of Delaware concerning scientific outreach and broader impacts

Research Interests:

Coastal morphodynamics
 Surf-zone sediment transport
 Wave climate variability
 Statistical downscaling

Honors & Awards:

- Outstanding Student Paper Award – AGU: Fall Meeting December 2016
- Best Student Presentation – State of the Coast Conference October 2015
- Best Student Paper – Coastal Sediments 2015 Conference Proceedings May 2015
- NSF Graduate Research Fellowship September 2014-2017
- ARCS Scholarship November 2013-2016
- Provost's Distinguished Graduate Fellowship September 2013
- Sophomore Scholar Award, Boston College May 2010

Research Experience:

Projects:

- Time-varying climate emulator for investigating present and future flooding and erosion hazards at US Navy installations across the Pacific Ocean April 2017-
- Developing a tailor-made index for alongshore transport driven by downscaled atmospheric forcing (with Peter Ruggiero [Oregon State University, USA], Fernando Méndez, [IH Cantabria, Spain]) July 2015-
- Assessing the relative contributions of pressure gradients and bed shear stress on sediment transport mechanism across a surf zone sandbar beneath energetic breaking waves (with Dan Cox [Oregon State University, OR], Jack Puleo, and Tom Hsu [University of Delaware, DE]) 2015-2017
- Developing a coastal change model for alongshore sediment transport driving beach rotations in the Pacific Northwest (with Peter Ruggiero [Oregon State University, USA]) September 2014-
- Investigating long term trends in wave hindcast data off of the US West Coast (with Peter Ruggiero [Oregon State University, OR]) 2014-2016
- Investigating post 2009-2010 El Nino shoreline change response in Tillamook, Oregon (with Peter Ruggiero [Oregon State University, OR], and Jonathan Allan [Oregon Department of Geology and Mineral Industries, OR]) 2013-2014
- Quantifying the spatial distribution of sediment fluxes in Katama Bay, Martha's Vineyard, MA (with Gail Kineke [Boston College, MA], Britt Raubenheimer [Woods Hole Oceanographic Institute, MA]) 2011-2012
- Understanding fluid mud dynamics on the Chenier Plain, LA (with Gail Kineke [Boston College, MA], Rocky Geyer [Woods Hole Oceanographic Institute, MA]) 2010-2011

Field Experience

- Bathymetric and topographic surveys to monitor beach evolution in Oregon and Washington, USA July 2013 -
- SEDEXII synoptic beach monitoring of summer recovery processes Summer 2016
- RAPID grant monitoring El Nino erosion of Netarts, Oregon Winter 2015-16

- Oregon Inner-shelf coastal oceanography installing monitoring buoys July 2014
 - Connecticut River Estuary ship-based hydrodynamic and sediment sampling Fall 2012
 - Research cruise aboard *SSV Corwith Cramer* August 2011
 - Katama Bay, Martha's Vineyard sediment sampling September 2011
 - Research cruise aboard *SSV Robert C. Seamans* in the equatorial Pacific collecting biological, chemical, and physical oceanographic data Fall 2010
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Peer-Reviewed Publications:

- Anderson, D.**, D. Cox, R. Mieras, J. Puleo, and T. Hsu (2017) Observations of pore-pressure gradients on a surf-zone sandbar. *Journal of Geophysical Research: Oceans*
- Mieras, R., J. Puleo, **D. Anderson**, T. Hsu, and D. Cox (2017) Sheet flow processes on a sandbar under shoaling and breaking waves. *Geophysical Research Letters*.
- Barnard, P., D. Hoover, D. Hubbard, A. Snyder, B. Ludka, J. Allen, G. Kaminsky, P. Ruggiero, T. Gallien, L. Gabel, D. McCandless, H. Weiner, N. Cohn, **D. Anderson**, and K. Serafin (2017) Extreme oceanographic forcing and coastal response due to the 2015-16 El Nino. *Nature Communications*.
- Susa, T. M., P. Ruggiero, **D. Anderson**, and N. Cohn (2014) Morphological Change and Sand Transport Mechanisms in the Dynamic Dune Complex of South Beach State Park, Oregon. *Shore and Beach*. vol. 82, no. 4, 24-34.

Other Publications:

- Anderson, D.** and Ruggiero, P. (2015) Modeling Interannual to Multi-Decadal Shoreline Rotations of Headland-Bounded Littoral Cells. *Proceedings of the Coastal Sediments Conference 2015*.
- Cohn, N., **D. Anderson**, and P. Ruggiero. (2015) Observations of intertidal bar welding along a high energy, dissipative coastline, *Proceedings of the Coastal Sediments Conference 2015*.
- Anderson, D.** 2012, Sediment Transport Processes in a Coastal Lagoon; Katama Bay, Martha's Vineyard. Honors Thesis. Boston College.

Conference Presentations:

- Anderson, D.**, D. Cox, J. Puleo, R. Mieras, and T. Hsu. *Instantaneous sediment bed level response to wave-induced pore-pressure gradients on a surf zone sandbar*. Oral presentation to the American Geophysical Union Fall Meeting, December 2016.
- Barnard, P., D. Hoover, D. Hubbard, A. Snyder, B. Ludka, J. Allen, G. Kaminsky, P. Ruggiero, T. Gallien, L. Gabel, D. McCandless, H. Weiner, N. Cohn, **D. Anderson**, and K. Serafin. *Coastal Hazards along the U.S. West Coast during the 2015-16 El Nino*. Oral presentation to AGU Fall Meeting, December 2016.
- Mieras, R., J. Puleo, **D. Anderson**, D. Cox, T. Hsu. *From the sand bed to the free surface: an experimental study of wave-induced sediment transport over a sandbar*. Poster presentation to AGU Fall Meeting 2016.
- Feehan, S., P. Ruggiero, N. Cohn, **D. Anderson**. *Characterizing Feedbacks between Environmental Forcing and Sediment Characteristics in Coastal Systems*. Poster presentation to AGU Fall Meeting, December 2016.

- Anderson, D.**, P. Ruggiero, J. Alvarez-Antolinez, and F. Mendez. *On the importance of wave simulation techniques for forecasting shoreline change*. Oral presentation to Ocean Sciences Meeting, New Orleans, LA, February 2016.
- Anderson, D.**, P. Ruggiero. *Modeling shoreline rotation of headland-bounded littoral cells due to ENSO-induced wave climate variability*. Oral presentation to Coastal Sediments Conference, San Diego, CA, May 2015.
- Anderson, D.**, P. Ruggiero. *Modeling Inter-Annual to Multi-Decadal Shoreline Rotations of Headland-Bounded Littoral Cells in the Pacific Northwest*. Poster presentation to AGU Fall Meeting, San Francisco, CA, December 2014
- Cohn, N., **D. Anderson**, T. Susa, P. Ruggiero, D. Honegger, and M. Haller. Observations of intertidal bars welding to the shore: examining the mechanisms of onshore sediment transport and beach recovery. Poster presentation to AGU Fall Meeting, San Francisco, CA, December 2014.
- Anderson, D.** P. Ruggiero. *Relating Shoreline Change Rates to Climatic Trends of Wave Energy in the US Pacific Northwest*. Poster presentation to Young Coastal Scientist Conference, Wilmington, DE, July 2014.
- Anderson, D.**, P. Ruggiero, and J. Allan. *Evolving Shoreline Change Rates Along the US Pacific Northwest Coast*. Poster presentation to AGU Fall Meeting, San Francisco, CA, December 2013.

Computer, Technical & Other Skills:

- **Computer** - Data Analysis (Matlab, Mathematica, R), Office Suite (Word, Excel, Powerpoint), Other (Wave modeling: XBeach, SWAN, STWAVE, ADCIRC, Delft-3D)
- **Applied** – Coast Guard approved 100 Ton Limited Master's License, SCUBA Certified, Transportation Worker Identification Credential (TWIC)

Leadership and Community Service

- Science Judge, Salmon Bowl, National Ocean Science Bowl, Corvallis, OR February 2015
- Rules Judge, Salmon Bowl, National Ocean Science Bowl, Corvallis, OR February 2014
- Boston College Green Team, Club Coordinator, Chestnut Hill, MA 2010-2012
- Appalachia Volunteers Program, Habitat for Humanity Trip Leader 2009-2010
Week long trips to Erie, PA and Wilmington, NC