
EMILY L. SHROYER

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I am a sea-going physical oceanographer with 15-years' experience in the field. My research interests focus on air-sea interactions, ice-sea interactions, and the influence of turbulence and mixing on ocean circulation.

EMPLOYMENT

- Associate Professor, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University; July 2017- present.
- Assistant Professor, College of Earth, Ocean, and Atmospheric Sciences, Oregon State University; October 2011- June 2017.
- Postdoctoral Investigator, Woods Hole Oceanographic Institution; April 2011- October 2011.
- Postdoctoral Scholar, Woods Hole Oceanographic Institution; October 2009- March 2011.
- Graduate Research Associate, Oregon State University; October 2004 – September 2009.
- Peace Corps Volunteer, Ghana, West Africa, Mathematics Teacher at Half Assini Secondary School; June 2001- September 2003.

EDUCATION

- Ph.D. in Oceanography, College of Atmospheric and Oceanic Sciences, Oregon State University, 2009.
- Bachelor of Science cum Laude in Physics, University of Alaska, Fairbanks, 2000.

Professional Memberships: AAAS, AGU, AMS

(Note: Publications and Book Contributions are classified by expertise under in situ turbulence^α, coastal processes^β, high-latitude processes^γ, biophysical processes^δ, and air-sea interactions^ε using indicated superscripts.)

PUBLICATIONS

- Moum, J.N., D.M. Farmer, **E.L. Shroyer**, W.D. Smyth, and L. Armi, Dissipative losses in nonlinear internal waves propagating across the continental shelf. J. Phys. Ocean., 37(7), 1989-1995, 2007. ^{α,β}

- **Shroyer, E.L.**, Varicose Waves: A Science Box as part of Turbulence, Transfer and Exchange Small-Scale Processes in the Coastal Ocean by J.N. Moum, J.D. Nash and J.M. Klymak, *Oceanography*, 21(4), 28, 2008. ^{α,β}
- **Shroyer, E.L.**, J.N. Moum, and J.D. Nash, Observations of polarity reversal in shoaling nonlinear waves, *J. Phys. Ocean.*, 39, 691-701, 2009. ^{α,β}
- **Shroyer, E.L.**, J.N. Moum, and J.D. Nash, Mode-2 waves on the continental shelf: ephemeral components of the NLIW field, *J. Geophys. Res.*, 115, 2010, doi:10.1029/2009JC005605, C07001. ^{α,β}
- **Shroyer, E.L.**, J.N. Moum, and J.D. Nash, Vertical heat flux and lateral mass transport in nonlinear internal waves. *Geophys. Res. Letters*, 37, L08601, 2010 doi:10.1029/2010GL042715. ^{α,β,δ}
- **Shroyer, E.L.**, J. Moum and J. Nash, Energy transformations and dissipation of nonlinear internal waves over New Jersey's continental shelf, *Nonlinear Processes in Geophysics*, 17, 345-360, 2010, doi:10.5194/npg-17-345-2010. ^{α,β}
- **Shroyer, E.L.**, J. Moum and J. Nash, Nonlinear Internal Waves over New Jersey's continental shelf, *J. Geophys. Res.*, 116, 2011, doi:10.1029/2010JC006332, C03022. ^{α,β}
- **Shroyer, E.L.** and A.J. Plueddemann, Wind-driven modification of the Alaskan coastal current, *J. Geophys. Res.*, 117, C03031, 2012, doi:10.1029/2011JC007650. ^{β,χ}
- **Shroyer, E.L.**, Turbulence Dissipation in Barrow Canyon, *J. Phys. Ocean.*, 42, 1012-1021, 2012, doi: 10.1175/JPO-D-11-0184.1. ^{α,β}
- Nash, J.D., S. Kelly, **E. Shroyer**, J. Moum, and T. Duda, The Unpredictable Nature of Internal Tides and Nonlinear Waves on the Continental Shelf, *J. Phys. Oceanogr.*, **42**, 1981–2000, 2012, doi: <http://dx.doi.org/10.1175/JPO-D-12-028.1> ^β
- Nash, J., **E. Shroyer**, S. Kelly, M. Inall, T. Duda, M. Levine, N. Jones, and R. Musgrave, Are any Coastal Internal Tides Predictable? *Oceanography*, 25 (2), June 2012. ^β
- Benoit-Bird, Kelly J., **Emily L. Shroyer**, and Margaret A. McManus, A critical scale in plankton aggregations across coastal ecosystems, *Geophysical Research Letters* 40.15, 3968-3974, 2013. ^{β,δ}
- B. Lund, H. C. Graber, J. Xue, R. Romeiser, **E. L. Shroyer**, and J. N. Moum, Large amplitude internal wave evolution studied by marine radar, *Proc. Geoscience and Remote Sensing Symposium, IEEE International*, 2424-2427, 2013. ^β
- **E. L. Shroyer**, K. J. Benoit Bird, J. D. Nash, and J. N. Moum, Stratification and mixing regimes in biological thin layers over the Mid-Atlantic Bight, *Limnology and Oceanography*, 59, 2014, 1349-1363. ^{α,δ}
- Lucas, A. J., **E. L. Shroyer**, H. W. Wijesekera, H. J. S. Fernando, E. D'Asaro, M. Ravichandran, S. U. P. Jinadasa et al., Mixing to Monsoons: Air-Sea Interactions in the Bay of Bengal, *Eos, Transactions American Geophysical Union* 95, no. 30, 2014, 269-270. ^ε
- **E. Shroyer**, R. Samelson, L. Padman, and A. Münchow, Modeled ocean circulation in Nares Strait and its dependence on landfast-ice cover, *J. Geophys. Res. (Oceans)*, 2015. ^χ
- Dustin Carroll, David A. Sutherland, **Emily L. Shroyer**, Jonathan D. Nash, Ginny A. Catania, and Leigh A. Stearns, Modeling Turbulent Subglacial Meltwater Plumes:

- Implications for Fjord-Scale Buoyancy-Driven Circulation. *J. Phys. Oceanogr.*, **45**, 2015, 2169–2185. ^{α, β, χ}
- M. J. Fried, G. A. Catania, T. C. Bartholomaeus, D. Duncan, M. Davis, L. A. Stearns, J. Nash, **E. Shroyer**, D. Sutherland, Distributed subglacial discharge drives significant submarine melt at a Greenland tidewater glacier, *Geophysical Research Letters*, 42 (21), 2015, 9328-9336. ^{β, χ}
 - Hemantha Wijesekera, **Emily Shroyer**, Amit Tandon, M. Ravichandran, Debasis Sengupta, S.U.P. Jinadasa, Harindra Fernando, et al., ASIRI: An Ocean-Atmosphere Initiative for Bay of Bengal, *Bulletin of the American Meteorological Society*, 2016. ^{ϵ}
 - Timothy C. Bartholomaeus, Leigh A. Stearns, David A. Sutherland, **Emily L. Shroyer**, Jonathan D. Nash, Ryan T. Walker, Ginny Catania, Denis Felikson, Dustin Carroll, Mason J. Fried, Brice P. Y. Noël, Michiel R. van den Broeke, Contrasts in the response of adjacent fjords and glaciers to ice sheet surface melt in West Greenland, *Annals of Glaciology*, Available on CJO 2016, doi:10.1017/aog.2016.19 ^{β, χ}
 - MacKinnon, J.A., J.D. Nash, M.H. Alford, A.J. Lucas, J.B. Mickett, **E.L. Shroyer**, A.F. Waterhouse, A. Tandon, D. Sengupta, A. Mahadevan, M. Ravichandran, R. Pinkel, D.L. Rudnick, C.B. Whalen, M.S. Albery, J. Sree Lekha, E.C. Fine, D. Chaudhuri, and G.L. Wagner, A tale of two spicy seas, *Oceanography* 29(2): 50–61, 2016, <http://dx.doi.org/10.5670/oceanog.2016.38>. ^{α, χ}
 - **Shroyer, E.L.**, D.L. Rudnick, J.T. Farrar, B. Lim, S.K. Venayagamoorthy, L.C. St. Laurent, A. Garanaik, and J.N. Moum, Modification of upper-ocean temperature structure by subsurface mixing in the presence of strong salinity stratification, *Oceanography* 29(2): 62–71, 2016, <http://dx.doi.org/10.5670/oceanog.2016.39>. ^{α, ϵ}
 - Mahadevan, A., G. Spiro Jaeger, M. Freilich, M. Omand, **E.L. Shroyer**, and D. Sengupta, Freshwater in the Bay of Bengal: Its fate and role in air-sea heat exchange, *Oceanography* 29(2): 72–81, 2016, <http://dx.doi.org/10.5670/oceanog.2016.40>. ^{α, ϵ}
 - Gordon, A.L., **E.L. Shroyer**, A. Mahadevan, D. Sengupta, and M. Freilich, Bay of Bengal: 2013 northeast monsoon upper-ocean circulation, *Oceanography* 29(2): 82–91, 2016, <http://dx.doi.org/10.5670/oceanog.2016.41>. ^{ϵ}
 - Dustin Carroll, David Sutherland, Benjamin Hudson, Twila Moon, Ginny Catania, **Emily Shroyer**, Jonathan Nash, Timothy Bartholomaeus, Denis Felikson, Leigh Stearns, Brice Noel, Michiel van den Broeke, The impact of glacier geometry on meltwater plume structure and submarine melt in Greenland fjords, *Geophys. Res. Lett.*, 43, 9739–9748, doi:10.1002/2016GL070170. ^{β, χ}
 - **E. L. Shroyer**, L. Padman, R. M. Samelson, A. Münchow, L. Stearns, Seasonal control of Petermann Gletscher ice-shelf melt by the ocean's response to sea-ice cover in Nares Strait. *Journal of Glaciology*, 63(238), 324-330, 2017. doi:10.1017/jog.2016.140. ^{β, χ}
 - Arnold L. Gordon, **Emily Shroyer**, and V.S.N. Murty, Intrathermocline Eddy in the Bay of Bengal, *Nature Scientific Reports* 7, Article number: 46218 (2017) doi:10.1038/srep46218. ^{ϵ}
 - Jackson, R. H., **E. L. Shroyer**, J. D. Nash, D. A. Sutherland, D. Carroll, M. J. Fried, G. A. Catania, T. C. Bartholomaeus, and L. A. Stearns (2017), Near-glacier

- surveying of a subglacial discharge plume: Implications for plume parameterizations, *Geophys. Res. Lett.*, 44, 6886–6894, doi: 10.1002/2017GL073602.^{β,χ}
- Denis Felikson, Timothy C. Bartholomaus, Ginny A. Catania, Niels J. Korsgaard, Kurt H. Kjær, Mathieu Morlighem, Brice Noël, Michiel van den Broeke, Leigh A. Stearns, **Emily L. Shroyer**, David A. Sutherland and Jonathan D. Nash, Inland thinning on the Greenland ice sheet controlled by outlet glacier geometry, *Nature Geosciences*, 10, 366–369, 2017. ^{β,χ}
 - Sanjiv Ramachandran, Amit Tandon, Jennifer Mackinnon, Andrew Lucas, Robert Pinkel, Amy Waterhouse, Jonathan Nash, **Emily Shroyer**, Amala Mahadevan, Robert Weller, J. Thomas Farrar, Submesoscale processes at shallow, salinity fronts, Observations from the Bay of Bengal during the winter monsoon, *J. Phys. Oceanogr.*, 48, 479–509, 2018, <https://doi.org/10.1175/JPO-D-16-0283.1>^ε
 - Aurelie Moulin, James Moum, and **Emily Shroyer**, Evolution of turbulence in the diurnal warm layer, *J. Phys. Oceanogr.*, 48, 383–396, 2018, <https://doi.org/10.1175/JPO-D-17-0170.1>^{α,ε}
 - **Shroyer, Emily L.**, and Robert S. Pickart. "Pathways, timing, and evolution of Pacific winter water through Barrow Canyon." *Deep Sea Research Part II: Topical Studies in Oceanography* 162 (2019): 50–62.^{β,χ}
 - Catania G. A., Stearns, L. A., Sutherland, D. A., Fried, M. J., Bartholomaus, T. C., Morlighem, M., **Shroyer, E.**, Nash, J. (2018). Geometric controls on tidewater glacier retreat in central western Greenland. *Journal of Geophysical Research: Earth Surface*, 123, 2024–2038. <https://doi.org/10.1029/2017JF004499>.^{β,χ}
 - Carroll, D., Sutherland, D. A., Curry, B., Nash, J. D., **Shroyer, E. L.**, Catania, G. A., et al. (2018). Subannual and seasonal variability of Atlantic-origin waters in two adjacent west Greenland fjords. *Journal of Geophysical Research: Oceans*, 123, 6670–6687. <https://doi.org/10.1029/2018JC014278>.^{β,χ}
 - Thakur, Ritabrata, **Emily L. Shroyer**, Rama Govindarajan, J. Thomas Farrar, Robert A. Weller, and James N. Moum. "Seasonality and Buoyancy Suppression of Turbulence in the Bay of Bengal." *Geophysical Research Letters* 46, no. 8 (2019): 4346–4355.^{α,ε}
 - Sohn, Robert A., Karen Luttrell, **Emily Shroyer**, Christian Stranne, Robert N. Harris, and Julia E. Favorito. "Observations and Modeling of a Hydrothermal Plume in Yellowstone Lake." *Geophysical Research Letters* (2019).^α
 - Adams, K., MacKinnon, J., Lucas, A. J., Nash, J., **Shroyer, E.**, & Farrar, J. T. (2019). Multi-platform observations of small-scale lateral mixed layer variability in the northern Bay of Bengal. *Deep Sea Research Part II: Topical Studies in Oceanography*, 168, 104629.^{α,ε}
 - **Shroyer, Emily L.**, Arnold L. Gordon, Gualtiero Spiro Jaeger, Mara Freilich, Amy F. Waterhouse, J. Thomas Farrar, V. V. S. S. Sarma et al. "Upper layer thermohaline structure of the Bay of Bengal during the 2013 northeast monsoon." *Deep Sea Research Part II: Topical Studies in Oceanography* 172 (2020): 104630.^ε
 - Cullen, K. E., and **Emily L. Shroyer**. "Seasonality and interannual variability of the Sri Lanka dome." *Deep Sea Research Part II: Topical Studies in Oceanography* 168 (2019): 104642.^ε

- Fried, M. J., Carroll, D., Catania, G. A., Sutherland, D. A., Stearns, L. A., **Shroyer, E. L.**, & Nash, J. D. (2019). Distinct frontal ablation processes drive heterogeneous submarine terminus morphology. *Geophysical Research Letters*, 46(21), 12083-12091. ^{β,χ}
- Hughes, Kenneth G., James N. Moum, and **Emily L. Shroyer**. "Evolution of the velocity structure in the diurnal warm layer." *Journal of Physical Oceanography* 2020. ^{α,ε}
- Beaird, N. L., **E. L. Shroyer**, L. W. Juranek, B. Hales, and M. A. Goñi. "Nutrient-Rich Gravity Current Formed by Upwelling in Barrow Canyon: High-Resolution Observations." *Journal of Geophysical Research: Oceans* 125, no. 7 (2020): e2020JC016160. ^{α,χ,ε}

BOOK AND SPECIAL ISSUE CONTRIBUTIONS

- W. Williams, **E. Shroyer**, J. Kinney, M. Itoh, and W. Maslowski. (2014). *Shelf-break Exchange in the Bering, Chukchi and Beaufort Seas*. In J. Grebmeier and W. Maslowski (Eds.), *The Pacific Arctic Region*. Springer. ^{β,χ}
- **Shroyer E.L.**, Nash J.D., Waterhouse A.F., Moum J.N. (2018) Measuring Ocean Turbulence. In: Venkatesan R., Tandon A., D'Asaro E., Atman and M. (eds) *Observing the Oceans in Real Time*. Springer Oceanography. Springer. ^α
- Gordon, Arnold L., **Emily L. Shroyer**, Harindra JS Fernando, Amit Tandon, Manikandan Mathur, and Sinhalage Udaya Priyantha Jinadasa. "Introduction to" *Atmosphere-Ocean Dynamics of Bay of Bengal*." (2019): 104724. ^ε

AWARDS AND HONORS

- American Meteorological Society Nicholas P. Fofonoff Award 2017.
- Office of Naval Research, Young Investigator Award, 2015.
- Woods Hole Oceanographic Institution Postdoctoral Scholar 2009.
- Wayne V. Burt Award 2006 in Physical Oceanography, College of Oceanic and Atmospheric Studies, Oregon State University.
- Honorable Mention, NSF Graduate Research Fellowship, 2006.
- Physics Student of the Year 2000, University of Alaska, Fairbanks.

ACADEMIC PRESENTATIONS

- A. Moulin, J. Moum, E. Shroyer, Propagation of Freshwater Lenses as Buoyant Gravity Currents, *EGU 2020: Sharing Geosciences Online*, Invited Talk.
- Kerhalkar, S., Tandon, A., **Shroyer, E.**, Centurioni, L. R., Nash, J. D., MacKinnon, J. A., ... & Johnson, L. (2020, February). On the Sea Surface Temperature variability and mesoscale dispersion in the Bay of Bengal during 2015 and 2019 monsoon as tracked by drifters. In *Ocean Sciences Meeting 2020*. AGU.
- **Shroyer, Emily**, et al. The 2018 Monsoon Onset from Ship-based Measurements across the Air-Sea Interface. *Ocean Sciences Meeting 2020*. San Diego, California.
- Lekha, J. S., Sengupta, D., **Shroyer, E.**, & Tandon, A. (2020, February). Basin-scale Diapycnal Mixing Rates in the Bay of Bengal Inferred from Fresh water Balance. In *Ocean Sciences Meeting 2020*. AGU.
- Lucas, A. J., Farrar, J. T., **Shroyer, E.**, Schlosser, T. L., & Pinkel, R. (2020, February). Spatial variability of air-sea interaction in the Indian Summer

- Monsoon from multi-platform measurements. In *Ocean Sciences Meeting 2020*. AGU.
- Tandon, A., **Shroyer, E.**, Sengupta, D., Wijesekera, H. W., Fernando, H. J., Lucas, A. J., & Mahadevan, A. Monsoon Intra-seasonal oscillations in the Bay of Bengal. *Ocean Sciences Meeting 2020*. San Diego, California.
 - Hughes, Kenneth, Jim Moum, and **Emily L. Shroyer**. "Anisotropic Turbulence and Subsurface Heat Fluxes in the Diurnal Warm Layer." *Ocean Sciences Meeting 2020*. AGU, 2020.
 - Thakur, R., **Shroyer, E.**, Govindarajan, R., Farrar, J. T., & Moum, J. (2020, February). Diurnal Signal in Turbulence During SW Monsoon in the Bay of Bengal. In *Ocean Sciences Meeting 2020*. AGU.
 - **E. Shroyer**, *Invited Speaker*: Measuring Ocean Turbulence, Turbulence from Angstroms to light years, International Center for Theoretical Sciences, Bangalore, 2018.
 - **E. Shroyer**, *Invited Speaker*: Marine-terminating glaciers, connections between the ocean and the ice sheets, Gordon Research Conference Coastal Ocean Dynamics, 2017.
 - **E. Shroyer**, L. Padman, R. Samelson, A. Münchow, L. Stearns, *Oral Presentation*: Seasonal connections between Nares Strait and Petermann Glacier: Linking the sea ice, ocean, and ice shelf, International Symposium on Interactions of Ice Sheets and Glaciers with the Ocean, La Jolla, California, 2016.
 - **E. Shroyer**, A. Waterhouse, L. St. Laurent, J. Moum, R. Sharma, A. Mahadevan, H. Wijesekera, *Invited Poster*: Upper Ocean Response to Tropical Cyclones in the Bay of Bengal, Ocean Sciences, New Orleans, 2016.
 - A. Moulin, J. Moum, **E. Shroyer**, *Oral Presentation*: New Observations of the Slippery Near-Surface Layer in the Equatorial Indian Ocean, Ocean Sciences, New Orleans, 2016.
 - K. Cullen and **E. Shroyer**, *Oral Presentation*: Development of the Sri Lanka Dome and Links to Air-sea Interactions, Ocean Sciences, New Orleans, 2016.
 - D. Carroll, D. Sutherland, J. Nash, **E. Shroyer**, L. De Steur, G. Catania, L. Stearns, *Oral Presentation*: The Impact of Fjord-Glacier Geometry on Circulation and Renewal in Tidewater Glacier Fjords, Ocean Sciences, New Orleans, 2016.
 - L. Stearns, S. Shankar, L. Byers, D. Sutherland, **E. Shroyer**, J. Nash, G. Catania, C. J. van der Veen, *Oral Presentation*: Quantification of calving rates and iceberg size distribution in West Greenland, Ocean Sciences, New Orleans, 2016.
 - D. Sutherland, L. de Steur, J. Nash, **E. Shroyer**, J. Mickett, *Poster*: Observed Hydrographic Variability Connecting the Continental Shelf to the Marine-Terminating Glaciers of Uummannaq Bay, West Greenland, Ocean Sciences, New Orleans, 2016.
 - R. Weller, J. T. Farrar, J. Moum, **E. Shroyer**, D. Sengupta, M. Ravichandran, R. Venkatsen, *Oral Presentation*: A Time Series View of Surface Forcing and Upper Ocean Variability in the northern Bay of Bengal, Ocean Sciences, New Orleans, 2016.
 - J. Nash, J. MacKinnon, A. Pickering, **E. Shroyer**, A. Lucas, A. Tandon, A. Mahadevan, D. Sengupta, K. Tennyson, *Oral Presentation*, Instability of thin, freshwater layers in the Bay of Bengal, Ocean Sciences: New Orleans, 2016.

- A. Lucas, D. Sengupta, E. D'Asaro, J. Nash, **E. Shroyer**, A. Mahadevan, A. Tandon, J. MacKinnon, R. Pinkel, *Oral Presentation: Subduction and Restratification Along an Eddy Edge: The Role of Ekman Dynamics and Submesoscale Processes*, Ocean Sciences, New Orleans, 2016.
- G. Spiro Jaeger, A. Mahadevan, **E. Shroyer**, *Oral Presentation: Temperature response of a salinity stratified ocean to air-sea heat fluxes*, Ocean Sciences, New Orleans, 2016.
- S. Ramachandran, A. Tandon, J. MacKinnon, A. Waterhouse, A. Lucas, R. Pinkel, J. Nash, **E. Shroyer**, A. Mahadevan, R. Weller, J. Farrar, *Oral Presentation: Submesoscale instabilities in the Bay of Bengal: Results from frontal process studies during the winter monsoon*, New Orleans, 2016.
- A. Mahadevan, M. Omand, M. Freilich, **E. Shroyer**, V. Sarma, A. Lucas, R. Weller, *Oral Presentation: Distribution of Nitrate, Oxygen and Chlorophyll in the Bay of Bengal: Physical Constraints and Mechanisms for Vertical Transport*, Ocean Sciences, New Orleans, 2016.
- **E. Shroyer** and L. Stearns. *Oral Presentation: Linking fjord-glacier dynamics through an investigation of subglacial discharge in West Greenland*, NASA PARCA, Washington D.C., January 2015.
- **E. Shroyer**, C. M. Lee, A. Lucas, R. K. Shearman, C. M. Lee, L. St. Laurent, and H. Simmons L. St. Laurent. *Oral Presentation: Turbulent dissipation and small-scale shear in the Kuroshio Branch Current*, South China Sea Workshop, Woods Hole, MA, 2015.
- Timothy Bartholomaus, Ginny Catania, Leigh Stearns, Jake I. Walter, **Emily L. Shroyer**, Jonathan D. Nash, David Sutherland, *Invited Poster: Recurring, year-round, icequakes at a Greenland tidewater glacier*, AGU Fall 2015.
- G. Catania, M. Fried, T. Bartholomaus, D. Peters, D. Felikson, D. Carroll, D. Sutherland, L. Stearns, **E. Shroyer**, J. Nash, *Invited Oral Presentation: Spatio-temporal Variability in the Glacier-Ocean Boundary in Central West Greenland*, AGU Fall 2015.
- D. Sutherland, D. Carroll, J. Nash, **E. Shroyer**, J. Mickett, L. Stearns, M. Fried, T. Bartholomaus, G. Catania, *Invited Oral Presentation: Observed Spatial and Temporal Variability of Subglacial Discharge-Driven Plumes in Greenland's Outlet Glacial Fjords*, AGU Fall 2015.
- D. Carroll, D. Sutherland, T. Moon, B. Hudson, B. Noel, D. Felikson, G. Catania, J. Nash, **E. Shroyer**, T. Bartholomaus, L. Stearns, *Oral Presentation: Modeling Subglacial Meltwater Plumes across Greenland's Outlet Glaciers: Implications for Ice-Ocean Coupling in a Warming Climate*, AGU Fall 2015.
- Leigh A Stearns, Ginny A Catania, Timothy Bartholomaus, Dave Sutherland, Jonathan D Nash, **Emily Shroyer**, Logan C Byers, Mason Fried, Denis Felikson, Ryan T Walker and Dustin Carroll, *Oral Presentation: Patterns of Rapid Deceleration Observed at Two Tidewater Outlet Glaciers in West Greenland*, AGU Fall 2015.
- T. Bartholomaus, R. Walker, L. Stearns, M. Fahnestock, R. Cassotto, G. Catania, D. Felikson, M. Fried, D. Sutherland, J. Nash and **E. Shroyer**, *Invited Oral Presentation: High-resolution, terrestrial radar velocity observations and model results reveal a strong bed at stable, tidewater Rink Isbræ, West Greenland*, AGU Fall 2015.

- **E. Shroyer**, K. J. Benoit Bird, J. D. Nash, and J. N. Moum. *Oral Presentation*: Stratification and mixing regimes in biological thin layers over the Mid-Atlantic bight, Ocean Sciences, Honolulu, HI, 2014.
- **E. Shroyer**, R. K. Shearman, A. Lucas. *Invited Oral Presentation*: Nortek Aquadopp on Moving Platforms: Wirewalkers and Gliders, 2014 Nortek Symposium, Honolulu, HI.
- D. Sutherland, J. Nash, and **E. Shroyer**. *Oral Presentation*: The impact of icebergs on freshwater distribution and stratification in the subpolar North Atlantic Ocean, Ocean Sciences, Honolulu, HI, 2014.
- D. Carroll, D. Sutherland, **E. Shroyer**, and J. Nash. *Poster*: Using a coupled ocean and modeling approach to investigating buoyant plume structure in a Greenlandic outlet glacier fjord, Ocean Sciences, Honolulu, HI, 2014.
- A. Moulin, J. Moum, C. Ohlmann, and **E. Shroyer**. *Poster*: Observations of the diurnal warm layer during DYNAMO, Ocean Sciences, Honolulu, HI, 2014.
- A. Lucas, R. Pinkel, J. Nash, I. Fer, and **E. Shroyer**. *Oral Presentation*: Direct observations of upshelf evolution of bottom bores driven by the baroclinic M2 Tide, Ocean Sciences, Honolulu, HI, 2014.
- R. K. Shearman, C. M. Lee, L. St. Laurent, **E. L. Shroyer**, and H. Simmons. *Oral Presentation*: Observations of a Kuroshio Intrusion and Associated Mixing in the South China Sea, Ocean Sciences, Honolulu, HI, 2014.
- H. L. Simmons, L. C. St. Laurent, C. M. Lee, R. K. Shearman, and **E. L. Shroyer**. *Oral Presentation*: Submesoscale structure in the Northern South China Sea during late winter monsoon conditions, Ocean Sciences, Honolulu, HI, 2014.
- **E. Shroyer**, R. Samelson, A. Muenchow, L. Padman. *Poster*: Circulation within a high-resolution oceanic model of Nares Strait, AGU, San Francisco, CA, 2012.
- Jonathan Nash, **Emily Shroyer**, Sam Kelly, Jim Moum, Mark Inall, Tim Duda & Nicole Jones. *Oral Presentation*: A large-scale view of internal tide intermittency on continental margins, AGU, San Francisco, CA, 2012.
- **E.L. Shroyer**. *Poster*: Observations of large-amplitude mode-2 waves over the New Jersey shelf, Geophysical and Astrophysical Internal Waves, Les Houches France, February 2011.
- **E.L. Shroyer**, A. Plueddemann, and R. Pickart. *Oral Presentation*: International Polar Year Conference 2010, Oslo, Norway, Wind-driven transformation of the Alaskan Coastal Current in Barrow Canyon.
- **E.L. Shroyer**, J.D. Nash, and J.N. Moum. *Invited Oral Presentation*: AGU Ocean Sciences 2010, Energy, Mixing, and Vertical Heat Flux in Nonlinear Internal Waves over the New Jersey Continental Shelf.
- A. J. Plueddemann and **E. L. Shroyer**. *Poster*: AGU Ocean Sciences 2010, Coastal hydrography and volume transport offshore of Barrow, Alaska in summer.
- **E.L. Shroyer**, J.N. Moum, and J.D. Nash. *Oral Presentation*: ONR NLIWI Meeting 2009, The “life” cycle of NLIWs as seen from the R/V Oceanus.
- **E.L. Shroyer**, J.D. Nash, and J.N. Moum. *Poster*: PIMS Internal Wave Conference 2008, Energy Transformation within the NLIW field on the New Jersey shelf.
- **E.L. Shroyer**, J.N. Moum, and J.D. Nash. *Poster*: AGU Ocean Sciences 2008, Evolution of Shoaling Nonlinear Internal Waves over New Jersey’s Continental Shelf.

- **E.L. Shroyer**, J.N. Moum, and J.D. Nash. *Oral Presentation*: ONR NLIWI Meeting 2007, NLIW shoaling: Observations from the NLIWI on the New Jersey shelf.
- **E.L. Shroyer**, J.N. Moum, and J.D. Nash. *Poster*: AGU Ocean Sciences 2006: Observations of Bottom-Trapped Large Amplitude Nonlinear Internal Waves off Oregon.

INSTITUTION SEMINARS

- January 2020, NCPOR, Goa, India, High-resolution observations of an upwelled nutrient-rich dense gravity current in Barrow Canyon.
- January 2020, SAC ISRO, Ahmedabad, India, The Toga COARE Algorithm.
- November 2019, NRL, Stennis, MS, The 2018 Monsoon Onset in the Bay of Bengal
- October 2019, Oregon State University, Monsoons to Mixing- US, Indian, Sri Lankan Partnerships for Improved Understanding of the Monsoon
- May 2016, Woods Hole Oceanographic Institution, Petermann Glacier: Linking the sea ice, ocean, and ice shelf
- April 2016, Oregon State University, Petermann Glacier: Linking the sea ice, ocean, and ice shelf
- November 2014, Oregon State University, Comparing and contrasting two neighboring Greenlandic fjords: Rink Isbrae (Rink) and Kangerdlugssup Sermersua (KS)
- November 2013, University of Oregon, Geology Department Seminar, Stratification and Mixing Regimes in Oceanic Thin Layers
- October 2012, Oregon State University, Oceanic Circulation within a high-resolution model of Nares Strait
- March 2012, Oregon State University, Modeling of Oceanic Circulation within Nares Strait
- April 2011, Woods Hole Oceanographic Institution, Transformation of the^[SEP]Alaskan coastal current in Barrow Canyon.
- March 2011, Scripps Institution of Oceanography, Transformation of the^[SEP]Alaskan coastal current in Barrow Canyon
- March 2011, Naval Research Laboratory, Stennis, MS, Transformation of the^[SEP]Alaskan coastal current in Barrow Canyon.
- March 2011, University of Connecticut, Dynamics and Water Mass Properties of the Alaskan coastal current in the Chukchi Sea.
- November 2010, Coastal Ocean Fluid Dynamics Laboratory, Woods Hole Oceanographic Institution, Wind-driven Modification of the Alaskan Coastal Current.
- November 2010, University of Massachusetts, Dartmouth, Nonlinear Internal Waves on the Continental Shelf.
- November 2009, Woods Hole Oceanographic Institution, Nonlinear Internal Waves on the New Jersey Continental Shelf.
- January 2009, University of Alaska Fairbanks, Nonlinear Internal Waves on the New Jersey Continental Shelf.
- Guest Lecturer, College of Oceanic and Atmospheric Sciences, Math Preparatory Class, Nonlinear Internal Waves on the Continental Shelf.
- January 2007, Oregon State University, College of Oceanic and Atmospheric Sciences, Wave Shoaling on the New Jersey Shelf.

FUNDING

Dissipative processes over the Vietnam shelf and slope in the South China Sea
L. St. Laurent and E. Shroyer, Co-PI s; ONR; Award Period: 1/1/12 to 12/30/14
Person Months Per Year: 3.0 year 1; 3.0 year 2; 3.0 year 3; Total Amount: \$289,901

Physical Controls on ocean-terminating glacier variability in Central West Greenland
G. Catania, L. Stearns, R. Walker, D. Sutherland, J. Nash, and E. Shroyer; NASA; Award
Period: 1 Jan 2013 – 31 Dec 2015; Person Months Per Year: 1.0 year 1; 1.5 year 2; 2.0
year 3; Total Amount: \$447,802

Coll. Res.: Development of an Ice-Tethered Winch for the Seasonal Ice Zone
E. Shroyer and R. Krishfield, Co-PI s; NSF-OPP; Award Period: 10/1/12 to 9/30/14;
Person Months Per Year: 3.0 year 1; 3.0 year 2; Total Amount: \$122,707

Collaborative Research: Upper ocean heat flux in the Eurasian Basin: Oceanic
thermodynamic forcing contributing to Arctic ice loss (subcontract through Earth &
Space Research); E. Shroyer; Award Period: 7/15/13 to 3/31/16; Person Months Per
Year: 0; Total Amount: \$107,833.

SST Control by Subsurface Mixing during Indian Ocean Monsoons: 1-year Pilot Project
E. Shroyer and J. Moum; ONR; Award Period: 2/1/13 to 1/31/14; Person Months Per
Year: 2.0 per year; Total Amount: \$189,999

SST Control by Subsurface Mixing during Indian Ocean Monsoons; E. Shroyer and J.
Moum; ONR; Award Period: 2/1/14 to 1/31/18; Person Months Per Year: 2.0 per year;
Total Amount: \$752,919

Mixing in the Equatorial Atlantic's Cold Tongue, J. Moum and E. Shroyer; NSF-OCE;
Award Period: 08/01/14-07/31/19; Person Months Per Year: 0 year 1; 1 year 2; 1 year 3;
2 year 4; 2 year 5 Total Amount: \$1,500,000^[1]_{SEP}

Strong Three-Dimensionality in Nonlinear Internal Waves: Implications for Spatial
Coherency, Energy Distribution, and Mass Transport; E. Shroyer; ONR; Award Period:
6/1/2015- 5/31/2018 Person Months Per Year: 4.0 per year; Amount: \$503,525

Early Student Support for "SST Control by Subsurface Mixing during Indian Ocean
Monsoons; ONR; E. Shroyer; 4/1/2015-3/31/2017; Person Months Per Year: 0 per year;
\$161,826

The Sri Lanka Dome: Air-Sea Interaction in the Southern Bay Bengal; NASA; K. Cullen
(PhD Student); 10/1/2015-9/30/2018; Person Months Per Year: 0 per year; \$90,000

Cross-archipelago Gradients in Air-sea Interactions; ONR; J. Moum and E. Shroyer;
1/1/2016-12/31/2020; Person Months Per Year: 1-2 per year; \$1,276,037

Collaborative Research: Interleaving and mixing of North Pacific Tropical Water in the South China Sea; E. Shroyer and A. Lucas; 08/01/2016 – 07/31/2019 Person Months Per Year: 1-2 per year; \$144,615

Moored Mixing Measurements in PISTON; ONR; E. Shroyer and J. Moum; 7/2017-7/2018; Person Months Per Year: 0 per year; \$275,460

Flippin' ChiSOLO: Autonomous Turbulence Profiling of the Upper Ocean; ONR; J. Moum, E. Shroyer, D. Rudnick (Scripps), 10/2017-9/2019; Person Months Per Year: 0 per year, \$297,573 (OSU)

Distributed Measurements of Mixing in NISKINE; ONR; J. Moum and E. Shroyer; 6/2018-5/2023; \$707,060

Physical impacts on late season productivity in a changing Arctic ; NSF-OPP; E. Shroyer and N. Beaird; 8/1/2017-7/31/2019; \$407,939

Upper-Ocean Heat Content and Subsurface Fluxes as Controls on Active-Break Cycles during the Indian Ocean Monsoon ; ONR; E. Shroyer and J. Moum; 7/2017-6/2022; Person Months Per Year: 3 per year; \$862,616

Eyes at the Front Ocean-ice Modeling Component; Heising Simons Foundation; Emily Shroyer; 04/01/2019-03/31/2023; Person Months Per Year: 2-3 per year; \$463,103

Relating SSHA-derived eddy diffusivity to in-situ estimates from microstructure and ECCO; Emily Shroyer and Jonathan Nash (Deepak Cherian Lead PI at UCAR) ; 12/17/2019-07/31/2022 Person Months Per Year: 1 per year; \$140,460

Collaborative Research: Cold Tongue Mixing; National Science Foundation, Moum, Hughes, Cherian, Shroyer, and Gibson, \$2,105,989.

TEACHING

Course No.	Title	Credits	Term
OEAS 530	The Fluid Earth	4	F12
OEAS 530	The Fluid Earth	4	F13
OEAS 530	The Fluid Earth	4	F14
OEAS 530	The Fluid Earth	4	F15
OEAS 530	The Fluid Earth	4	F17
OEAS 530	The Fluid Earth	4	F19
OEAS 530	The Fluid Earth	4	F20
OEAS 4/5/607	CEOAS Student Seminar	1	W15
OEAS 4/5/607	CEOAS Student Seminar	1	S16
OEAS 4/5/607	CEOAS Student Seminar	1	F16
OC 681	Geophysical Waves	4	W17
OC 681	Geophysical Waves	4	W19
OC 681	Geophysical Waves	4	W21

OC 515	Oregon Coast Math Camp	3	F16
OC 515	Oregon Coast Math Camp	3	F17
OC 515	Oregon Coast Math Camp	3	F18
OC 515	Oregon Coast Math Camp	3	F19
OEAS 500	Cascadia (Co-Teacher)	3	F20

ADVISING

Undergraduate Students

- Matthew Ball, B.S. Physics, 2018, Honors Thesis advisor.

Graduate Students

- Johna Winters, M.S. Candidate, Marine Resource Management.
- Kerstin Cullen, Ph.D. 2020, Physical Oceanography, Oregon State University, (NASA NESSF Award)
- Jennifer Moskel, M.S. 2019, Marine Resource Management.
- Kevin Tennyson, M.S. 2016, Physical Oceanography, Oregon State University
- Aurelie Moulin, Ph.D., 2016, Physical Oceanography, Oregon State University, co-advisor with J. Moum.
- Allison Einolf, M.S. 2016, Physical Oceanography, Oregon State University

Postdoctoral Scholars

- Kenneth Hughes (co-advising), 2018-present
- Deepak Cherian, 2017-2019
- Nicolas Beaird, 2017-2019
- Rebecca Jackson, 2017

STUDENT COMMITTEE MEMBERSHIP

- Lee Collins (M.S. 2013)
- Elizabeth McHugh (M.S. 2013)
- Dave Cade (M.S. 2014)
- Saskia Madlener (M.S. 2014)
- Alejandra Sanchez (Ph.D. 2019)
- Dustin Carroll (UO, Ph.D. 2017)
- Katie Verlinden (Ph.D. 2018)
- Jennifer Thomas (Ph.D. 2019)
- Atul Dhage (Ph.D. 2019)
- Gualtiero Spiro Jaeger (MIT, Ph.D. 2019)
- Briana Phillips (M.S., 2019)
- Anna Simpson (current Ph.d.)
- GCR Representative for 15+ Students

UNIVERSITY COMMITTEE MEMBERSHIP

- 2019-present Discipline Group Head for Physics of the Oceans and Atmospheres, CEOAS
- 2020 Open and Sustainable Scholarly Communication Advisory Committee for the Library
- 2017 Oregon State University Faculty Senate Library Committee (Chair)

- 2016 Oregon State University Faculty Senate Library Committee
- 2015-2016 Oregon State University Budget and Fiscal Planning Committee
- 2015 CEOAS Promotion & Tenure Committee Member
- 2015 Search Committee for Marine Technician Superintendent
- 2013-2015 Graduate Program Committee Member, CEOAS
- 2013-2014 Peer Review of Teaching Committee Member, CEOAS
- 2012 Search Committee for High-Latitude Hires within CEOAS

RESEARCH CRUISE EXPERIENCE

- Chief Scientist, *RV Sally Ride*, MISO-BOB collaboration focusing on air-sea interactions in the Bay of Bengal, 20 international science party members, Bay of Bengal, July 2019.
- Principal Investigator, *RV Thompson*, PISTON collaboration focusing on air-sea interactions in the Western Pacific, Chief Scientist: J. Moum, Western Pacific, October 2018.
- Chief Scientist, *RV Thompson*, MISO-BOB collaboration focusing on air-sea interactions in the Bay of Bengal, 25 international science party members, Bay of Bengal, June 2018.
- Principal Investigator, *RV Oceanus*, ONR Inner Shelf collaboration focusing on coastal processes from the slope to inner shelf, Chief Scientist: J. Moum, Oregon Shelf, May 2017.
- Principal Investigator, *RV Revelle*, ASIRI/EBOB/OMM collaboration focusing on air-sea interactions in the Bay of Bengal, Chief Scientist: J. Nash and A. Tandon, Bay of Bengal, September-October 2015.
- Co- Chief Scientist, *R/V Sanna*, Coastal Circulation in West Central Greenland Outlet Fjords, Uummannaq, Greenland, 8 science party members, July 2014.
- Co- Chief Scientist, *RV Revelle*, ASIRI/EBOB/OMM collaboration focusing on air-sea interactions in the Bay of Bengal, Chief Scientist: A. Lucas, Bay of Bengal, June 2014.
- Principal Investigator, *RV Revelle*, Submesoscale Processes in the South China Sea, Chief Scientist: C. Lee, South China Sea, January/February 2014.
- Chief Scientist, *RV Revelle*, ASIRI/EBOB/OMM collaboration focusing on air-sea interactions in the Bay of Bengal, 29 international science party members, Bay of Bengal, December 2013.
- Co- Chief Scientist, *R/V Sanna*, Coastal Circulation in West Central Greenland Outlet Fjords, Uummannaq, Greenland, 8 science party members, September 2013.
- Principal Investigator, *RV Revelle*, Submesoscale Processes in the South China Sea, Chief Scientist: C. Lee, South China Sea, May 2013.
- Science Crew *USCGC Healy*, lead turbulent microstructure component of data acquisition, Shelf-Basin Interaction Program, Chief Scientist: R. Pickart, Beaufort Shelf, September 2010.
- Science Crew *USCGC Healy*, Shelf-Basin Interaction Program focused on Coastal Processes in the Chukchi and Beaufort Seas, Chief Scientist: R. Pickart, Beaufort Shelf, July 2009.
- Science Crew *R/V Wecoma*, Topographic Form Drag over Stonewall Bank, Chief Scientist: J. Moum, Oregon Coast, June 2008.

- Science Crew *R/V Wecoma*, Dye release experiment on coastal circulation and ocean mixing off Oregon, Chief Scientist: M. Levine, Oregon Coast, June 2008.
- Science Crew *R/V Point Sur*, Test Cruise for Moored Hydrographic Profiler, Chief Scientist: J. Barth, Oregon Coast, June 2007.
- Science Crew *R/V Oceanus*, Nonlinear Internal Wave Initiative focused on measurement of coastal nonlinear internal wave-driven ocean mixing, Chief Scientist: J. Moum, New Jersey Shelf, August 2006.

SYNERGISTIC ACTIVITIES

- 2016-2019 Mentor for the MPOWIR Program (Mentoring Physical Oceanography Women to Increase Retention)
- co-lead/organized/taught 2019/2020 Air-Sea Interaction Workshops for US and Indian graduate students (International Centre for Theoretical Physics, <https://www.icts.res.in/discussion-meeting/ommbob2019> & Indian Space Application Centre, ISRO 2020)
- co-organized/taught in 2016-2019 Coastal Ocean Environmental Summer School in Ghana (COESSING, Ghana Summer School in Coastal Oceanography, <https://coessing.org/>)
- co-taught the Partnership for Observations of the Global Ocean, Centre of Excellence, Physical Oceanography Module, St. George, Bermuda, 2010, 2011, and 2012 (<http://www.ocean-partners.org/centre-of-excellence>)
- co-taught the Partnership in Education Program, Physical Oceanography Module, Woods Hole, MA, 2010 and 2011 (<http://www.woodsholediversity.org/pep/>)
- Guest Editor, Special Issue Deep Sea Research, Atmosphere-Ocean Dynamics of Bay of Bengal (DSR II, Volume 168/172)

WORKSHOPS AND CONFERENCES

- Organizer, January 2020, Air-sea interactions in the Bay of Bengal Workshop, Space Application Centre, ISRO, Ahmedabad, India.
- Organizer, December 2019, PISTON and MISOBOD Discussion Meetings, Portland, Oregon.
- Organizer, February 2019, Air-sea interactions in the Bay of Bengal Workshop, International Centre for Theoretical Sciences, Bengaluru, India.
- Organizer, ASIRI May 2016 Spring Workshop in Corvallis, Oregon
- Co-Chair, The Ocean's Energy Cascade: Measuring and Modeling of Instabilities, Internal Waves, and Turbulence at the Submesoscale and Smaller, Ocean Sciences, New Orleans, LA, 2016.
- Co-Chair, Measuring and modeling internal waves and the turbulence cascade: a tribute to David Tang, Ocean Sciences, Honolulu, HI, 2014.
- Co-Organizer, ASIRI Workshop, Scripps Institution of Oceanography, San Diego, CA, June 2013.
- COMPASS Communications Workshop, October 2012, Oregon State University.
- Geophysical and Astrophysical Internal Waves, Les Houches France, February 2011.
- Association of Early Career Polar Scientist IPY Workshop, June 2010.
- Pattullo Conference, MPOWIR, May 2010.
- Pacific Institute for Mathematical Sciences (PIMS) Internal Wave Conference, October 2008.

OTHER EMPLOYMENT

- Graduate Research Associate, College of Ocean and Atmospheric Sciences, Oregon State University, 2004-2009.
- Teaching Assistant for Physical Oceanography (OC430/530), Professors: M. Levine and K. Sherman, Fall 2005.
- Substitute Teacher, North Star Borough, Fairbanks, Alaska, January-May 2001.
- Math and Science Tutor, University of Alaska, Fairbanks, 1998-2000.
- Physics Research Assistant, University of Memphis, 1997.