Hilde Oliver

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Updated 2021-07-23

EDUCATION

2019 **Ph.D.**, Marine Sciences
University of Georgia

2014 **B.S.**, Mathematics (emphasis in Applied Mathematics, minor in French
University of South Carolina
Honors from the South Carolina Honors College, *magna cum laude*

SELECTED EXPERIENCE

Starting 2021 **Assistant Scientist** (tenure-track)
Woods Hole Oceanographic Institution
Department of Applied Ocean Physics and Engineering

2019 - present **Postdoctoral Scholar**
Woods Hole Oceanographic Institution
Department of Applied Ocean Physics and Engineering
Coadvised by Dennis J. McGillicuddy, Jr. and Weifeng Gordon Zhang

2014 - 2019 **Graduate Research Assistant**
University of Georgia
Department of Marine Sciences
Coadvised by Patricia L. Yager and Renato M. Castelao

2011 - 2014 **Research Assistant**
University of South Carolina
Department of Biological Sciences
Advised by David S. Wethey

RESEARCH INTERESTS

Bio-physical interactions. Effects of melting ice sheets and sea ice on ocean physics and biogeochemistry. Fjord dynamics. Deep ocean-shelf interactions. Frontal systems. Iron cycling. Coupled physical-biogeochemical numerical modeling. Plankton imaging.

REFEREED PUBLICATIONS

[12] **Oliver, H.**, Zhang, W. G., Archibald, K. M., Hirzel, A. J., Smith, W. O., Sosik, H. M., Stanley, R. H. R., & McGillicuddy, D. J. (Submitted). Ephemeral surface chlorophyll enhancement at the New England shelf break driven by Ekman restratification.

[11] **Oliver, H.**, Zhang, W. G., Smith, W. O., Alatalo, P., Chappell, P. D., Hirzel, A. J., Selden, C. R., Sosik, H. M., Stanley, R. H. R., Zhu, Y., & McGillicuddy, D. J. (2021). Diatom Hotspots Driven by Western Boundary Current Instability. *Geophysical Research Letters*, 48, e2020GL091943. https://doi.org/10.1029/2020GL091943

[10] Smith, W. O., Zhang, W. G., Hirzel, A., Stanley, R. H. R., Meyer, M., Sosik, H. M., Alatalo, P., **Oliver, H.**, Sandwith, Z., Crockford, T., Peacock, E., Mehta, A., & McGillicuddy, D. J. (2021). A regional, early spring bloom of Phaeocystis pouchetii on the New England continental shelf. A Regional, Early Spring Bloom of Phaeocystis pouchetii on the New England Continental Shelf. *Journal of Geophysical Research: Oceans*, 126(2), 2020JC016856. https://doi.org/10.1029/2020JC016856

[9] **Oliver, H.**, Castelao, R. M., Wang, C., & Yager, P. L. (2020). Meltwater-Enhanced Nutrient Export from Greenland's Glacial Fjords: A Sensitivity Analysis. *Journal of Geophysical Research: Oceans*, 125(7), 1–18. https://doi.org/10.1029/2020JC016185

[8] Castelao, R. M., Luo, H., **Oliver, H.**, Rennermalm, Å. K., Tedesco, M., Bracco, A., Yager, P. L., Mote, T. L., & Medeiros, P. M. (2019), Controls on the transport of meltwater from the southern Greenland ice sheet in the Labrador Sea. *Journal of Geophysical Research: Oceans*, 124, 3551–3560. https://doi.org/10.1029/2019JC015159

[7] **Oliver H.**, St-Laurent, P., Sherrell, R. M., & Yager, P. L. (2019). Modeling iron and light controls on the summer Phaeocystis antarctica bloom in the Amundsen Sea Polynya. *Global Biogeochemical Cycles*, 33, 570-596. https://doi.org/10.1029/2018GB006168

[6] St-Laurent, P., Yager, P. L., Sherrell, R. M., **Oliver, H.**, Dinniman, M. S., & Stammerjohn, S. E. (2019). Modeling the Seasonal Cycle of Iron and Carbon Fluxes in the Amundsen Sea Polynya, Antarctica. *Journal of Geophysical Research: Oceans*, 124(3), 1544–1565. https://doi.org/10.1029/2018JC014773

[5] Rognstad, R. L., Wethey, D. S., **Oliver, H.**, & Hilbish, T. J. (2018). Connectivity modeling and graph theory analysis predict recolonization in transient populations. *Journal of Marine Systems*, 183, 13–22. https://doi.org/10.1016/j.jmarsys.2018.03.002

[4] **Oliver, H.**, Luo, H., Castelao, R. M., van Dijken, G. L., Mattingly, K. S., Rosen, J. J., Mote, T. L., Arrigo, K. R., Rennermalm, Å. K., Tedesco M., & Yager, P. L. (2018). Exploring the Potential Impact of Greenland Meltwater on Stratification, Photosynthetically Active Radiation, and Primary Production in the Labrador Sea. *Journal of Geophysical Research: Oceans*, 2570–2591. https://doi.org/10.1002/2018JC013802

[3] Arrigo, K. R., van Dijken, G. L., Castelao, R. M., Luo, H., Rennermalm, Å. K., Tedesco, M., Mote, T. L., **Oliver H.**, & Yager, P. L. (2017). Melting glaciers stimulate large summer phytoplankton blooms in southwest Greenland waters. *Geophysical Research Letters*, 44, 6278–6285. https://doi.org/10.1002/2017GL073583

[2] **Oliver, H.**, Rognstad, R., & Wethey, D. (2015). Using meteorological reanalysis data for multi-decadal hindcasts of larval connectivity in the coastal ocean. *Marine Ecology Progress Series*, 530, 47–62. https://doi.org/10.3354/meps11300

[1] Deiterding, R., Glowinski, R., **Oliver, H.**, & Poole, S. (2013). A Reliable Split-Step Fourier Method for the Propagation Equation of Ultra-Fast Pulses in Single-Mode Optical Fibers. *Journal of Lightwave Technology*, 31(12), 2008–2017. https://doi.org/10.1109/JLT.2013.2262654

OTHER PUBLICATIONS

Clarke, A., L. S. Peck, and **H. Oliver** (2019), Polar Ecosystems, in Encyclopedia of Ocean Sciences (Third Edition), edited by J. K. Cochran, H. J. Bokuniewicz, and P. L. Yager, pp. 771–777, Academic Press, Oxford.

HONORS AND AWARDS

2019-2021	WHOI Weston Howland Jr. Postdoctoral Scholar Award
2019	UGA Marine Sciences Departmental Graduate Research Award
2019	AGU Outstanding Student Presentation Award
2015-2019	NSF Graduate Research Fellowship
2014-2019	UGA Presidential Graduate Fellowship
2013, 2014	Jeong S. Yang Award for Excellence in Undergraduate Mathematics
2013	Phi Beta Kappa

SEMINARS

Upcoming	UMass Dartmouth School for Marine Science & Technology "Diatom Hotspots Driven by Western Boundary Current Instability."

Apr. 2021	WHOI Department of Applied Ocean Physics & Engineering "Diatom Hotspots Driven by Western Boundary Current Instability."
Nov. 2020	WHOI Polar Ecology Group "How does discharge from the Greenland Ice Sheet affect coastal primary productivity?"
Feb. 2020	WHOI Department of Applied Ocean Physics & Engineering "Modeling the impacts of Greenland glacial runoff on phytoplankton light and nutrient limitation."
Jun. 2019	UGA Department of Marine Sciences "Physical controls on light and nutrients in coastal regions receiving large fluxes of glacial meltwater."

SYNERGISTIC ACTIVITIES

WHOI Committees: Women's Committee (2019-present), Committee on Diversity and Inclusion (2020-present)

Community Committees and Working Groups: Ocean Observatories Initiative BGC Sensor Working Group (2021-2022), Ocean Observatories Initiative Innovations Lab, Phase II (2021), Southeastern Biogeochemistry Symposium (SBS) Graduate Student Steering Committee (2016-2017)

Session Co-Chair: Ocean Sciences Meeting 2022: "Shelf-break frontal dynamics: integrating biological, biogeochemical and physical observations for a holistic view of ecosystem function"

Reviewer: Nature Climate Change, Frontiers in Marine Science, Geophysical Research Letters, Biogeosciences, Journal of Plankton Research, Journal of Geophysical Research: Oceans, The National Fund for Scientific and Technological Development (FONDECYT, Government of Chile)

TEACHING AND MENTORING

Mentoring

Summer 2021	Engineering intern mentor, WHOI
Summer 2019	Undergraduate student research mentor, UGA
2015 - 2019	Undergraduate student mentor, UGA Women in Science (WiSci)

Guest lectures

Spring 2019	Primary productivity, Marine Biology (undergraduate), UGA
Spring 2019	Antarctic Ecosystems (Virtual), Intro. to the Marine Environment (undergraduate), UGA
Spring 2019	Low frequency variability, Migrations in the Sea (undergraduate), UGA
Fall 2018	Trace metals in the sea, Chemical and Biological Oceanography (undergraduate), UGA
Fall 2018	El Niño, Introduction to the Marine Environment (undergraduate), UGA

OCEANOGRAPHIC RESEARCH CRUISES

2020-2021	R/V Roger Revelle, 60 days Video Plankton Recorder operations Project: Biogeochemical and Physical Conditioning of Sub-Antarctic Mode Water in the Southern Ocean Chief Scientist: Barney Balch (Bigelow)
2019	R/V Thomas G. Thompson, 13 days CTD profiling and real-time data analysis in the Middle Atlantic Bight Project: Shelfbreak Productivity Interdisciplinary Research Operation at the Pioneer Array (SPIROPA) Chief Scientist: Dennis McGillicuddy (WHOI)

2019	R/V Ronald H. Brown, 13 days CTD profiling and real-time data analysis in the Middle-Atlantic Bight Project: Shelfbreak Productivity Interdisciplinary Research Operation at the Pioneer Array (SPIROPA) Chief Scientist: Dennis McGillicuddy (WHOI)
2014	R/V Nathaniel B. Palmer, 32 days CTD profiling and microscopy near the West Antarctic Peninsula Project: Adaptive Responses of Phaeocystis populations in Antarctic ecosystems (Phantastic II) Chief Scientist: Kevin Arrigo (Stanford)

OUTREACH

2019 - present	K-12 outreach with Skype-a-scientist
2018 - 2019	Program Director, Athens Science Café
2016 - 2019	Programming Board Member, Athens Science Café
2016 - 2019	Programming Board Member, Athens Science Café
2016 - 2018	Vice President of Marketing and Social Media, Athens Science Café
2016 - 2018	Associate Editor-in-Chief, Athens Science Observer
2016	Assistant Editor, Athens Science Observer
2016	Outreach to 4th graders at Montgomery Elementary School, Atlanta, GA
2015	Outreach to K-2nd graders at Malcom Bridge Elementary School, Bogart GA
2015	Outreach to 9th graders at Oak Ridge High School, Oak Ridge, TN

CONTRIBUTED ABSTRACTS

Dec. 2020	**Oliver, H.**, Zhang, W. G., Smith, W. O., Alatalo, P., Chappell, P. D., Hirzel, A., Packard, G., Poole, J., Selden, C. R., Sosik, H. M., Stanley, R. H. R., Zhu, Y., McGillicuddy, D. J. "Western boundary current instability gives rise to extraordinary subsurface diatom blooms in the Middle Atlantic Bight slope sea." Poster presentation, Abstract #714713. American Geophysical Union, Annual Meeting, Virtual.
Feb. 2020	**Oliver, H.**, Castelao, R. M., Wang, C., Yager, P. L. "A sensitivity analysis to determine conditions necessary for meltwater- enhanced nutrient export from Greenland's glacial fjords." Oral presentation. Ocean Sciences Meeting, San Diego, CA.
Mar. 2019	**Oliver, H.**, Castelao, R. M., Yager, P. L. "Modeling meltwater-enhanced nutrient export from Greenland's glacial fjords." Poster. Gordon Research Conference for Polar Marine Science, Tuscany, Italy.
Dec. 2018	**Oliver, H.**, St-Laurent, P., Sherrell, R. M., Yager, P. L. "Controls on summer phytoplankton blooms in a highly productive Antarctic coastal polynya." Oral presentation, Abstract #OS34B-06. American Geophysical Union, Annual Meeting, Washington D.C. **Outstanding Student Presentation Award winner, Ocean Sciences section**.
Oct. 2018	Yager, P. L., St-Laurent, P., Sherrell, R. M., **Oliver, H.**, Dinniman, M., Stammerjohn, S. High resolution model illustrates how melting ice impacts coastal carbon cycle. West Antarctic Ice Sheet Initiative - Annual Meeting. Stony Point, New York.
Jun. 2018	**Oliver, H.**, St-Laurent, P., Sherrell, R. M., Yager, P. L. "Does light or iron control the Amundsen Sea Polynya phytoplankton bloom?" Poster. Ocean Carbon and Biogeochemistry Summer Workshop, Woods Hole, MA.
Feb. 2018	**Oliver, H.**, St-Laurent, P., Sherrell, R. M., Yager, P. L. "What controls the massive phytoplankton bloom in the Amundsen Sea Polynya?" Poster, Abstract #HE14B-2850. Ocean Sciences Meeting, Portland, OR.

Aug. 2017 **Oliver, H.**, St-Laurent, P., Sherrell, R. M., Yager, P. L. "Modeling physical and biological controls on phytoplankton blooms in the Amundsen Sea Polynya." Poster. Goldschmidt Conference, Paris, France.

Mar. 2017 **Oliver, H.**, St-Laurent, P., Sherrell, R. M., Yager, P. L. "Controls on phytoplankton blooms in an Antarctic coastal polynya." Poster. Southeastern Biogeochemistry Symposium, Athens, GA.

Mar. 2017 **Oliver, H.**, St-Laurent, P., Sherrell, R. M., Yager, P. L. "What makes a bloom in the Amundsen Sea Polynya? A 1-D biogeochemical modeling perspective." Poster. Gordon Research Conference for Polar Marine Science, Ventura, CA.

Mar. 2017 Arrigo, K. R., van Dijken, G., Castelao, R. M., Luo, H., Rennermalm, A., Tedesco, M., Mote, T., **Oliver, H.**, Yager, P. L. "Melting glaciers stimulate large summer phytoplankton blooms in southwest Greenland waters." Poster. Gordon Research Conference for Polar Marine Science, Ventura, CA.

Dec. 2016 **Oliver, H.**, Luo, H., Castelao, R. M., van Dijken, G., Mattingly, K., Rosen, J., Mote, T., Arrigo, K. R., Rennermalm, A., Tedesco, M., Yager, P. L. "Extreme surface melting of the Greenland Ice Sheet increases growth potential for light-limited phytoplankton in the Labrador Sea." Oral presentation. American Geophysical Union, Annual Meeting, San Francisco, CA.

Oct. 2016 Yager, P. L., St-Laurent, P., Sherrell, R., **Oliver, H.**, Dinniman, M., Stammerjohn, S. "Melting ice enhances coastal biological productivity." West Antarctic Ice Sheet (WAIS) Workshop, Sterling, VA.

Sep. 2016 Mote, T., Castelao, R., Yager, P. L., Luo, H., **Oliver, H**/, Mattingly, K., Tedesco, M., Rennermalm, A., Arrigo, K. R. "The Impact of Extreme Atmospheric Circulation and Runoff on Ocean Stratification and Productivity near Greenland." 16th EMS Annual Meeting & 11th European Conference on Applied Climatology (ECAC), Trieste, Italy.

Feb. 2016 **Oliver, H.**, Luo, H., Mattingly, K., Rosen, J., Yager, P. L. "Modeling the sensitivity of coastal ocean Primary Production to Extreme Melting of the Greenland Ice Sheet." Poster. Ocean Sciences Meeting, New Orleans, LA.

Jan. 2016 Yager, P. L., **Oliver, H.**, Castelao, R. M., Luo, H., Mattingly, K., Rosen, J., van Dijken, G., Rennermalm, A., Tedesco, M., Mote, T. "Meltwater impacts on coastal biological productivity - models and observations for SW Greenland." PARCA. Greenbelt, MD.

Dec. 2015 Yager, P. L., **Oliver, H.**, Sherrell, R., Stammerjohn, S., St-Laurent, P., Hofmann, E., Mote, T., Tedesco, M., Rennermalm, A. K., Castelao, R. M. "Ice sheet meltwater impacts on biological productivity in high-latitude coastal zones - observations and models for the west Antarctic and southwest Greenland." Poster. AGU Fall Meeting, San Francisco, CA.

Nov. 2015 **Oliver, H.**, Castelao, R. M., Luo, H., Mattingly, K., Rosen, J., Yager, P. L. "Coastal Ocean Primary Production Sensitivities to Extreme Melting of the Greenland Ice Sheet." Poster. Rutgers Regional Climate Symposium, New Brunswick, NJ.

Jun. 2015 Mote, T. L., Rosen, J., Arrigo, K. R., Castelao, R. M., Luo, H., Moustafa, S. E., Noble, E., **Oliver, H.**, Rennermalm, Å. K., Tedesco, M., van Dijken, G. L., Yager, P. L. "From the Ice Sheet to the Sea: An Interdisciplinary Study of the Impact of Extreme Melt on Ocean Stratification and Productivity near West Greenland." Ilulissat Climate Days, Ilulissat, Greenland.

Mar. 2015 **Oliver, H.**, Castelao, R., Luo, H., Mote, T., Yager P. L. "Modeling the responses of primary production to extreme melting of the Greenland Ice Sheet." Poster. Gordon Research Conference for Polar Marine Science, Tuscany, Italy.

PROFESSIONAL SOCIETIES

2015 – present American Geophysical Union

2016 – present The Oceanography Society