HILDE OLIVER, Ph.D.

Department of Applied Ocean Physics and Engineering
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(Updated August 2020)

EXPERIENCE

2019 - present **Postdoctoral Scholar**
Woods Hole Oceanographic Institution, Woods Hole MA
Advisors: Dennis J. McGillicuddy, Jr. and Weifeng Gordon Zhang

EDUCATION

2014 - 2019 **Doctor of Philosophy.** Marine Sciences
University of Georgia
Advisors: Patricia L. Yager, Renato M. Castelao
Dissertation title: "Physical controls on light and nutrients in coastal regions receiving large fluxes of glacial meltwater"

2010 - 2014 **Bachelor of Science**. Mathematics (Emphasis: Applied Mathematics)
University of South Carolina
Minor: French. GPA: 3.94 (*Magna cum laude*)
- Honors thesis: "Using meteorological reanalysis data for multi-decadal hindcasts of larval connectivity in the coastal ocean."
- Thesis advisor: David S. Wethey

HONORS AND AWARDS

2019 - 2021 **Woods Hole Oceanographic Institution** Weston Howland Jr. Postdoctoral Scholar Award
2019 **UGA Department of Marine Sciences** Graduate Research Award
2019 **American Geophysical Union** Outstanding Student Presentation Award
2015 - 2020 **National Science Foundation** Graduate Research Fellowship
2014 **National Science Foundation** Antarctic Service Medal
2014 - 2019 **University of Georgia** Presidential Graduate Fellowship
2014 **University of South Carolina Department of Mathematics** Jeong S. Yang Award for Excellence in Undergraduate Mathematics
2013 **South Carolina Honors College** Science Undergraduate Research Fellowship (SURF Grant)
2013 **Phi Beta Kappa**
2012 **University of South Carolina** Magellan Scholar Research Fellowship

RESEARCH INTERESTS - Bio-physical interactions. Effects of melting ice sheets on ocean physics and biogeochemistry. Climate impacts on coastal ocean dynamics and resulting influence on marine biogeochemistry. Coupled physical-biogeochemical numerical modeling.

REFEREED PUBLICATIONS

[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

SUBMITTED

[1] **Oliver, H.**, Zhang, W. G., Smith, W. O., Alatalo, P., Chappell, P. D., Hirzel, A., Selden, C. R., Sosik, H. M., Stanley, R. H. R., Zhu, Y., & McGillicuddy, D. J. Extraordinary diatom blooms driven by western boundary current instability.

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.

GRANTS ($720,864 PENDING)

[2] (PI) **Oliver, H.**, Zhang, W.G., & McGillicuddy, D. J. Biological Impacts of Gulf Stream Intrusions onto the Continental Slope (BIG-MICS). NSF, $537,840, pending.

[1] (Co-I) Yager, P. L., Mote, T. L., Castelao, R. M., Medeiros, P. M., Rennermalm, Å. K., **Oliver, H.**, & McGillicuddy, D. J. Baffin Bay Ecosystems Influenced by Runoff from Greenland (BELUGA). NASA (subcontract), $183,024, pending.

PROFESSIONAL SERVICE

2020 – present	WHOI Committee on Diversity and Inclusion, Messaging and Implementation Working Group
2019 – present	Member, *WHOI Women's Committee*
2019 – present	Manuscript reviewer, *Nature Climate Change, Frontiers in Marine Science, Geophysical Research Letters, Biogeosciences, Journal of Plankton Research, Journal of Geophysical Research: Oceans*
2016 – 2017	Graduate Student Steering Committee Member, *2017 Southeastern Biogeochemistry Symposium (SBS)*

SYNERGISTIC AND EDUCATIONAL ACTIVITIES

2019	Outreach to nationwide K-12 classrooms, *Skype-a-scientist*
2018 - 2019	Program Director, *Athens Science Café* (athenssciencecafe.wordpress.com)
2016 - 2019	Programming Board Member, *Athens Science Café*
2015 - 2019	Mentor, *UGA Women in Science (WiSci)*
2016 - 2018	Vice President of Marketing and Social Media, *Athens Science Café*
2016 - 2018	Associate Editor-in-Chief, *Athens Science Observer* (www.athensscienceobserver.com)
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
2013	Calculus II Supplemental Instruction Leader, *University of South Carolina*
2013	Intern, *South Carolina Office of the Governor*

SEMINARS

2020	**WHOI Department of Applied Ocean Physics & Engineering**. "Modeling the impacts of Greenland glacial runoff on phytoplankton light and nutrient limitation." February 12, 2020.
2019	**UGA Department of Marine Sciences**. "Physical controls on light and nutrients in coastal regions receiving large fluxes of glacial meltwater." June 10, 2019.

FIELD RESEARCH/TRAINING

2019	R/V *Thomas G. Thompson*, 2 weeks CTD profiling and real-time data analysis in the mid-Atlantic bight

Project: Shelfbreak Productivity Interdisciplinary Research Operation at the Pioneer Array (SPIROPA)
Chief Scientist: Dennis McGillicuddy

2019 *NOAAS Ronald H. Brown*, 2 weeks
CTD profiling and real-time data analysis in the mid-Atlantic bight
Project: Shelfbreak Productivity Interdisciplinary Research Operation at the Pioneer Array (SPIROPA)
Chief Scientist: Dennis McGillicuddy

2014 *RVIB Nathaniel B. Palmer*, 4 weeks.
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 University)

2012, 2013 Rocky intertidal sampling near Brest, France, 2 weeks.
Supervised by David Wethey, Sarah Woodin (University of South Carolina)

2012 *Oak Ridge National Laboratory* Leadership Computing Facility, 8 weeks
Programming in R to automate analysis of supercomputer I/O data
Supervised by George Ostrouchov

2011 *Oak Ridge National Laboratory* Computational Mathematics Group, 8 weeks
Programming in Fortran to optimize the modeling of ultra-short digital pulses in optical communication fiber systems.
Supervised by Ralf Deiterding

CONTRIBUTED ABSTRACTS

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. February 2020.

Oliver H, Castelao RM, Yager PL. "Modeling meltwater-enhanced nutrient export from Greenland's glacial fjords." Poster. Gordon Research Conference for Polar Marine Science, Tuscany, Italy. March 2019.

Oliver H, St-Laurent P, Sherrell RM, Yager PL. "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.. December 2018. *Outstanding Student Presentation Award winner, Ocean Sciences section.*

Yager PL, St-Laurent P, **Oliver H**, Sherrell RM, Stammerjohn S, Dinniman M. "High-resolution ocean model illustrates how ice-sheet ocean interactions impact the biological pump of an Antarctic coastal polynya." Abstract #415135 (C12B-07). American Geophysical Union, Annual Meeting, Washington DC. December 2018.

Yager PL, St-Laurent P, Sherrell RM, **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. October 2018.

Oliver H, St-Laurent P, Sherrell RM, Yager PL. "Does light or iron control the Amundsen Sea Polynya phytoplankton bloom?" Poster. Ocean Carbon and Biogeochemistry Summer Workshop, Woods Hole, MA. June 2018.

Oliver H, St-Laurent P, Sherrell RM, Yager PL. "What controls the massive phytoplankton bloom in the Amundsen Sea Polynya?" Poster, Abstract #HE14B-2850. Ocean Sciences Meeting, Portland, OR. February 2018.

Oliver H, St-Laurent P, Sherrell RM, Yager PL. "Modeling physical and biological controls on phytoplankton blooms in the Amundsen Sea Polynya." Poster. Goldschmidt Conference, Paris, France. August 2017.

Oliver H, St-Laurent P, Sherrell RM, Yager PL. "Controls on phytoplankton blooms in an Antarctic coastal polynya." Poster. Southeastern Biogeochemistry Symposium, Athens, GA. March 2017.

Oliver H, St-Laurent P, Sherrell RM, Yager PL. "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. March 2017.

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

Oliver H, Luo H, Castelao RM, van Dijken G, Mattingly K, Rosen J, Mote T, Arrigo KR, Rennermalm A, Tedesco M, Yager PL. "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, December 2016.

Yager PL, 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, October 2016.

Mote T, Castelao R, Yager PL, Luo H, **Oliver H**, Mattingly K, Tedesco M, Rennermalm A, Arrigo KR. "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, September 2016.

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

Yager, PL, **Oliver H**, Castelao RM, Luo H, Mattingly K, Rosen J, van Dijken G, Rennermalm A, Tedesco M, and Mote T. Meltwater impacts on coastal biological productivity - models and observations for SW Greenland. 2016 PARCA Meeting. Greenbelt, Maryland. January 2016

Yager PL, **Oliver H**, Sherrell R, Stammerjohn S, St-Laurent P, Hofmann E, Mote T, Tedesco M, Rennermalm AK, Castelao RM. "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. December 2015.

Oliver H, Castelao RM, Luo H, Mattingly K, Rosen J, Yager PL. "Coastal Ocean Primary Production Sensitivities to Extreme Melting of the Greenland Ice Sheet." Poster. Rutgers Regional Climate Symposium, New Brunswick, NJ. November 2015.

Mote TL, Rosen J, Arrigo KR, Castelao RM, Luo H, SE Moustafa, Noble E, **Oliver H**, Rennermalm ÅK, Tedesco M, van Dijken GL, Yager PL. "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. June 2015.

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

Oliver H, Wethey DS. "Multi-decadal hindcasts of larval connectivity." Oral presentation. Office of Undergraduate Research Discovery Day, University of South Carolina, Columbia, SC. April 2014. *Awarded 2nd place oral presentation*.

Oliver H, Wethey DS. "Multi-decadal hindcasts of larval connectivity." Oral presentation. Benthic Ecology Meeting, University of North Florida, Jacksonville, FL. March 2014.

Oliver H, Wethey DS. "Larval transport modeling – how to choose the ocean model." Office of Undergraduate Research Discovery Day, University of South Carolina, Columbia, SC. April 2013.

Oliver H, Wethey DS. "Larval transport modeling – how to choose the ocean model." Poster. Benthic Ecology Meeting, Georgia Southern University, Savannah, GA. March 2013.

PROFESSIONAL SOCIETIES

2015 – present	American Geophysical Union (AGU)
2016 – present	The Oceanography Society (TOS)