Hilde Oliver

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EXPERIENCE

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

EDUCATION

Doctor of Philosophy, Marine Sciences 2014 - 2019
University of Georgia
Advisors: Patricia L. Yager and Renato M. Castelao

Bachelor of Science, Mathematics (Emphasis: Applied Mathematics) 2010 - 2014
University of South Carolina
Minor: French. GPA: 3.94 (Magna cum laude)
Thesis advisor: David S. Wethey

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. Deep ocean-shelf interactions. Frontal systems. Coupled physical-biogeochemical numerical modeling.

REFEREED PUBLICATIONS

[10] **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. (submitted). Diatom Hotspots Driven by Western Boundary Current Instability.

[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

Weston Howland Jr. Postdoctoral Scholar Award, Woods Hole Oceanographic Institution	2019-2021
University of Georgia Department of Marine Sciences Graduate Research Award	2019
American Geophysical Union Outstanding Student Presentation Award	2019
National Science Foundation Graduate Research Fellowship	2016-2019
University of Georgia Presidential Graduate Fellowship	2014-2019

GRANTS ($537,840 PENDING)

[1] (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.

SEMINARS

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

SERVICE

Proposal reviewer The National Fund for Scientific and Technological Development (FONDECYT, Government of Chile)	2020 - present
WHOI Committee on Diversity and Inclusion Messaging and Implementation Working Group member	2020 - present
WHOI Women's Committee Member	2019 - present
Manuscript reviewer Nature Climate Change, Frontiers in Marine Science, Geophysical Research Letters, Biogeosciences, Journal of Plankton Research, Journal of Geophysical Research: Oceans	2019 - present
Southeastern Biogeochemistry Symposium (SBS) Graduate Student Steering Committee Member	2016 - 2017

TEACHING AND MENTORING

Undergraduate student research mentor, Summer 2019

Guest lecturer on primary productivity, Spring 2019
Marine Biology (undergraduate), UGA

Online guest lecturer on Antarctic Ecosystems, Spring 2019
Introduction to the Marine Environment (undergraduate), UGA

Guest lecturer on low frequency variability, Spring 2019
Migrations in the Sea: From Larvae to Whales (undergraduate), UGA

Guest lecturer on trace metals in the sea, Fall 2018
Chemical and Biological Oceanography (undergraduate), UGA

Guest lecturer on El Niño, Fall 2018
Introduction to the Marine Environment (undergraduate), UGA

FIELDWORK

R/V Thomas G. Thompson, 2 weeks (2019)
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 (WHOI)

R/V Ronald H. Brown, 2 weeks (2019)
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 (WHOI)

RVIB Nathaniel B. Palmer, 4 weeks (2014)
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)

SYNERGISTIC AND EDUCATIONAL ACTIVITIES

Outreach to 1st graders in San Diego CA, Skype-a-scientist	2019
Program Director, Athens Science Café	2018 - 2019
Programming Board Member, Athens Science Café	2016 - 2019
Undergraduate Mentor, UGA Women in Science (WiSci)	2015 - 2019
Vice President of Marketing and Social Media, Athens Science Café	2016 - 2018
Associate Editor-in-Chief, Athens Science Observer	2016 - 2018
Assistant Editor, Athens Science Observer	2016
Outreach to 4th graders at Montgomery Elementary School, Atlanta, GA	2016
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	2015

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, 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. March 2019.

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.. December 2018. **Outstanding Student Presentation Award winner, Ocean Sciences section**.

Yager, P. L., St-Laurent, P., **Oliver, H.**, Sherrell, R. M., 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, 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. October 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. June 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. February 2018.

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. August 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. March 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. March 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. March 2017.

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, December 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, October 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, September 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. February 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. 2016 PARCA Meeting. Greenbelt, Maryland. January 2016

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. December 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. November 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. June 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. March 2015.

PROFESSIONAL SOCIETIES

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