

Adam T. Greer, PhD
Assistant Professor
University of Georgia
Skidaway Institute of Oceanography (SkIO)
10 Ocean Science Cir.
Savannah, GA 31411

912-598-2334
atgreer@uga.edu
<http://skio.uga.edu/greer>

Appointments

Assistant Professor, **University of Georgia**, Skidaway Institute of Oceanography
(December 2019 – present)

Assistant Research Professor, **University of Southern Mississippi** (July 2018 –
November 2019)

Postdoctoral Research Associate, **University of Southern Mississippi** (July 2015 –
June 2018)

Postdoctoral Research Associate, **University of Georgia** (November 2013 – July 2015)

Education

Ph.D., **University of Miami** – Marine Biology & Fisheries, Rosenstiel School of Marine
and Atmospheric Science 2013

Dissertation: “Fine-scale distributions of plankton and larval fishes: Implications for
predator-prey interactions near coastal oceanographic features”

B.A., **Vanderbilt University** – Department of Biological Sciences 2007
Ecology, Evolution, and Organismal Biology, *Cum Laude*

Research Interests:

Zooplankton ecology, biological oceanography, marine ecosystems, fish early life history,
food webs, trophic interactions, biophysical coupling, sampling technology, optics and
imaging, spatial ecology, ecological database design and management, citizen science

Research Skills:

Image analysis, data visualization and analysis, phytoplankton and zooplankton
taxonomy, microscopy, multivariate and spatial statistics, oceanographic
instrumentation (plankton nets, imaging, CTD, FlowCam), acoustics, agent-based
modeling, AAUS Scientific Diver, PADI Advanced Open Water Certified,
immunohistochemistry, paraffin and frozen sectioning

Software:

R, ImageJ, MATLAB, Java, WinBugs, FMMidwater, Python, SQL

Teaching and Mentoring

Graduate student advising: Kyle Aaron (Fall 2020-Fall 2022), Severen Brown (non-
thesis, Fall 2020-Spring 2022), Taylor Kilgore (non-thesis, Fall 2021-Spring 2023),
Patrick Duffy (Spring 2021-present), Grace Mann (Fall 2023-present)

Postdoc advising: Laura Treible (June 2020-December 2022)

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PhD and Masters student committee: Alexis Hagemeyer (University of South Alabama), Lisa Olenderski (non-thesis, University of Georgia), Lucy Quirk (University of Georgia), Emily Gipson (University of Georgia).

Undergraduate and Graduate courses taught (University of Georgia):

Biological Oceanographic Processes (co-teaching with Amanda Spivak, Fall 2023 – 17 students)

Marine Policy (co-teaching with Merryl Alber, MARS 8210, Spring 2021 – 9 students, Spring 2023 – 7 students)

Seminar in Hydrobiology (co-teaching with Bill Miller, MARS 8130, Fall 2022 – 22 students, Spring 2023 – 17 students)

Biology of the Marine Environment (online instruction, MARS 1021E, Fall 2020 – 52 students, Fall 2021 – 59 students, Fall 2022 – 73 students, Fall 2023 – 73 students)

Biophysical Interactions in the Ocean (ENGR 8890, Spring 2015). Instructor of record was Brock Woodson

SkIO summer undergraduate research:

Mallory Jones (June-August 2023), Meredith Rice (Savannah State REU June-August 2023), Sarah Piña-Serrano (June-August 2022), Lex Tur (June-August 2022), Hannah Kepner (June-August 2021), Bailey Lin (June-August 2021), Severen Brown (June-August 2020)

Guest Lectures:

Two lectures for MARS 8010: Biological Oceanography about zooplankton and grazing/consumption. September 19 and 21, 2022 (University of Georgia, Amanda Spivak)

“Physical and Biological Processes Related to Oil Spills” October 10, 2018 (University of Southern Mississippi, Chris Hayes)

“Exploring the Ocean” highlighting various sampling techniques used in ocean science – October 21, 2014 (University of Georgia, Brock Woodson)

Outreach

Created a video of dolphins following our plankton imaging system.

https://www.youtube.com/watch?v=UreRb_l8c_8

Volunteer for the *RV Point Sur* “open ship” day at the Port of Gulfport on July 17, 2017. We talked to the public about the various kinds of research conducted in the Gulf of Mexico.

Served as science judge for talks and posters at the Graduate Student Symposium held on March 5, 2016 at USM’s Gulf Coast Research Laboratory in Ocean Springs, MS

Engagement with local fishing community about Gulf of Mexico research and what we can learn from the data – lead was Dr. Jessica Kastler (2015 – 2019)

Assisted in introducing local high school teachers to plankton ecology and field techniques in marine science aboard the *RV Point Sur*. We collected and processed plankton net samples and physical oceanographic data. July 15, 2015

Part of the science team and blog writer for www.planktonportal.org: a citizen science project to engage the public in scientific research and teach about ocean biodiversity. Blogs are written about various aspects of plankton ecology and oceanographic research for a general audience.

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Volunteer tutor/mentor for 8th graders for the University of Miami Kulula Project from 2011-2012

Awards

RSMAS Student Travel Award 2012
Capt. Harry D. Vernon Scholarship 2012
NSF Graduate Research Fellowship honorable mention 2010
NOAA LMRCSC Fellowship 2009-2010
RSMAS Alumni Fellowship 2008

Funding

2024 – 2026, NSF OCE Biological Oceanography (2244690) “Do fine-scale water column structure and particle aggregations favor gelatinous-dominated food webs in subtropical continental shelf environments?” (lead PI, co-PIs Marc Frischer, Jay Brandes, and Laura Treible). \$1,444,777

2023 – 2024, NSF Ocean Instrumentation “Equipment: Oceanographic Instrumentation 2023 UGA/SkIO RV Savannah” (co-PI, lead PI is Marc Frischer) \$188,444

2020 – 2023 – NSF OCE Biological Oceanography (2023133), The significance of doliolid microbial interactions: Do doliolids fundamentally alter the trophic structure and productivity of sub-tropical continental shelf food webs? (co-PI, lead PI is Marc Frischer) \$1,080,019

2018 – US Naval Research Laboratory, Intermediate Trophic Levels (InTro, lead PI was Brad Penta) \$37,071

Oceanographic Cruises and Field Work

January 26-27, February 9-10, March 9-11, April 5-6, April 20-21, May 11-12, June 1-2, June 29-30, August 9-20, September 20-22, October 13-14, December 6-16, 2021, January 12-25, February 15-16, March 8-9, August 22-30, September 19-20, 2022 and August 14-22, 2023 *RV Savannah* – Cruises for DolMICROBE project

December 8 – 9, 2020 – *RV Savannah* – test cruise for new imaging system for DolMICROBE. Served as Chief Scientist.

September 25 – 26, 2020 – *RV Savannah* – training cruise for participants in field work with DolMICROBE. Chief Scientist was Marc Frischer.

January 28, 2019 – *RV Savannah* – collection of doliolids and subtropical zooplankton in the South Atlantic Bight for culturing – Chief Scientist was Gus Paffenhöfer

April 24 – May 9, 2018 – *RV Hugh Sharp* – plankton imaging sampling as part of the US Naval Research Lab project on intermediate trophic levels (InTro) – lead PI was Brad Penta.

July 21 – 30, 2016 – *RV Point Sur* – member of the CONCORDE plankton sub-group using ISIIS to map plankton distributions on the inner shelf of the northern Gulf of Mexico.

March 30 – April 12, 2016 – *RV Point Sur* – member of the CONCORDE plankton sub-group using ISIIS to map plankton distributions on the inner shelf of the northern Gulf of Mexico. Served as Chief Scientist for the second half of this cruise (April 6 – April 12).

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October 27 – November 5, 2015 – *RV Point Sur* – member of the CONCORDE plankton sub-group using ISIS to study the drivers of plankton distributions on the inner shelf of the northern Gulf of Mexico.

September 3 – 19, 2014 – assisted in field research at several sites in Baja California, Mexico. Collaborators were Brock Woodson, Fiorenza Micheli, Charles Boch, and Justin Rogers.

June, July and August (three 2-week cruises) 2011 – NOAA *McArthur II* – studied vertical and horizontal distribution patterns of larval fish and zooplankton as part of the Natural Resource Damage Assessment (NRDA) for the Gulf of Mexico oil spill.

October 15 – 17, 2010 – NOAA *Bell M. Shimada* – “shakedown” cruise sampling a front with the *In Situ* Ichthyoplankton Imaging System (ISIS) off the coast of San Diego, CA.

August – September 2010 – NOAA *Delaware II* – Ecosystem monitoring cruise investigating ichthyoplankton assemblages near Georges Bank and the Gulf of Maine.

June – July 2010 – *RV Shana Rae* – investigation of thin layer formation and zooplankton composition in Monterey Bay.

2008-2013 – numerous trips to Florida Keys National Marine Sanctuary to assist with deployment of light traps and diver surveys for juvenile coral reef fishes.

July 2008 – *RV Walton Smith* – Study of larval fish population dynamics in the Florida Straits.

Publications

Greer, A.T., M.S. Schmid, P.I. Duffy, K.L. Robinson, M.A. Genung, J.Y. Luo, T. Panaiotis, C. Briseño-Avena, M.E. Frischer, S. Sponaugle, R.K. Cowen (2023) In situ imaging across ecosystems to resolve the fine-scale oceanographic drivers of a globally significant planktonic grazer. *Limnology & Oceanography* 68(1):192-207. doi: 10.1002/lno.12259

Treible, L.M., L.M. Chiaverano, **A.T. Greer** (2022) Fine-scale habitat associations of medusae and ctenophores along a gradient of river influence and dissolved oxygen. *Estuarine, Coastal, and Shelf Science* 272:107887. doi: 10.1016/j.ecss.2022.107887

McManus, M.A., **A.T. Greer**, A.V. Timmerman, J.C. Sevadjan, C.B. Woodson, R.K. Cowen, D.A. Fong, S. Monismith, O.M. Cheriton (2021) Characterization of the biological, physical and chemical properties of a toxic thin layer in a temperate marine system. *Marine Ecology Progress Series* 678:17-35. doi: 10.3354/meps13879

Greer, A.T., L.M. Chiaverano, L.M. Treible, C. Briseño-Avena, F.J. Hernandez (2021) From spatial pattern to ecological process through imaging zooplankton interactions. *ICES Journal of Marine Science* 78(8):2664–2674. doi: 10.1093/icesjms/fsab149

Greer, A.T., J.C. Lehrter, B.M. Binder, A.R. Nayak, R. Barua, A.E. Rice, J.H. Cohen, M.N. McFarland, A. Hagemeyer, N.D. Stockley, K.M. Boswell, I. Shulman, S. deRada, B. Penta. (2020) High-resolution sampling of a broad marine life size spectrum reveals differing size- and composition-based associations with

physical oceanographic structure. *Frontiers in Marine Science* 7:542701, doi: 10.3389/fmars.2020.542701

- Greer, A.T.**, A.D. Boyette, V.J. Cruz, M.K. Cambazoglu, B. Dzwonkowski, L.M. Chiaverano, S.L. Dykstra, C. Briseño-Avena, R.K. Cowen, J.D. Wiggert (2020) Contrasting fine-scale distributional patterns of zooplankton driven by the formation of a diatom-dominated thin layer. *Limnology & Oceanography*, 65(9): 2236-2258, doi: 10.1002/lno.11450
- Parra, S.M., V. Sanial, A.D. Boyette, M.K. Cambazoglu, I.M. Soto, **A.T. Greer**, L.M. Chiaverano, A. Hoover, M.S. Dinniman (2020) Bonnet Carré Spillway freshwater transport and corresponding biochemical properties in the Mississippi Bight. *Continental Shelf Research*, 199: 104114, doi: 10.1016/j.csr.2020.104114
- Parra, S.M., **A.T. Greer**, J.W. Book, A.L. Deary, I.M. Soto, C. Culpepper, F.J. Hernandez, T.N. Miles (2019) Acoustic detection of zooplankton diel vertical migration behaviors on the northern Gulf of Mexico shelf. *Limnology & Oceanography*, 64(5): 2092-2113, doi: 10.1002/lno.11171
- Greer, A.T.**, L.M. Chiaverano, J.G. Ditty, F.J. Hernandez (2019) *In situ* observations of fish larvae encased within a pelagic gelatinous matrix. *Marine Ecology Progress Series*, 614: 209-214, doi: 10.3354/meps12916
- Dzwonkowski, B., S. Fournier, J.T. Reager, S. Milroy, K. Park, A.M. Shiller, **A.T. Greer**, I. Soto, S.L. Dykstra, V. Sanial (2018) Tracking sea surface salinity and dissolved oxygen on a river-influenced, seasonally stratified shelf, Mississippi Bight, northern Gulf of Mexico. *Continental Shelf Research*, 169: 25-33, doi: 10.1016/j.csr.2018.09.009
- Greer, A.T.**, A.M. Shiller, E.E. Hofmann, J.D. Wiggert, S.J. Warner, S.M. Parra, C. Pan, J.W. Book, D. Joung, S. Dykstra, J.W. Krause, B. Dzwonkowski, I.M. Soto, M.K. Cambazoglu, A.L. Deary, C. Briseño-Avena, A.D. Boyette, J.A. Kastler, L. Hode, U. Nwankwo, L.M. Chiaverano, V. Sanial, S.J. O'Brien, P.J. Fitzpatrick, Y. Lau, M.S. Dinniman, K.M. Martin, P. Ho, A.K. Mojzisz, S.D. Howden, F.J. Hernandez, I. Church, T.N. Miles, S. Sponaugle, J.N. Moum, R.A. Arnone, R.K. Cowen, G.A. Jacobs, O. Schofield, and W.M. Graham (2018) Functioning of coastal river-dominated ecosystems and implications for oil spill response: From observations to mechanisms and models. *Oceanography*, 31(3): 90-103, doi: 10.5670/oceanog.2018.302
- Greer, A.T.**, L.M. Chiaverano, J.Y. Luo, R.K. Cowen, W.M. Graham (2018) Ecology and behaviour of holoplanktonic scyphomedusae and their interactions with larval and juvenile fishes in the northern Gulf of Mexico. *ICES Journal of Marine Science*, 75(2): 751-763, doi: 10.1093/icesjms/fsx168
- Greer, A.T.** (2018) Technology overview: In-situ shadowgraph imaging. *Marine Technology Society Journal* 52(6): 62-65.
- Greer, A.T.**, C. Briseño-Avena, A.L. Deary, F.J. Hernandez, R.K. Cowen, W.M. Graham (2017) Associations between lobster phyllosoma and gelatinous zooplankton in relation to oceanographic properties in the northern Gulf of Mexico. *Fisheries Oceanography*, 26(6): 693-704, doi: 10.1111/fog.12228
- Dzwonkowski, B., **A.T. Greer**, C. Briseño-Avena, J.W. Krause, I.M. Soto, F.J. Hernandez, A.L. Deary, J.D. Wiggert, D. Joung, P.J. Fitzpatrick, S.J. O'Brien, S.L. Dykstra, Y.

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- Lau, M.K. Cambazoglu, G. Lockridge, S.D. Howden, A.M. Shiller, W.M. Graham (2017) Estuarine influence on biogeochemical properties of the Alabama shelf during the fall season. *Continental Shelf Research*, 140: 96-109, doi: 10.1016/j.csr.2017.05.001
- Greer, A.T.**, C.B. Woodson, C.E. Smith, C.M. Guigand, R.K. Cowen (2016) Examining mesozooplankton patch structure and its implications for trophic interactions in the northern Gulf of Mexico. *Journal of Plankton Research*, 38(4): 1115-1134, doi: 10.1093/plankt/fbw033
- Greer, A.T.**, C.B. Woodson, C.M. Guigand, R.K. Cowen (2016) Larval fishes utilize Batesian mimicry as a survival strategy in the plankton. *Marine Ecology Progress Series*, 551 (Feature Article): 1-12, doi: 10.3354/meps11751
- Greer, A.T.** and C.B. Woodson (2016) Application of a predator-prey overlap metric to determine the impact of sub-grid scale feeding dynamics on ecosystem productivity. *ICES Journal of Marine Science*, 73(4): 1051-1061, doi: 10.1093/icesjms/fsw001
- Greer, A.T.**, R.K. Cowen, C.M. Guigand, J.A. Hare (2015) Fine-scale planktonic habitat partitioning at a shelf-slope front revealed by a high-resolution imaging system. *Journal of Marine Systems*, 142: 111-125, doi: 10.1016/j.jmarsys.2014.10.008
- Luo, J.Y., B. Grassian, D. Tang, J.O. Irisson, **A.T. Greer**, C.M. Guigand, S. McClatchie, R.K. Cowen (2014) Environmental drivers of the fine-scale distribution of a gelatinous zooplankton community across a mesoscale front. *Marine Ecology Progress Series*, 510: 129-149, doi: 10.3354/meps10908
- Greer, A.T.**, R.K. Cowen, C.M. Guigand, J.A. Hare, D. Tang (2014) The role of internal waves in larval fish interactions with predators and prey. *Progress in Oceanography*, 127: 47-61, doi: 10.1016/j.pocean.2014.05.010
- Sevadjian, J.C., M.A. McManus, J.P. Ryan, **A.T. Greer**, R.K. Cowen, C.B. Woodson (2014) Across-shore variability in plankton layering and abundance associated with physical forcing in Monterey Bay, California. *Continental Shelf Research*, 72: 138-151, doi: 10.1016/j.csr.2013.09.018
- Timmerman, A.H.V., M.A. McManus, O.M. Cheriton, R.K. Cowen, **A.T. Greer**, R.M. Kudela, K.C. Ruttenberg, J.C. Sevadjian (2014) Hidden thin layers of toxic diatoms in a coastal bay. *Deep Sea Research II*, 101: 129-140, doi: 10.1016/j.dsr2.2013.05.030
- Greer, A.T.**, R.K. Cowen, C.M. Guigand, M.A. McManus, J.C. Sevadjian, A.H.V. Timmerman (2013) Relationships between phytoplankton thin layers and the fine-scale vertical distribution of two trophic levels of zooplankton. *Journal of Plankton Research*, 35(5): 939-956, doi: 10.1093/plankt/fbt056 (Featured Article and cover image)
- Cowen, R.K., **A.T. Greer**, C.M. Guigand, J.A. Hare, D.E. Richardson, H.J. Walsh (2013) Evaluation of the *In Situ* Ichthyoplankton Imaging System (ISIIS): Comparison with the traditional (bongo net) sampler. *Fishery Bulletin*, 38: 1-12, doi: 10.7755/FB.111.1.1
- McClatchie, S., R.K. Cowen, K. Nieto, **A.T. Greer**, J.Y. Luo, C. Guigand, D. Demer, D. Griffith, D. Rudnick (2012) Resolution of fine biological structure including small

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narcomedusae across a front in the Southern California Bight. *Journal of Geophysical Research*, 117: C04020, doi: 10.1029/2011JC007565

Manuscripts submitted or in prep

Greer, A.T., T.J.W. Walles, P.I. Duffy, C. Cousin, L.M. Treible, K.D. Aaron, J.C. Nejstgaard. Modular shadowgraph imaging to resolve zooplankton distributions in diverse field and mesocosm settings (submitted). *Limnology & Oceanography: Methods*

Chiaverano, L.M., **A.T. Greer**, C. Briseño-Avena, O. Lestrade, F.J. Hernandez, R.K. Cowen, W.M. Graham. Stratification drives taxon-specific distributions of gelatinous plankton at fine scales in the northern Gulf of Mexico (in prep)

Greer, A.T., S. Brown, L.M. Treible, L.M. Chiaverano, K. Axler, C. Briseño-Avena, R.K. Cowen, S. Sponaugle, F.J. Hernandez. Distributional shifts of shelf-associated larval fishes in response to thin layers, diel cycle, and hypoxia during summer (in prep)

Invited Talks

Evening at Skidaway Seminar Series. Savannah, GA. “The Gulf of Mexico: A Confluence of Life.” (March 2023) https://www.youtube.com/watch?v=VYQFbf_sM-Q&t=555s

Georgia Tech – Earth and Atmospheric Sciences Seminar, Atlanta, GA. “Beyond the snapshot: Plankton imaging for ecological synthesis and process-oriented oceanography.” December 1, 2022.

Georgia Coastal Research Council Colloquium, Richmond Hill, GA. “Resolving the intermediate trophic levels between primary and fisheries production in shelf ecosystems.” October 20, 2022.

Woods Hole Oceanographic Institution, (remote presentation), Applied Ocean Physics Seminar. Beyond the snapshot: Plankton imaging for synthesis and process-oriented research. August 17, 2022.

Cartersville Public Library, Cartersville GA. The Secret Life of Ocean Critters. June 11, 2022

Savannah State University seminar series. Savannah, GA. Question and answer session with 15 graduate students. September 10, 2021

Evening at Skidaway Seminar Series. Savannah, GA. The Secret Life of Ocean Critters. (May 2021) <https://www.youtube.com/watch?v=b6WnaRjUCWI&t=158s>

Georgia Southern University seminar series. Statesboro, GA. (March 2020 - cancelled)

Woods Hole Oceanographic Institution, Biology Seminar, Woods Hole, MA. From images to insight: Fine-scale patterns and interactions within the zooplankton community (March 2019)

University of Southern Mississippi, Gulf Coast Research Laboratory Seminar, Ocean Springs, MS. Coastal oceanographic features and zooplankton ecological interactions in the northern Gulf of Mexico (February 2019)

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University of Georgia, Skidaway Institute of Oceanography. Savannah, GA. Imaging the ocean: Insights, applications, and future directions in zooplankton ecology (January 2019)

Dauphin Island Sea Lab Seminar. Dauphin Island, AL. Window to a world: New insights into plankton ecology and oceanography revealed with *in situ* imaging (September 2018)

Oil Spill Science Seminar: Technology Used to Study Oil Spills (Part 2). Ocean Springs, MS. Imaging plankton to understand Gulf of Mexico ecology and potential interactions with oil (August 2018). Presentation can be viewed at <https://www.youtube.com/watch?v=qIZfoIcUZ28&t=218s>

U.S. Coast Guard Sector Mobile, Mississippi Area Committee Meeting. Moss Point, MS. Coastal river-dominated ecosystems and implications for oil extraction: From observations to mechanisms and models (July 2017)

University of Southern Mississippi Division of Marine Science. Stennis Space Center, MS. A matter of scale: What can fine-scale measurements reveal about plankton communities and biophysical mechanisms of ecosystem productivity? (April 2017)

IGB Leibniz-Institute of Freshwater Ecology and Inland Fisheries. Neuglobsow, Germany. Biophysical drivers of plankton patch structure and consequences for ecosystem productivity (August 2016)

University of Southern Mississippi Gulf Coast Research Laboratory Seminar. Ocean Springs, MS. Biophysical drivers of plankton patch structure and consequences for ecosystem productivity (February 2016)

University of Georgia - Enthusiasts of Diversity, Genetics, and Evolution (EDGE) seminar. Athens, GA. Blending in with the crowd: Larval fish mimicry in the plankton (August 2014)

University of Georgia - Department of Marine Sciences Seminar. Athens, GA. Describing fine-scale biophysical interactions among plankton and larval fishes using *in situ* imaging technology (January 2014)

University of Georgia. Skidaway Institute of Oceanography Seminar. Savannah, GA. Describing fine-scale biophysical interactions among plankton and larval fishes using *in situ* imaging technology (January 2014)

Conference Presentations

Greer, A.T., K.D. Aaron, P.I. Duffy, L.M. Treible, M.E. Frischer. Resolving the influence of water column structure on biological production and mesozooplankton traits in the South Atlantic Bight. Invited speaker at the International Workshop on Western Boundary Current-Subtropical Continental Shelf Interactions. Savannah, GA. May 2023.

Duffy, P.I., M.E. Frischer, L.M. Treible, E.E. Gipson, **A.T. Greer**. Fine-scale ecological response of a gelatinous filter feeding grazer to monthly changes in water column structure (poster). International Workshop on Western Boundary Current-Subtropical Continental Shelf Interactions. Savannah, GA. May 2023.

Greer, A.T., S.E. Brown, L.M. Treible, L.M. Chiaverano, K. Axler, C. Briseño-Avena, R.K. Cowen, S. Sponaugle, F.J. Hernandez. Fine-scale distributional changes of shelf-

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associated larval fishes in response to stratification and bottom water dissolved oxygen. Gulf of Mexico Conference. Baton Rouge, LA. April 2022.

Treible, L.M., L.M. Chiaverano, **A.T. Greer**. Fine-scale habitat associations of medusae and ctenophores along a gradient of river influence and dissolved oxygen. Gulf of Mexico Conference. Baton Rouge, LA. April 2022.

Duffy, P.I., L. Treible, M. Frischer, **A.T. Greer**. Identifying favorable oceanographic conditions for bloom formation of doliolids using in situ imagery. ASLO Ocean Sciences Meeting (virtual). February 2022.

Aaron, K.D., P. Duffy, L. Treible, M. Frischer, **A.T. Greer**. A trait-based spatial analysis of mesozooplankton distributions using a new towed imaging system in the South Atlantic Bight (poster). ASLO Ocean Sciences Meeting (virtual). February 2022.

Penta, B., C. Wood, I. Shulman, S. Ladner, S. Anderson, **A.T. Greer**. Machine Learning aided identification of across shelf patterns of plankton and their relationships to optical and physical parameters on the Mid-Atlantic Bight, Spring 2018 (poster). ASLO Ocean Sciences Meeting (virtual). February 2022.

Nayak, A.R., L. Nyman, R. Barua, M. McFarland, **A.T. Greer**, J. Lehrter, B. Penta. Characterizing a subsurface ciliate thin layer in the coastal Atlantic Ocean using in situ digital holographic microscopy. ASLO Ocean Sciences Meeting (virtual). February 2022.

Treible, L.M., H. Kepner, P. Duffy, L. Chiaverano, **A.T. Greer**. Life stage-specific vertical habitat preference of pelagic tunicates in a stratified vs. well-mixed water column. ASLO Ocean Sciences Meeting (virtual). February 2022.

Greer, A.T., S. Brown, L.M. Treible, L.M. Chiaverano, K. Axler, C. Briseño-Avena, R.K. Cowen, S. Sponaugle, F.J. Hernandez. Distributional changes in shelf-associated larval fishes in response to a gradient of freshwater influence and bottom water dissolved oxygen (oral presentation). ASLO Aquatic Sciences Meeting (virtual). June 2021.

Duffy, P., M.E. Frischer, J. Brandes, L. Treible, **A.T. Greer**. Resolving spatial variability and ecological context for pelagic tunicates using in situ imaging (oral presentation). ASLO Aquatic Sciences Meeting (virtual). June 2021.

Treible, L.M., L.M. Chiaverano, **A.T. Greer**. Distribution and habitat preference of large cnidarian medusae and ctenophores along a gradient of river discharge and dissolved oxygen (oral presentation). ASLO Aquatic Sciences Meeting (virtual). June 2021.

Nayak, A.R., L. Nyman, B. Guo, J. Hong, R. Barua, M. McFarland, N. Stockley, **A.T. Greer**, B. Penta. High resolution observations on the formation and evolution of a subsurface ciliate layer in the coastal Atlantic Ocean (oral presentation). ASLO Aquatic Sciences Meeting (virtual). June 2021.

Greer, A.T., A.C. Hagemeyer, J.C. Lehrter, M. McFarland, A.R. Nayak, N. Stockley, B.M. Binder, A.E. Rice, K.M. Boswell, I. Shulman, S. deRada, B. Penta. High-resolution sampling of a broad marine life size spectrum to examine shelf biophysical coupling (poster). Ocean Sciences Meeting. San Diego, CA. February 2020.

Hagemeyer, A.C., **A.T. Greer**, B. Penta, J.C. Lehrter. *In Situ* analysis of appendicularian distribution in relation to planktonic biomass and community composition (poster). Ocean Sciences Meeting. San Diego, CA. February 2020.

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Briseño-Avena, C., **A.T. Greer**, L.M. Chiaverano, W.M. Graham, R.K. Cowen. The relationship between water column stratification, pelagic habitat heterogeneity and plankton diversity in a neritic, river-dominated environment (oral presentation). Ocean Sciences Meeting. San Diego, CA. February 2020.

Wood, H., A.C. Hagemeyer, **A.T. Greer**, B. Penta, J.C. Lehrter. Physical and biological community characteristics of planktonic veliger patches in the southern Mid-Atlantic Bight (poster). Ocean Sciences Meeting. San Diego, CA. February 2020.

Penta, B., A.E. Rice, I. Shulman, A.C. Hagemeyer, **A.T. Greer**, J.C. Lehrter, M. McFarland, A.R. Nayak, N. Stockley, B.M. Binder, K.M. Boswell. Physical-Biological Interactions Resultant from the Confluence of Water Masses on the New Jersey-Delaware Continental Shelf, Spring 2018 (poster). Ocean Sciences Meeting. San Diego, CA. February 2020.

Greer, A.T., L.M. Chiaverano, V.J. Cruz, M.K. Cambazoglu, K. Axler, C. Briseño-Avena, R.K. Cowen, F.J. Hernandez. Summer hypoxia, layering, and dynamic physical features alter fine-scale abundances of mesozooplankton and marine snow (poster). Gulf of Mexico Oil Spill & Ecosystem Science Conference. Tampa, FL. February 2020.

Greer, A.T., V.J. Cruz, L.M. Chiaverano, M.K. Cambazoglu, K. Axler, C. Briseño-Avena, R.K. Cowen, F.J. Hernandez. Vertical migrations of fish larvae and mesozooplankton in relation to hypoxia in the Mississippi Bight (oral presentation). 25th Biennial Coastal & Estuarine Research Federation (CERF) Conference. Mobile, AL. November 2019

Chiaverano, L.M., **A.T. Greer**, V.J. Cruz, F.J. Hernandez, C. Briseño-Avena, R.K. Cowen, W.M. Graham. Fine-scale distributional patterns of gelatinous zooplankton in highly stratified, hypoxic waters of the central northern Gulf of Mexico shelf (poster). 25th Biennial Coastal & Estuarine Research Federation (CERF) Conference. Mobile, AL. November 2019

Wallis, T.J.W., **A.T. Greer**, E. Bochinski, G. Bacha, V. Eiselein, M. Seda, J.C. Nejstgaard. Rapid automated assessment of fine-scale zooplankton distributions using a low-cost, handheld in situ imager and deep learning. Symposium on European Freshwater Sciences. Zagreb, Croatia. July 2019.

Penta, B., A.E. Rice, I. Shulman, S. Anderson, I. Martens, W. Goode, J. Cohen, K. Hudson, **A.T. Greer**, J. Lehrter, A. Hagemeyer, B. Binder, M. McFarland, A. Nayak, N. Stockley. Autonomous Lagrangian observations of ocean biophysical parameters offshore of Delaware Bay, USA (poster). ASLO Aquatic Sciences Meeting. San Juan, PR. February 2019.

Greer, A.T., A.D. Boyette, M.K. Cambazoglu, V.J. Cruz, C. Pan, W.M. Graham. Plankton thin layer mechanism of formation and cascading ecological impacts in the northern Gulf of Mexico (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2019.

Chiaverano, L.M., **A.T. Greer**, O. Lestrade, F.J. Hernandez, C. Briseño-Avena, R.K. Cowen, W.M. Graham. Fine-scale distributional patterns of gelatinous zooplankton are driven by seasonal environmental changes in the northern Gulf of Mexico (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2019.

Dykstra, S.L., B. Dzwonkowski, S.M. Parra, S. Warner, J.W. Book, J.N. Moum, **A.T. Greer**, C. Briseño-Avena. Shelf convergence and transport near an ebb tidal delta in the

Mississippi Bight, northern Gulf of Mexico (oral presentation). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2019.

Dzwonkowski, B., S. Fournier, J. Coogan, S. Milroy, **A.T. Greer**, I. Soto, A. Shiller, S. Dykstra, J. Lehrter, V. Sanial. Shelf bottom dissolved oxygen conditions and their impacts on adjacent estuarine systems in a region of freshwater influence, Mississippi Bight (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2019.

Cambazoglu, M.K., J. Wiggert, S. O'Brien, T. Miles, **A.T. Greer**, M. Dinniman, P. Fitzpatrick. Impact of wave forcing on sediment resuspension and transport in the Mississippi Sound and Bight (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2019.

Greer, A.T., A.D. Boyette, V.J. Cruz, M.K. Cambazoglu, C. Pan, A. Hoover, C. Culpepper, F.J. Hernandez. Distribution of larval fishes, gelatinous zooplankton, and prey in the vicinity of a convergence-induced thin layer in the northern Gulf of Mexico (oral presentation). 42nd Annual Larval Fish Conference. Victoria, BC, Canada. June 2018.

Greer, A.T., I. Church, L.M. Chiaverano, C. Briseño-Avena, K. Axler, F.J. Hernandez, R.K. Cowen, W.M. Graham. Patch structure and diel vertical migration of zooplankton in hypoxic waters measured with in situ imaging and multibeam acoustics (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2018

Greer, A.T. Interactive plotting of fine-scale zooplankton distributions and oceanographic data using R Shiny (presentation). Gulf Data Tools Café. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2018.

Chiaverano, L.M., **A.T. Greer**, C. Briseño-Avena, O. Lestrade, F.J. Hernandez, R.K. Cowen, W.M. Graham. Stratification drives taxon-specific distributions of gelatinous plankton at fine scales in the northern Gulf of Mexico (oral presentation). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2018.

O'Brien, S.J., T.N. Miles, C. Pan, M.K. Cambazoglu, I.M. Soto, **A.T. Greer**, I. Church, L. Quas, M. Legere, J.D. Wiggert. Particulate matter resuspension in the Mississippi Bight assessed with biophysical modeling and *in situ* measurements (oral presentation). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2018.

Church, I., **A.T. Greer**, L. Quas, M.H. Williamson. Multibeam water column filtering methods to improve data management and bio-acoustic interpretation (poster). GeoHab Conference. Nova Scotia, Canada. May 2017.

Greer, A.T., C. Briseño-Avena, A.L. Deary, M.K. Cambazoglu, I.M. Soto, G.A. Jacobs, F.J. Hernandez, R.K. Cowen, W.M. Graham. Partners or prey? Exploring the drivers of associations between lobster phyllosoma and gelatinous zooplankton in the northern Gulf of Mexico (oral presentation). ASLO Aquatic Sciences Meeting. Honolulu, HI. March 2017.

Boyette, A.D., **A.T. Greer**, A.D. Weidemann, G.A. Jacobs, W.M. Graham. Physical mechanisms for formation and resulting lower trophic level interactions within a plankton thin layer in the northern Gulf of Mexico (oral presentation given by Boyette). ASLO Aquatic Sciences Meeting. Honolulu, HI. March 2017.

Chiaverano, L.M., **A.T. Greer**, A. Pliru, F.J. Hernandez, W.M. Graham. High resolution sampling of early stage *Aurelia* medusae and associated water column properties in the

northern Gulf of Mexico (poster). ASLO Aquatic Sciences Meeting. Honolulu, HI. March 2017.

Greer, A.T., I. Church, L.M. Chiaverano, M.H. Williamson, C. Briseño-Avena, R.K. Cowen, W.M. Graham. Combining multibeam acoustics and in situ imaging to resolve patch structure of shrimp aggregations and gelatinous zooplankton in relation to hypoxia (oral presentation). Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2017.

Briseño-Avena, C., S.J. Warner, **A.T. Greer**, I.M. Soto, S.M. Parra, A.L. Deary, F.J. Hernandez, W.M. Graham, J.N. Moum, R.K. Cowen. Turbulence microstructure in coastal river plumes: Measuring the in situ effects on plankton. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2017.

Parra, S.M., A.L. Deary, J.W. Book, **A.T. Greer**, C. Briseño-Avena, A.D. Boyette, T.N. Miles, F.J. Hernandez. Highly-resolved temporal in situ variability of zooplankton diel vertical migrations in the Mississippi Bight. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2017.

Church, I., **A.T. Greer**, M.H. Williamson, L. Quas. Multibeam water column data processing techniques to facilitate bio-acoustic interpretation. Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. February 2017.

Greer, A.T., L.M. Chiaverano, J.Y. Luo, R.K. Cowen, W.M. Graham. Salinity-driven patches of *Pelagia noctiluca* and their top-down impact on the northern Gulf of Mexico plankton community described with an *in situ* imaging system (poster). 5th International Jellyfish Bloom Symposium. Barcelona, Spain. May 2016.

Greer, A.T. and C.B. Woodson. Application of a predator-prey overlap metric to determine the impact of sub-grid scale feeding dynamics on ecosystem productivity (oral presentation). AGU/ASLO Ocean Sciences Meeting. New Orleans, LA. February 2016.

Cambazoglu, M.K., G.A. Jacobs, S.D. Howden, J.W. Book, R. Arnone, I.M. Soto-Ramos, R.A. Vandermeulen, **A.T. Greer**, T.N. Miles. Spatio-temporal variability of internal waves in the northern Gulf of Mexico studied with the Navy Coastal Ocean Model, NCOM (poster). AGU/ASLO Ocean Sciences Meeting. New Orleans, LA. February 2016.

Greer, A.T., I. Church, M.H. Williamson, C. Briseño-Avena, A.D. Boyette, R.K. Cowen, W.M. Graham. Acoustical and optical characterization of marine snow layers in the northern Gulf of Mexico: Layer types and mechanisms of formation (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. Tampa, FL. February 2016.

Cowen, R.K., W.M. Graham, F.J. Hernandez, J.W. Krause, S.D. Howden, I. Church, C. Briseño-Avena, **A.T. Greer**, A.L. Deary. CONCORDE: Measurement of fine- to sub-mesoscale processes driving autumn plankton distributions and transport in the highly dynamic coastal shelf system of the northern Gulf of Mexico (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. Tampa, FL. February 2016.

Williamson, M., I. Church, L. Quas, **A.T. Greer**. High frequency multibeam sonar water column backscatter: A 3D view of water column acoustic anomalies to facilitate ecosystem science (poster). Gulf of Mexico Oil Spill and Ecosystem Science Conference. Tampa, FL. February 2016.

Greer, A.T., R.K. Cowen, C.M. Guigand, J.A. Hare. Fine-scale planktonic habitat partitioning at a shelf-slope front revealed by a high-resolution imaging system (oral presentation). ASLO Ocean Sciences Meeting. Honolulu, HI. February 2014.

Cowen, R.K., C.M. Guigand, J.Y. Luo, **A.T. Greer**, B. Grassian. Plankton Portal: An online Citizen Science project for plankton classification and education (poster). ASLO Ocean Sciences Meeting. Honolulu, HI. February 2014.

Luo, J.Y., B. Grassian, **A.T. Greer**, C.M. Guigand, R.K. Cowen. Environmental drivers of the fine-scale distribution of a gelatinous zooplankton community across a small-scale front (poster). ASLO Ocean Sciences Meeting. Honolulu, HI. February 2014.

Greer, A.T., R.K. Cowen, C.M. Guigand, J.A. Hare. Fine-scale spatial relationships of larval fishes, predators, and prey: the impact of internal waves (oral presentation). 37th Annual Larval Fish Conference. Miami, FL. June 2013.

Luo, J.Y., B. Grassian, **A.T. Greer**, C.M. Guigand, J.O. Irisson, S. McClatchie, R.K. Cowen. Fine scale distribution of gelatinous zooplankton across a front in the Southern California Bight (oral presentation). 4th International Jellyfish Bloom Symposium. Hiroshima, Japan. June 2013.

Greer, A.T., R.K. Cowen, C.M. Guigand, J.Y. Luo. Using plankton imaging technology and computer science for biological oceanographic advancement and education (poster). SEEDs Interdisciplinary Careers Workshop, Miami, FL. February 2013.

Greer, A.T., R.K. Cowen, C.M. Guigand, M.A. McManus, J.C. Sevadjan, A.H.V. Timmerman. Small scale change in zooplankton community in relation to stratification and phytoplankton thin layers (poster). ASLO Ocean Sciences Meeting. Salt Lake City, UT. February 2012.

Cowen, R.K., **A.T. Greer**, C.M. Guigand, M.A. McManus, J.C. Sevadjan, A.H.V. Timmerman, C.B. Woodson, S.G. Monismith, D.A. Fong. Physical processes driving fine scale biological patchiness in an inner shelf, high productivity environment: acoustic and optical measurements (poster). ASLO Ocean Science Meeting. Salt Lake City, UT. February 2012.

Cowen, R.K., C.M. Guigand, G. Tsechpenakis, C. Cousins, **A.T. Greer**, S. Chatzis, J.A. Hare. Update on the In Situ Ichthyoplankton Imaging System (ISIIS) (oral presentation). 34th Annual Larval Fish Conference. Santa Fe, NM. June 2010.

Cowen, R.K., C.M. Guigand, C. Cousin, G. Tsechpenakis, S. Chatzis, **A.T. Greer**. An operational *In Situ* Ichthyoplankton Imaging System (ISIIS) (oral presentation). OceanObs. Venice, Italy. September 2009.

Book Review

Greer, A.T. (2015) Review of: Impacts of Oil Spill Disasters on Marine Habitats and Fisheries in North America. *Copeia* 103(4): 1102-1116.

Articles for the public

<https://www.skio.uga.edu/2023/03/28/new-interactive-aquarium-exhibit-explains-marine-life-cycles/>

<https://www.skio.uga.edu/2021/10/22/new-technology-provides-new-insight-into-marine-life/>

<https://www.skio.uga.edu/2020/05/26/scientific-serendipity-researchers-make-surprising-finding-oceans-thin-layers/>

<https://ocean.si.edu/ocean-life/plankton/what-big-picture-can-teach-us-about-tiny-ocean-creatures>

<https://www.csmonitor.com/Science/2013/0920/Calling-all-plankton-hunters-Ecologists-need-your-help>

Professional Activities

UGA Dept. of Marine Sciences Graduate Affairs Committee (member, 2020-present)
CONCORDE Synthesis workshop organizing committee (2019-present)
SkIO Computing Technology Committee (member, 2019-present)

Societal memberships: Association for the Sciences of Limnology and Oceanography (ASLO), American Fisheries Society – Early Life History Section, The Oceanography Society, ICES Working Group in Zooplankton Ecology: chair-invited member

Conference Session Chairing:

Session co-chair, ICES Zooplankton Production Symposium 2024. Hobart, Australia. ZP8
“Get it from the image: In situ imaging and spatially detailed observations of zooplankton for ecosystem studies”

Session co-chair, Ocean Sciences Meeting 2024. New Orleans, LA. OB026 “Zooplankton Mediated Processes – A Crossroads for Ocean Carbon”

Ocean Sciences Meeting 2022 ME06 (virtual) “The fragile food web: Dynamics and impacts of gelatinous zooplankton and other understudied organisms”

Session co-chair, Ocean Sciences Meeting 2022 ME11 (virtual) “Impacts of ecological interactions on marine ecosystem dynamics and biodiversity: New insights from theory, models, and field measurements”

Aquatic Sciences Meeting 2021 (virtual) SS67 “The fragile food web: Dynamics and impacts of gelatinous zooplankton and other understudied organisms.”

Gulf of Mexico Oil Spill and Ecosystem Science Conference 2019 020 “Understanding the shelf ecosystem – a critical intermediary between open water and the coast – by combining in-situ measurements, modeling, and remote sensing”

ASLO Aquatic Sciences 2017 072 “Biotic interactions in aquatic ecosystems - implications for food webs and ecosystem functioning”

ASLO Ocean Sciences 2016 ME41 “Impacts of Ecological Interactions on Marine Ecosystem Dynamics: New Insights from Models, Theory, and Field Measurements”

Peer Reviewer (Year-Number of reviews): Biogeosciences (2021-1; 2022-1), Bulletin of Marine Science (2016-1), Continental Shelf Research (2018-1; 2023-1), Ecology (2019-1), Ecosphere (2022-1), Environmental Biology of Fishes (2016-1), Environmental Monitoring and Assessment (2020-1), Estuaries and Coasts (2019-2; 2022-1), Frontiers in Marine Science (2020-1; 2021-1; 2022-2), Global Ecology and Biogeography (2018-1; 2019-2), Gulf and Caribbean Research (2018-1), Hydrobiologia (2019-1), ICES Journal of Marine Science (2017-1; 2018-2; 2019-1; 2020-1; 2021-2), IEEE Journal of Oceanic Engineering (2017-1), Journal of Fish Biology (2018-1; 2021-1), Journal of Marine Systems (2018-1; 2019-1; 2020-1; 2023-1), Journal of Plankton Research (2013-1;

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2015-2; 2021-1; 2022-1), *Limnology & Oceanography* (2019-1; 2020-2; 2021-1; 2023-1), *Limnology & Oceanography: Letters* (2021-1; 2023-1), *Limnology & Oceanography: Methods* (2018-1; 2020-1; 2023-3), *Marine & Freshwater Research* (2018-1; 2021-1), *Marine Ecology Progress Series* (2015-1; 2017-3; 2018-1; 2019-2; 2022-2; 2023-1), *Marine Environmental Research* (2021-2), *Marine Pollution Bulletin* (2018-1; 2022-1), *NOAA Professional Papers Series* (2022-1), *PLOS ONE* (2017-2), *Polar Biology* (2020-1; 2022-1), *Regional Studies in Marine Science* (2018-1), *Scientific Reports* (2021-1; 2022-2), *Sensors* (2020-1)

Proposal Reviewer (Year-Number of reviews): NSF OCE – Biological Oceanography (2016-1; 2019-1; 2021-1; 2022-1; 2023-1), NSF OCE – Ocean Technology & Interdisciplinary Coordination (2022-1), NSF Arctic Natural Sciences Program (2021-1), Maryland Sea Grant (2018-1), NOAA Ocean Exploration (2021-3)

Proposal panels: Connecticut Sea Grant (2021)

Guest Editor: *Ecological Applications* (2020)