

CURRICULUM VITAE
TAMMI LEE RICHARDSON
August 2024

I. Biographical Information

Address: Dept. of Biological Sciences
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Citizenship: Canadian, US Permanent Resident

Education

1996 Ph.D. (Oceanography), Dalhousie University, Halifax, N.S., Canada

1988 M.Sc. (Biology), University of New Brunswick, Canada

1986 B.Sc. (1st Class Honours Biology), University of New Brunswick, Canada

Professional Experience

July 2023 – present Director, Institute for Clean Water and Healthy Ecosystems, USC

Jan. 2021 – present Chair, Dept. of Biological Sciences, University of South Carolina

Jan. 2015 - present Professor, University of South Carolina, Columbia, SC

2018-2020 Associate Chair, Dept. of Biological Sciences, Univ. South Carolina

2011 –2014 Associate Professor, University of South Carolina, Columbia, SC

2005-2010 Assistant Professor, University of South Carolina, Columbia, SC

2000-2004 Assistant Research Scientist, Texas A&M University, College Station, TX

1998-2000 Postdoctoral Research Associate, Institute of Marine Sciences, University of North Carolina, Morehead City, NC

1996-1998 Postdoctoral Fellow, Queen's University of Belfast, N. Ireland

1989 Research Technician, Dept. of Physiology and Biophysics, Dalhousie University, Halifax, Nova Scotia, Canada

Awards and Distinctions

2022 Michael J. Mungo Distinguished Professor Award

2018 College of Arts & Sciences Innovative Teaching Associate (USC)

2016 Association for the Sciences of Limnology and Oceanography (ASLO)- Fellow

2015 Michael J. Mungo Undergraduate Teaching Award (USC)

2011 Breakthrough Rising Star in Research Award (USC)

1998 Luigi Provasoli Award (Outstanding Paper in the Journal of Phycology)

Professional Affiliations: Association for the Sciences of Limnology and Oceanography,
American Association for the Advancement of Science, Phycological Society of America

II. Research

Peer-Reviewed Publications: (*contribution by a graduate student or postdoc, † contribution by an undergraduate student).

Published or In Press:

64. Bair, E., Z. Guo, **T.L. Richardson**, and J. Lead. 2024. Quantification of palladium-labeled nanoplastics algal uptake by single cell and single particle inductively coupled plasma mass spectrometry. In revision at Environmental Chemistry, 7/14/24, EN24011.R1. ACCEPTED 8/2/2024
63. Jin[†], I.D. and **T.L. Richardson**. 2024. Complementary chromatic acclimation by shifts in phycobiliprotein spectral absorption in the cryptophyte *Hemiselmis pacifica*. Aquatic Microbial Ecology, AME-2023-11-002. Accepted, in press. (TLR is corresponding author)
62. Swanson*, J.A., M.J. Greenwold, **T.L. Richardson**, and J.L. Dudycha. 2024. A test of the gleaner-opportunist trade-off among photosynthetic traits in Cryptophyte algae. Ecosphere doi 10.1002/ecs2.4945.
61. Merritt*, K.A. and **T.L. Richardson**. 2024. Variability in spectral absorption within cryptophyte phycobiliprotein types. Journal of Phycology 60(2): 528-540. doi.org/10.1111/jpy.13439 (TLR is corresponding author).
60. Greenwold*, M.J., K.A. Merritt*, T.L. Richardson, and J.L. Dudycha. 2023. A three-genome ultraconserved element phylogeny of cryptophytes. Protist 174 (6): 125994.
59. Schomaker*, R.A., **T.L. Richardson**, and J.L. Dudycha. 2023. Consequences of light spectra for pigment composition and gene expression in the cryptophyte *Rhodomonas salina*. Environmental Microbiology 25(12): 2669-3772.
58. English*, C.M., Z.B. Kitzhaber*, K.R.I. Sanim, N. Vitzilaios, M.E. Hodgson, **T.L. Richardson**, and M.L. Myrick. 2023. Filter fluorometer calibration without the fluorometer. Applied Spectroscopy 77(9): 1053-1063.
57. Sanim, K.R.I., C. English*, Z.B. Kitzhaber*, M. Kalaitzakis, N. Vitzilaios, M.L. Myrick, M.E. Hodgson, and **T.L. Richardson**. 2023. Autonomous UAS-based water fluorescence mapping and targeted sampling. Journal of Intelligent and Robotic Systems 108(2): DOI: 10.1007/s10846-023-01880-9
56. English*, C., Z. Kitzhaber*, K.R.I. Sanim, M. Kalaitzakis, B. Kosaraju, J.L. Pinckney, M.E. Hodgson, N.I. Vitzilaios, **T.L. Richardson** and M.L. Myrick. 2023. Chlorophyll fluorometer for intelligent water sampling by a small uncrewed aircraft system (sUAS). Applied Spectroscopy 77 (1): 94-105. DOI: 10.1177/00037028221126748
55. Kitzhaber*, Z., C.M. English*, K.R.I. Sanim, M. B. Kalaitzakis, M. Kosaraju, M. Hodgson, N. Vitzilaios, **T.L. Richardson** and M.L. Myrick. 2022. Fluorometer Control and Readout with an Arduino Nano 33 BLE Sense. Applied Spectroscopy 77(2): 220-224. DOI: 10.1177/00037028221128800

54. Hodgson, M.E., M.L. Myrick, N.I. Vitzilaios, **T.L. Richardson**, M. Duggan, K.R.I. Sanim, M. Kalaitzakis, B. Kosaraju, C. English*, and Z. Kitzhaber*. 2022. Mission planning for low altitude drones during water sampling. *Drones* 6(8), article no. 209, DOI: 10.3390/drones6080209
53. K. Sanim, M. Kalaitzakis, B. Kosaraju, Z. Kitzhaber*, C. English*, N. Vitzilaios, M. Myrick, M. Hodgson, and **T.L. Richardson**, "Development of an Aerial Drone System for Water Analysis and Sampling," 2022 International Conference on Unmanned Aircraft Systems, pp. 1601-1607, Dubrovnik, Croatia, June 21-24, 2022, DOI: 10.1109/ICUAS54217.2022.9836122.
52. **Richardson, T.L.** 2022. The colorful world of cryptophyte phycobiliproteins. Invited review, *Journal of Plankton Research* 44(6): 814-826. DOI: 10.1093/plankt/fbac048
51. Heidenreich*, K.M. and **T.L. Richardson**. 2020. Photopigment, absorption, and growth responses of marine cryptophytes to varying spectral irradiance. *Journal of Phycology* 56(2): 507-520. DOI: 10.1111/jpy.12962.
50. Cotti-Rausch*, B.E., M.W. Lomas, E.M. Lachenmyer*, E.G. Baumann, and **T.L. Richardson**. 2019. Size-fractionated biomass and primary productivity of Sargasso Sea phytoplankton. *Deep-Sea Research I*, DOI: 10.1016/j.dsr.2019.103141.
49. Greenwold, M.J., B.R. Cunningham*, E.M. Lachenmyer, J. Pullman†, **T.L. Richardson** and J.L. Dudycha. 2019. Diversification of light capture ability was accompanied by the evolution of phycobiliproteins in cryptophyte algae. *Proceedings of the Royal Society B*, 286: 20190655. <http://dx.doi.org/10.1098/rspb.2019.0655>.
48. **Richardson, T.L.** 2019. Mechanisms, pathways, and the role of small phytoplankton in carbon export from the surface ocean. (Invited) *Annual Review of Marine Science* 11: 57-74. <https://www.annualreviews.org/doi/abs/10.1146/annurev-marine-121916-063627>
47. Faulkner*, S.T., C.M. Rekully*, E.M. Lachenmyer, E. Kara, **T.L. Richardson**, T.J. Shaw, and M.L. Myrick. 2018. Single-cell and bulk fluorescence excitation signatures of seven phytoplankton species during nitrogen depletion and resupply. *Applied Spectroscopy*: 2019 March 73(3):304-312. doi: 10.1177/0003702818812090.
46. Cunningham, B.R.*, M.J. Greenwold, E.M. Lachenmyer, K.M. Heidenreich*, A.C. Davis†, J.L. Dudycha and **T.L. Richardson**. 2019. Light capture and pigment diversity in marine and freshwater cryptophytes. *Journal of Phycology* 55: 552-564.
45. Rekully*, C.M., S.T. Faulkner*, E. Kara, **T.L. Richardson**, T.J. Shaw, and M.L. Myrick. 2018. Asymmetric vs. symmetric filter wheels and associated processing algorithms: Results from asynchronous fluorescence imaging photometer measurements of phytoplankton. *Applied Spectroscopy* 73(1): <https://doi.org/10.1177/0003702818792285>
44. MacIntyre, H.L., J.J. Cullen, S. Rastin, M. Wacławik, K.J. Franklin, N. Poulton, L. Lubelczyk, K. McPhee, **T.L. Richardson**, E. Van Meerssche, and B. Petri. 2018. Inter-laboratory validation of the Serial Dilution Culture – Most Probable Number method for enumerating viable phytoplankton. *Journal of Applied Phycology*: <https://doi.org/10.1007/s10811-018-1541-z>
43. Rekully*, C.M., S.T. Faulkner*, E.M. Lachenmyer, B.R. Cunningham*, T.J. Shaw, **T.L. Richardson** and M.L. Myrick. 2017. Fluorescence excitation spectroscopy for phytoplankton species classification using an all-pairs method: Characterization of a system with unexpectedly low rank. *Applied Spectroscopy* 72(3), DOI: 10.1177/0003702817741278.

42. Lawrenz, E.* and **T.L. Richardson**. 2017. Differential effects of changes in spectral irradiance on photoacclimation, primary productivity and growth in *Rhodomonas salina* (Cryptophyceae) and *Skeletonema costatum* (Bacillariophyceae) in simulated blackwater environments. *Journal of Phycology* 53: 1241-1254. DOI: 10.1111/jpy.12578
41. Vernet, M., **T.L. Richardson**, K. Metfies, E-M. Nöthig, and I. Peeken. 2017. Models of plankton community changes during a warm anomaly in Arctic waters show altered trophic pathways with minimal changes in carbon export. *Frontiers in Marine Science* 31 May 2017: <https://doi.org/10.3389/fmars.2017.00160>.
40. Cotti-Rausch, B.E.*, M.W. Lomas, E.M. Lachenmyer, E.A. Goldman, D.W. Bell*, S.R. Goldberg, and **T.L. Richardson**. 2016. Mesoscale and sub-mesoscale variability in phytoplankton community composition in the Sargasso Sea. *Deep-Sea Research I* 110: 106-122.
39. Pinckney, J.L. and **T.L. Richardson**. 2016. Phytoplankton biodiversity in the oligotrophic northwestern Sargasso Sea. Chapter in: *Aquatic Microbial Ecology and Biogeochemistry: A Dual Perspective*, edited by P.M. Glibert and T. Kana, Springer-Verlag.
38. Gordon, A.R., **T.L. Richardson** and J.L. Pinckney. 2015. Ecotoxicology of bromoacetic acid on estuarine phytoplankton. *Environmental Pollution* 206: 369-375.
37. Tazik, S., M. Pearl, C. Rekully, N. Viole[†], S. DeJong, T. Shaw, **T.L. Richardson**, and M. Myrick. 2015. Focus-independent particle size measurement from streak images: a comparison of multivariate methods. *The Analyst* 140: 1578-1589.
36. Sassenhagen, I., K. Rengefors, **T.L. Richardson** and J.L. Pinckney. 2014. Pigment composition and photoacclimation as keys to ecological success in *Gonyostomum semen* (Raphidophyceae, Stramenopiles). *Journal of Phycology* 50: 1146-1150.
35. Pearl, M., J.A. Swanstrom, L. Bruckman, **T.L. Richardson**, T.J. Shaw, H.M. Sosik, and M.L. Myrick. 2013. Taxonomic classification of phytoplankton with multivariate optical computing, Part III: Demonstration. *Applied Spectroscopy* 67 (6): 640-647.
34. Swanstrom, J., L. Bruckman, M. Pearl, E. Abernathy, **T.L. Richardson**, T.J. Shaw, and M.L. Myrick. 2013. Taxonomic classification of phytoplankton with multivariate optical computing, Part II: Design and experimental protocol of a shipboard fluorescence imaging photometer. *Applied Spectroscopy* 67 (6): 630-639.
33. Swanstrom, J.A., L. Bruckman, M. Pearl, M. Simcock, K. Donaldson[†], **T.L. Richardson**, T.J. Shaw, and M.L. Myrick. 2013. Taxonomic classification of phytoplankton with multivariate optical computing, Part I: Design and theoretical performance of multivariate optical elements. *Applied Spectroscopy* 67 (6): 620-629.
32. Goldman, E.A.*, E.M. Smith and **T.L. Richardson**. 2013. Estimation of chromophoric dissolved organic matter (CDOM) and photosynthetic activity of estuarine phytoplankton using a multiple-fixed-wavelength spectral fluorometer. *Water Research* 47: 1616-1630.
31. Lawrenz, E.*, E.M. Smith and **T.L. Richardson**. 2012. Spectral irradiance, phytoplankton community composition, and primary productivity in a salt marsh estuary, North Inlet, South Carolina, USA. *Estuaries and Coasts* 36(2): 347-364.
30. Bruckman, L.S., **T.L. Richardson**, J. A. Swanstrom, K.A. Donaldson, M. Allora, Jr. [†], T. J. Shaw, and M.L. Myrick. 2012. Linear Discriminant Analysis of Single-Cell Fluorescence Excitation Spectra of Five Phytoplankton Species. *Applied Spectroscopy* 60 (1): 60-65.

29. Lawrenz, E.* and **T.L. Richardson**. 2011. How does the species used for calibration affect chlorophyll *a* measurement by *in situ* fluorometry? *Estuaries and Coasts* 34(4): 872-883.
28. Lawrenz, E.* , E.J. Fedewa[†] and **T.L. Richardson**. 2010. Extraction protocols for the quantification of phycobilins in aqueous phytoplankton extracts. *Journal of Applied Phycology* 23(5): 865-871.
27. Lawrenz, E.* , J.L. Pinckney, M.L. Ranhofer*, H.L. MacIntyre and **T.L. Richardson**. 2010. Spectral irradiance and phytoplankton community composition in a blackwater-dominated estuary, Winyah Bay, SC, USA. *Estuaries and Coasts* 33(5): 1186-1201.
26. **Richardson, T.L.**, E. Lawrenz*, J.L. Pinckney, R.C. Guajardo, E.A. Walker[†], H.W. Paerl and H.L. MacIntyre. 2010. Spectral fluorometric characterization of phytoplankton community composition using the Algae Online Analyser[®]. *Water Research* 44:2461-2472.
25. Hill, L.S., **T.L. Richardson**, L.T.M. Profeta, T.J. Shaw, C.J. Hintz, B.S. Twining, E. Lawrenz* and M.L. Myrick. 2010. Construction, figures of merit and testing of a single-cell fluorescence excitation spectroscopy system. *Review of Scientific Instruments* 81 (1): 013103.
24. MacIntyre, H.L., E. Lawrenz* and **T.L. Richardson**. 2010. Taxonomic discrimination of phytoplankton by spectral fluorescence. Chapter 7 in: *Chlorophyll *a* fluorescence in aquatic sciences: methods and applications* (Eds. Suggett DJ, Prasil O, Borowitzka MA). Springer.
23. Ranhofer, M.L.* , E. Lawrenz*, J.L. Pinckney, C.R. Benitez-Nelson and **T.L. Richardson**. 2009. Cell-specific alkaline phosphatase expression by phytoplankton from Winyah Bay, South Carolina, USA. *Estuaries and Coasts* 32:943-957.
22. **Richardson, T.L.** and G.A. Jackson. 2007. Small phytoplankton and carbon export from the surface ocean, *Science* 315: 838-840.
21. **Richardson, T.L.**, J.L. Pinckney, E.A. Walker[†] and D. Marshalonis. 2006. Photopigment radiolabelling as a tool for determining *in situ* growth rates of the toxic dinoflagellate *Karenia brevis* (Dinophyceae). *European Journal of Phycology*, 41(4): 415-423.
20. **Richardson, T.L.**, G.A. Jackson, M.R. Roman, and H.W. Ducklow. 2006. Spatial and seasonal patterns of carbon cycling through planktonic food webs of the Arabian Sea determined by inverse analysis. *Deep-Sea Research II*, 53: 555-575.
19. Hood, R. R., E.A. Laws, R.A. Armstrong, N.R. Bates, C.W. Brown, C.A. Carlson, F. Chai, S.C. Doney, P.G. Falkowski, R.A. Feely, M.A.M. Friedrichs, M.R. Landry, J.K. Moore, D.M. Nelson, **T.L. Richardson**, B. Salihoglu, M. Schartan, D.A. Toole, and J.D. Wiggert. 2006. Functional group modelling: Progress, Challenges, and Prospects. *Deep-Sea Research II* 53: 459-512.
18. Daniels, R.M., **T.L. Richardson** and H.W. Ducklow. 2006. Food web structure and biogeochemical processes during oceanic phytoplankton blooms: An inverse model analysis. *Deep-Sea Research II* 53: 532-554.
17. See, J.H., L. Campbell, **T.L. Richardson**, J.L. Pinckney, and R. Shen. 2005. Combining new technologies for determination of phytoplankton community structure in the northern Gulf of Mexico. *Journal of Phycology* 41 (2): 305-310.
16. Breed, G., G.A. Jackson, and **T.L. Richardson**. 2004. Sedimentation, carbon export, and food web structure in the Mississippi River plume described by inverse analysis. *Marine Ecology Progress Series* 278: 35-51.
15. **Richardson, T.L.** and J.L. Pinckney. 2004. Monitoring of the toxic dinoflagellate, *Karenia brevis* (Dinophyta), using gyroxanthin-based detection methods. *Journal of Applied Phycology*, 16(4): 315-328.

14. **Richardson, T.L.**, G.A. Jackson, H.W. Ducklow, and M.R. Roman. 2004. Planktonic food webs of the equatorial Pacific at 0°, 140°W: a synthesis of EqPac time-series carbon flux data. *Deep-Sea Research I* 51(9): 1245-1274.
13. **Richardson, T.L.**, G.A. Jackson, and A.B. Burd. 2003. Planktonic food web dynamics in two contrasting regions of Florida Bay, US. *Bulletin of Marine Science* 73(3): 569-591.
12. Bergmann, T., **T.L. Richardson**, H.W. Paerl, J.L. Pinckney, and O. Schofield. 2002. Synergy of light and nutrients on the photosynthetic efficiency of phytoplankton populations from the Neuse River Estuary, North Carolina. *Journal of Plankton Research* 24(9): 923-933.
11. **Richardson, T.L.**, J.L. Pinckney, and H.W. Paerl. 2001. Responses of estuarine phytoplankton communities to nitrogen form and mixing using microcosm bioassays. *Estuaries* 24 (6A): 828-839.
10. Pinckney, J.L., H.W. Paerl, P.A. Tester, and **T.L. Richardson**. 2001. The role of nutrient loading and eutrophication in estuarine ecology. *Environmental Health Perspectives* 109: 699-706.
9. Pinckney, J.L., **T.L. Richardson**, D.F. Millie and H.W. Paerl. 2001. Application of photopigment biomarkers for quantifying microalgal community composition and *in situ* growth rates. *Organic Geochemistry* 32: 585-595.
8. Paerl, H.W., J.D. Bales, L.W. Ausley, C.P. Buzzelli, L.B. Crowder, L.A. Eby, J. Fear, M. Go, B. Peierls, **T.L. Richardson**, and J.S. Ramus. 2001. Ecosystem impacts of 3 sequential hurricanes (Dennis, Floyd, and Irene) on the US's largest lagoonal estuary, Pamlico Sound, NC. *Proceedings of the National Academy of Sciences* 98(10): 5655-5660.
7. Paerl, H.W., C.P. Buzzelli, M. Go, B.L. Peierls, R.A. Luettich, **T.L. Richardson**, J.S. Ramus, L.E. Eby, L.B. Crowder, L.W. Ausley, J. Overton and J.D. Bales. 2001. Water quality and fisheries habitat changes in the Pamlico Sound after three hurricanes: A short-term and long-term perspective. Pp. 255-263, In, J.R. Maiolo, J.C. Whitehead, M. McGee, L. King, J. Johnson and H. Stone (Eds.), *Facing Our Future: Hurricane Floyd and Recovery in the Coastal Plain*. Coastal Carolina Press, Wilmington, NC.
6. Paerl, H.W., J.D. Bales, L.W. Ausley, C.P. Buzzelli, L.B. Crowder, L.A. Eby, M. Go, B. Peierls, **T.L. Richardson**, and J.S. Ramus. 2000. Hurricanes' hydrological ecological effects linger in major US Estuary. *EOS, Transactions of the American Geophysical Union* 81(40): 457, 459, 462.
5. **Richardson, T.L.**, C.E. Gibson, and S.I. Heaney. 2000. Temperature, growth and seasonal succession of phytoplankton from Lake Baikal, Siberia. *Freshwater Biol.* 44(3): 431-440.
4. **Richardson, T.L.**, J.J. Cullen, D.E. Kelley, and M.R. Lewis. 1998. Potential contributions of vertically migrating *Rhizosolenia* to nutrient cycling and new production in the open ocean. *J. Plankton Research* 20 (2): 219-241.
3. **Richardson, T.L.**, A.M. Ciotti, J.J. Cullen, and T.A. Villareal. 1996. Physiological and optical properties of *Rhizosolenia formosa* (Bacillariophyceae) in the context of open ocean vertical migration. *J. Phycol.* 32: 741-757.
2. **Richardson, T.L.** and J.J. Cullen. 1995. Changes in buoyancy and chemical composition during growth of a coastal marine diatom: ecological and biogeochemical consequences. *Mar. Ecol. Prog. Ser.* 128: 77-90.
1. **Richardson, T.L.** and B.M. MacKinnon. 1990. *Heligmosomoides polygyrus*: Effect of exogenous steroid hormones on egg output *in vitro*. *J. Helminthol.* 64: 123-132.

Research Grants Awarded

2023- 2028	“Institute for Clean Water and Healthy Ecosystems”, Research Institutes Funding Program, Office of the Vice-President for Research, University of South Carolina. T.L. Richardson (lead), C.R. Benitez-Nelson, M.E. Hodgson, M.L. Myrick, L. Pennington-Gray, J.L. Pinckney, S.D. Richardson, and N.I. Vitzilaios (\$2,000,000)
2015-2020	“Dimensions: Links Between Spectral Irradiance and Cryptophyte Biodiversity in Environments from Ponds to Oceans”, T.L. Richardson and J.L. Dudycha, National Science Foundation DEB Dimensions in Biodiversity Program, 09/01/15 - 08/31/20 (\$1,956,478, all to USC)
2012-2015	“Research Experiences for Undergraduates (REU) Site: Marine Biogeochemistry at the University of South Carolina”, T.L. Richardson (PI), National Science Foundation GEO Directorate, 09/01/12 – 08/31/15 (\$357,960; all to USC)
2012-2014	“Assessing aeration as a means of improving stormwater pond performance and reducing organic loading to the coastal zone”, South Carolina Sea Grant, E.M. Smith and T.L. Richardson, 02/01/12 - 01/31/14 (\$167,515; all to USC)
2010-2014	“Collaborative Research: Plankton Community Composition and Trophic Interactions as Modifiers of Carbon Export in the Sargasso Sea”, National Science Foundation Biological Oceanography, T.L. Richardson (PI), co-PIs S. Neuer (Arizona State University), and R. Condon (Bermuda Institute for Ocean Sciences), 10/01/10 – 9/31/13 (\$1,162,352 total; \$465,000 USC share)
2010-2013	“Sensors for Characterization of Phytoplankton Size and Community Composition Using Spectral Fluorescence Signatures and Imaging Multivariate Optical Computing (IMOC)”, National Science Foundation Ocean Technology and Interdisciplinary Coordination, T.L. Richardson (PI), M.L. Myrick, and T. Shaw (co-PIs), 06/15/10 – 05/31/13 (\$1,089,543; all to USC)
2007-2010	“In situ classification of bloom-forming phytoplankton by imaging multivariate optical computing (IMOC)”, NSF Ocean Technology and Interdisciplinary Coordination, T. Shaw (lead), M. Myrick, B. Twining, T. Richardson (\$514,498)
2006-2010	“Ferry Mon: Unattended water quality monitoring for large estuarine ecosystems utilizing advanced environmental sensing”, NSF Environmental Engineering Technology, T.L. Richardson and J.L. Pinckney (\$61,743, USC share).
2006-2008	“Potential impacts of upstream land use change on phytoplankton community dynamics in Winyah Bay, SC”, SC Sea Grant Consortium, T.L. Richardson (\$148,584)
2005-2006	“Gulf Oyster Industry Program: A training workshop on pigment-based detection of the harmful dinoflagellate <i>Karenia brevis</i> ”, NOAA-National Sea Grant, T.L. Richardson and J.L. Pinckney (\$29,048)
2001-2004	“ <i>Gymnodinium breve</i> in the Gulf of Mexico: gyroxanthin-based estimates of carbon-specific growth rates under varying environmental conditions”, ECOHAB-EPA STAR, T.L. Richardson and J.L. Pinckney (\$138,058)
2001-2003	“N-GOMEX 2001: Retrospective analysis and modeling of food web dynamics in the Mississippi River Plume”, DOC-NOAA Coastal Ocean Program, G.A. Jackson and T.L. Richardson (\$390,924)
2002	“Gulf Oyster Industry Initiative: development of improved monitoring

- capabilities for *Gymnodinium breve* using gyroxanthin-based detection methods.” NOAA/National Sea Grant, T.L. Richardson and J.L. Pinckney (\$28,813)
- 2000-2003 “Mandated nitrogen loading reductions to the hydrodynamically variable Neuse River Estuary, NC: implications for phytoplankton community structure and broader scale ecosystem dynamics”, USDA-NRI-CGP, H.W. Paerl, M.F. Piehler, and T.L. Richardson (\$324,000)
- 2000-2002 “Phytoplankton and zooplankton community responses to external nitrogen loading in the Pamlico Sound, NC: Mechanisms and links to management of coastal eutrophication”, NC Sea Grant, H.W. Paerl and T.L. Richardson (\$143,142)
- 1998-1999 “Lake Baikal phytoplankton: Primary productivity and adaptations to life under ice”, National Geographic Society Grant for Research and Exploration, T.L. Richardson, S.I. Heaney, and C.E. Gibson (\$15,800)

III. Teaching and Mentoring

Classroom

BIOL/MSCI 750 (Advanced Biol Oceanography)	Spring semester, odd years
BIOL/MSCI 627 (Marine Phytoplankton)	Spring semester, even years
MSCI 102 (The Living Ocean)	2005 to 2018
MSCI 311 (Biology of Marine Organisms)	2018 to 2020

Current Undergraduate Researchers in my Lab (of 62 total since 2005)

Emilia Stachl
Leah Eaken
Sarah Cerone

Other Undergraduate Mentoring

Academic Advisor for 21-35 Marine Science undergraduate students (varied with year; I was released from advising when I started as Chair in 2021)

NOAA Hollings Scholarship Faculty Advisor (National Fellowships & Scholar Programs; 2018-2021)

Faculty Advisor for the Center for Integrated and Experiential Learning (formerly USC Connect; 2019-2021)

Mentoring-related grant:

Research Experiences for Undergraduates (REU) Site: Marine Biogeochemistry at the University of South Carolina”, T.L. Richardson (PI), NSF GEO, 09/01/12 – 08/31/15; \$357,960.

Current Graduate Students

Emily A. Bores (Ph.D., Biological Sciences, 01/23 to present)
Jared M. Rose (Ph.D., Marine Science, 08/24 to present)
Emily Contract (MS, Marine Science, 08/24 to present)
Tyler Pyatt (MS, Biological Sciences, co-advisor with W.J. Strosnider)

Graduate Students Completed & Current Occupation

Kristiaan A. Merritt (Ph.D. 2023, Biological Sciences), Microbiology Instructor, Dept. of Biological Sciences, University of South Carolina.

Kristin M. Heidenreich (MS 2018) – Curator, National Center for Marine Algae & Microbiota (Bigelow Laboratory for Ocean Sciences)

Bridget E. (Bachman) Cotti-Rausch (Ph.D. 2017) – Environmental Protection Specialist, US EPA

Douglas W. Bell (Ph.D. 2017) – Data and Budget Coordinator, National Sea Grant (NOAA)

Lauren Hehman (MS. 2014) – Senior Research Associate, Novozymes, Raleigh, NC

Eric Lachenmyer (MS 2014) – SC Department of Environmental Services

Emily A. Goldman (now Baumann) (M.S. 2011) –Laboratory Manager, School of the Earth, Ocean & Environment

Evelyn Lawrenz (Ph.D. 2011) – formerly a Research Scientist at the Institute of Microbiology, Academy of Sciences of the Czech Republic, Třeboň, CZ, now in private industry in Germany.

Melissa L. Ranhofer (Ph.D. 2009) – Instructor, Environmental Science, Furman University

Jessica L. Shannon (now Kennedy) (MS 2008) – Environmental Scientist, McCormick-Taylor, Inc., Columbia, SC

Postdoctoral Scholars

Brady Cunningham, Ph.D. – Scientist at the CDC, Atlanta, GA

Graduate Student Committees

Current

Elizabeth Bair (PhD, ASPH)

Nayan Mallick (MS, Biological Sciences)

Catherine Schlenker (PhD, Biological Sciences)

Macayla Upright (PhD, ASPH)

Hamid Esraili Zand (PhD, ASPH)

IV. Professional Development Activities

2023	Student Experience Project workshop – San Antonio, TX
2021-2022	SEC Academic Leadership Development Program (one of 4 from USC)
2021	Univ. of Florida SEC Certificate in Multicultural Mentoring
2020	Anti-Racism In and Out of the Classroom – Online course, Education Admin
2018-2019	USC Pipeline for Academy Leaders program

V. Service

Current Professional Service

National Science Foundation – Geosciences Directorate Advisory Committee (1/1/21 to 12/31/24)

Associate Editor, Limnology & Oceanography Methods

Editorial Board, Journal of Plankton Research

Manuscript reviewer (*pro re nata*) for: Applied and Environmental Microbiology, Biogeosciences Discussions, Continental Shelf Research, Deep-Sea Research Part I and II, Estuaries and Coasts, Estuarine and Coastal Shelf Science, European

Journal of Phycology, Freshwater Biology, Geophysical Research Letters, Harmful Algae, Journal of Phycology, Journal of Experimental Marine Biology and Ecology, Journal of Plankton Research, Limnology and Oceanography, L&O Methods, Marine Ecology Progress Series, Nature Communications, Nature Geoscience, Nature Reviews of Microbiology, Optics Express, PLoS One, Water Research.

Proposal reviewer (*pro re nata*) for: National Science Foundation (OCE: Biological Oceanography, Chemical Oceanography, Ocean Technology and Interdisciplinary Coordination; BIO: Division of Environmental Biology), NASA (Ocean Biology and Biogeochemistry Program), NOAA (Ecology and Oceanography of Harmful Algal Blooms), US-Israel BiNational Science Federation, Natural Sciences and Engineering Research Council (Canada), Natural Environment Research Council (UK).

(end of CV)