

Michael R. Stukel
(mstukel@fsu.edu)
(<http://www.myweb.fsu.edu/mstukel/>)

Employment and Contact Information:

Associate Professor
Earth, Ocean, and Atmospheric Science Department
Center for Ocean-Atmospheric Prediction Studies (COAPS)
Florida State University
Rogers (OSB) Rm. 323
117 N Woodward Ave.
(850)645-0960

Interests: Biologically mediated carbon export and new production
²³⁴Th and carbon cycling in the coastal ocean
Plankton trophic dynamics
Biogeochemical and ecological modeling

Education SCRIPPS INSTITUTION OF OCEANOGRAPHY – U. OF CALIFORNIA, SAN DIEGO
Ph.D. - Biological Oceanography - 2011 - Adviser: Michael R. Landry
M.Sc. - Marine Biology - 2010 - Adviser: Michael R. Landry

NORTHWESTERN UNIVERSITY, Evanston, IL
B.A. - Integrated Sci. & Biology - 2004

Post-docs 2011-2014 Horn Point Laboratory, UMCES Advisers: R. Hood & V. Coles
Model Diatom-Diazotroph Assemblages – Amazon Plume
2011-2014 Lamont-Doherty Earth Observatory, Columbia Adviser: H. Ducklow
Seasonal Cycle of Export in the Western Antarctic Peninsula

Appointments 2014-2019 Assistant Professor, Earth, Ocean, and Atmospheric Science Dept, Florida State U.
2019 Associate Professor, Earth, Ocean, and Atmospheric Science Dept, Florida State U.

Peer-Reviewed Publications

**Bold and italicized* = graduate or undergraduate students in the Stukel Lab

2021 and in press

- Stukel, M. R., T. B. Kelly**, M. R. Landry, K. E. Selph, R. Swalethorpe (in press). Sinking carbon, nitrogen, and pigment flux within and beneath the euphotic zone in the oligotrophic, open-ocean Gulf of Mexico. *Journal of Plankton Research*. doi: 10.1093/plankt/fbab001
- Dukhovskoy, D. S. S. L. Morey, E. P. Chassignet, X. Chen, V. J. Coles, L. Cui, C. K. Harris, R. Hetland, T.-J. Hsu, A. J. Manning, **M. R. Stukel**, K. Thyng, J. Wang (in press). Development of the CSOMIO coupled ocean-oil-sediment-biology model. *Frontiers in Marine Science*.
- Selph, K. E., R. Swalethorpe, **M. R. Stukel**, **T. B. Kelly**, A. N. Knapp, K. Fleming, T. Hernandez, M. R. Landry (in press). Phytoplankton community composition and biomass in the oligotrophic Gulf of Mexico. *Journal of Plankton Research*.
- Chabert, P., F. d'Ovidio, V. Echevin, **M. R. Stukel**, M. D. Ohman (2021). Cross-shore flow and implication for carbon export in the California Current Ecosystem: a Lagrangian analysis. *Journal of Geophysical Research: Oceans*. 126: e2020JC016611. doi: 10.1029/2020JC016611
- Ingels, J., R. B. Aronson, C. R. Smith, A. Baco, H. M. Bik, J. A. Blake, A. Brandt, M. Cape, D. Demaster, E. Dolan, E. Domack, S. Fire, H. Geisz, M. Gigliotti, H. Griffiths, K. M. Halanych, C. Havermans, F. Huettman, S. Ishman, S. Kranz, A. Leventer, A. R. Mahon, J. McClintock, M. L. McCormick, B. G. Mitchell, A. Murray, L. Peck, A. Rogers, B. Shoplock, K. E. Smith, B. Steffel, **M. R. Stukel**, A. Sweetman, M. Taylor, A. R.

Thurber, M. Truffer, A. Van de Putte, A. Vanreusel, M. A. Zamoran-Duran. Antarctic Ecosystem Responses following Ice Shelf Collapse and Iceberg Calving: Science Review and Future Research (2021). WIREs Climate Change. 12:e682. doi: 10.1002/wcc.682

2020 and in press

- Stukel, M. R.** (2020). Investigating equations for measuring dissolved inorganic nutrient uptake in oligotrophic conditions. *Limnology and Oceanography: Methods*. 18 (11): 656-672. doi: 10.1002/lom3.10392
- Lüskow, F., E. A. Pakhomov, **M. R. Stukel**, M. Décima (2020). Biology of *Salpa thompsoni* at the Chatham Rise, New Zealand: Demography, growth, and diel vertical migration. *Marine Biology*. 167: 175. doi: 10.1007/s00227-020-03775-x
- Landry, M. R., **M. R. Stukel**, M. Decima (in press). Food-web fluxes support high rates of mesozooplankton respiration and production in the equatorial Pacific. *Marine Ecology Progress Series*. 652:15-32. doi: 10.3354/meps13479
- Shropshire, T. A.**, S. L. Morey, E. P. Chassignet, A. Bozec, V. J. Coles, M. R. Landry, R. Swalethorp, G. Zapfe, **M. R. Stukel**, (2020). Quantifying spatiotemporal variability in zooplankton dynamics in the Gulf of Mexico with a physical-biogeochemical model. *Biogeosciences*. 17: 1-23. doi: 10.5194/bg-17-1-2020
- Stukel, M. R.**, K. A. Barbeau (2020). Investigating the nutrient landscape in a coastal upwelling region and its relationship to the biological carbon pump. *Geophysical Research Letters*. 47. e2020GL087351. doi: 10.1029/2020GL087351
- Kranz, S. A., S. Wang, **T. B. Kelly**, **M. R. Stukel**, R. Goericke, M. R. Landry, N. Cassar (2020). Lagrangian studies of marine primary production: A method comparison in the CCE-LTER upwelling region. *Journal of Geophysical Research: Oceans*. 125, e2019JC015984. doi: 10.1029/2019JC015984
- Wang, S., S. Kranz, **T. B. Kelly**, H. Song, **M. R. Stukel**, N. Cassar (2020). Lagrangian studies of net community production: assessing the effect of diel and multi-day non-steady state factors and vertical fluxes. *Journal of Geophysical Research: Biogeosciences*. 125, e2019JG005569 doi: 10.1029/2019JG005569
- Kahru, M., **M. R. Stukel**, R. Goericke, **T. B. Kelly** (2020). Satellite estimation of carbon export by sinking particles in the California Current. *Deep-Sea Research II* 173. 104639. doi: 10.1016/j.dsr2.2019.104639

2019

- Stukel, M. R.**, M. D. Ohman, **T. B. Kelly**, T. Biard (2019). The roles of suspension-feeding and flux-feeding zooplankton as gatekeepers of particle flux into the mesopelagic ocean. *Frontiers in Marine Science* 6: 397. doi: 10.3389/fmars.2019.00397
- Kelly, T. B.**, P. C. Davison, R. Goericke, M. R. Landry, M. D. Ohman, **M. R. Stukel** (2019). The importance of mesozooplankton vertical migration for sustaining a mesopelagic food web. *Frontiers in Marine Science*. 6:508 doi: 10.3389/fmars.2019.00508
- Fender, C. K.**, **T. B. Kelly**, L. Guidi, M. D. Ohman, M. C. Smith, **M. R. Stukel** (2019). Investigating particle size-flux relationships and the biological pump across a range of plankton ecosystem states from coastal to oligotrophic. *Frontiers in Marine Science*. 6:603. doi: 10.3389/fmars.2019.00603
- Stukel, M. R.**, **T. B. Kelly** (2019). The Carbon:²³⁴Thorium ratios of sinking particles in the California current ecosystem 2: Examination of a thorium sorption, desorption, and particle transport model. *Marine Chemistry* **211**: 37-51. doi: 10.1016/j.marchem.2019.03.005
- Stukel, M. R.**, **T. B. Kelly**, L. I. Aluwihare, K. A. Barbeau, R. Goericke, J. W. Krause, M. R. Landry, M. D. Ohman (in press). The Carbon:²³⁴Thorium ratios of sinking particles in the California Current Ecosystem 1: Relationships with plankton ecosystem dynamics. *Marine Chemistry*. doi: 10.1016/j.marchem.2019.01.003
- Décima, M., **M. R. Stukel**, L. Lopez-Lopez, M. R. Landry (2019). The ecological role of pyrosomes in the Costa Rica Dome. *Limnology and Oceanography*. **64**: 728-743. doi: 10.1002/lno.11071
- Gutierrez-Rodriguez, A., **M. R. Stukel**, A. Lopes dos Santos, T. Biard, R. Scharek, D. Vaultot, M. R. Landry, F. Not (2019). High contribution of Rhizaria (Radiolaria) to vertical export in the California Current Ecosystem revealed by DNA metabarcoding. *ISME Journal*. doi: 10.1038/s41396-018-0322-7
- Bourassa, M. A., T. Meissner, I. Cerovecki, P. S. Chang, D. Xiaolong, G. D. Chiara, C. Donlon, D. S. Dukhovskoy, J. Elya, A. Fore, M. R. Fewings, R. C. Foster, S. T. Gille, B. Haus, S. Hristova-Veleva, H. M. Holbach, Z. Jelenak, J. A. Knaff, S. A. Kranz, A. Manaster, M. Mazloff, C. Mears, A. Mouche, M. Portabella, N. Reul, L. Ricciardulli, E. Rodriguez, C. Sampson, D. Solis, A. Stoffelen, **M. R. Stukel**, B. Stiles, D. Weissman, F. Wentz (2019). Remotely sensed winds and wind stresses for marine forecasting and ocean modeling. *Frontiers in Marine Science*. 6:443 doi: 10.3389/fmars.2019.00443 pdf

2018

- Stukel, M. R.**, M. Décima, M. R. Landry, K. E. Selph (2018). Nitrogen and isotope flows through the Costa Rica Dome upwelling ecosystem: The crucial mesozooplankton role in export flux. *Global Biogeochemical Cycles*. 32: 1815-1832. doi: 10.1029/2018GB005968
- Kelly, T. B.**, R. Goericke, M. Kahru, H. Song, **M. R. Stukel** (2018). Spatial and interannual variability in export efficiency and the biological pump in an eastern boundary current upwelling system with substantial lateral advection. *Deep-Sea Research I*. 140: 14-25. doi: 10.1016/j.dsr.2018.08.007
- Morrow, R. M.**, M. D. Ohman, R. Goericke, **T. B. Kelly**, B. M. Stephens, **M. R. Stukel** (2018). Primary production, mesozooplankton grazing, and the biological pump in the California Current Ecosystem: Variability and response to El Niño. *Deep-Sea Research I*. 140: 52-62. doi: 10.1016/j.dsr.2018.07.012
- Stukel, M. R.**, T. Biard, J. W. Krause, M. Ohman (2018). Giant Phaeodaria in the twilight zone: Their role in the carbon cycle. *Limnology and Oceanography*. 63(6): 2579-2594. doi: 10.1002/lno.10961
- Biard, T., J. Krause, **M. R. Stukel**, M. Ohman (2018). The significance of giant phaeodarians (Rhizaria) to biogenic silica export in the California Current Ecosystem. *Global Biogeochemical Cycles* 32(6): 987-1004. doi: 10.1029/2018GB005877
- Stukel, M. R.**, M. Décima, **T. B. Kelly** (2018). A new approach for incorporating ¹⁵N isotopic data into linear inverse ecosystem models with Markov Chain Monte Carlo sampling. *PLOS ONE* 13(6): e0199123. doi: 10.1371/journal.pone.0199123
- Ducklow, H. W., **M. R. Stukel**, R. Eveleth, T. Jickells, O. Schofield, S. Doney, A. Baker, J. Brindle, R. Chance, N. Cassar (2018). Spring-summer net community production, new production, particle export and related water column biogeochemical processes in the marginal sea ice zone of the Western Antarctic Peninsula 2012-2014. *Philosophical Transactions of the Royal Society of London A*. 376: 20170177 doi: 10.1098/rsta.2017.0177
- Stukel, M. R.**, H. Song, R. Goericke, A. J. Miller (2018). The role of subduction and gravitational sinking in particle export, carbon sequestration, and the remineralization length scale in the California Current Ecosystem. *Limnology and Oceanography*. 63: 363-383. doi: 10.1002/lno.10636

2017

- Coles, V. J., **M. R. Stukel**, M. T. Brooks, A. Burd, B. Crump, M. A. Moran, J. H. Paul, B. M. Satinsky, P. L. Yager, B. L. Zielinski, R. R. Hood (2017). Ocean biogeochemistry modeled with emergent trait-based genomics. *Science*. 358(6367): 1149-1154. doi: 10.1126/science.aan5712
- Stukel, M. R.**, H. W. Ducklow (2017). Stirring up the biological pump: Vertical mixing and carbon export in the Southern Ocean. *Global Biogeochemical Cycles*. 31(9): 1420-1434. doi: 10.1002/2017GB005652
- Stukel, M. R.**, L. I. Aluwihare, K. A. Barbeau, A. M. Chekalyuk, R. Goericke, A. J. Miller, M. D. Ohman, A. Ruacho, H. Song, B. Stephens, M. R. Landry (2017). Mesoscale ocean fronts enhance carbon export due to gravitational sinking and subduction. *Proceedings of the National Academy of Sciences*. 114(6): 1252-1257. doi: 10.1073/pnas.1609435114
- Asher, E. C., J. W. H. Dacey, **M. R. Stukel**, M. C. Long, P. D. Tortell (2017). Processes driving seasonal variability in DMS, DMSP, and DMSO concentrations and turnover in coastal Antarctic Waters. *Limnology and Oceanography*. 62: 104-124. doi: 10.1002/lno.10379

2016

- Stukel, M. R.**, C. R. Benitez-Nelson, M. Décima, A. G. Taylor, C. Buchwald, M. R. Landry (2016). The biological pump in the Costa Rica Dome: An open ocean upwelling system with high new production and low export. *Journal of Plankton Research*. 38(2): 348-365. doi:10.1093/plankt/fbv097
- Décima, M., M. R. Landry, **M. R. Stukel**, J. W. Krause, L. Lopez-Lopez (2016). Costa Rica Dome mesozooplankton biomass and grazing: Amplifying variability through the plankton food web. *Journal of Plankton Research*. 38(2): 317-330. doi: 10.1093/plankt/fbv091
- Landry, M. R., K. E. Selph, M. Décima, A. Gutierrez-Rodriguez, **M. R. Stukel**, A. G. Taylor, A. L. Pasulka (2016). Phytoplankton production and grazing balances in the Costa Rica Dome. *Journal of Plankton Research*. 38(2): 366-379. doi: 10.1093/plankt/fbv089
- Krause, J. W., **M. R. Stukel**, A. G. Taylor, D. A. Taniguchi, A. De Verneil, M. R. Landry (2016). Net biogenic silica production and the contribution of diatoms to new production and organic matter export in the Costa Rica Dome ecosystem. *Journal of Plankton Research*. 38(2): 216-229. doi: 10.1093/plankt/fbv077
- Selph, K. E., M. R. Landry, A. G. Taylor, A. Gutierrez-Rodriguez, **M. R. Stukel**, J. Wokuluk, A. Pasulka

(2016). Phytoplankton production and taxon-specific growth rates in the Costa Rica Dome. *Journal of Plankton Research*. 38(2) 199-215. doi: 10.1093/plankt/fbv063

Conroy, B. J., D. K. Steinberg, **M. R. Stukel**, J. Goes, V. Coles (2016). Meso- and microzooplankton grazing in the Amazon River plume and western tropical North Atlantic. *Limnology and Oceanography*. 61(3): 825-840. doi: 10.1002/lno.10261

2015

Stukel, M. R., M. Kahru, C. R. Benitez-Nelson, M. Décima, R. Goericke, M. R. Landry, M. D. Ohman (2015). Using Lagrangian-based process studies to test satellite algorithms of carbon flux in the eastern North Pacific Ocean. *Journal of Geophysical Research: Oceans*. doi: 10.1002/2015JC011264

Stukel, M. R., E. Asher, N. Couto, O. Schofield, S. Strebel, P. Tortell, H. W. Ducklow. (2015). The imbalance of new and export production in the Western Antarctic Peninsula, a potentially “leaky” ecosystem. *Global Biogeochemical Cycles*. 29: 1400-1420 doi: 10.1002/2015GB005211

Brzezinski, M. A., J. W. Krause, R. M. Bundy, K. A. Barbeau, P. Franks, R. Goericke, M. R. Landry, **M. R. Stukel**. (2015). Enhanced silica ballasting from iron stress sustains carbon export in a frontal zone within the California Current. *Journal of Geophysical Research: Oceans*. 120(7): 4654-4669 doi: 10.1002/2015JC010829

Krause, J. W., M. A. Brzezinski, R. Goericke, M. R. Landry, M. D. Ohman, **M. R. Stukel**, A. G. Taylor. (2015). Variability in diatom contributions to biomass, organic matter production and export across a frontal gradient in the California Current Ecosystem. *Journal of Geophysical Research: Oceans*. 120: 1032-1047. doi: 10.1002/2014jc010472

2014

Stukel, M. R., V. J. Coles, M. T. Brooks, R. R. Hood. (2014). Top-down, bottom-up, and physical controls on diatom-diazotroph assemblage growth in the Amazon River Plume. *Biogeosciences*. 11: 3259-3278. doi:10.5194/bgd-10-13931-2013

Stukel, M. R., K. A. S. Mislán, M. Décima, L. Hmelo. (2014). Detritus in the pelagic ocean. *Eco- DAS IX Symposium Proceedings, ASLO*. doi: 10.4319/ecodas.2014.978-0-9845591-3-8.49

Brum, J. R., J. Morris, M. Décima, **M. R. Stukel**. (2014). Mortality in the oceans: Causes and consequences. *Eco-DAS IX Symposium Proceedings, ASLO*. doi: 10.4319/ecodas.2014.978-0-9845591-3-8.16

2013

Coles, V. J., M. T. Brooks, J. H. Hopkins, **M. R. Stukel**, P. L. Yager, R. R. Hood. (2013). The pathways and properties of the Amazon River Plume in the tropical North Atlantic Ocean. *Journal of Geophysical Research: Oceans*. 118, 1–20, doi:10.1002/2013JC008981

Stukel, M. R., M. D. Ohman, C. R. Benitez-Nelson, M. R. Landry. 2013. Contributions of mesozooplankton to vertical carbon export in a coastal upwelling system. *Mar. Ecol. Prog. Ser.* 491: 47-65 doi: 10.3354/meps10453

Stukel, M. R., M. Décima, K. E. Selph, D. A. Taniguchi, M. R. Landry. 2013. The role of *Synechococcus* in vertical flux in the Costa Rica upwelling dome. *Prog. Oceanogr.* 112-113: 49-59 <http://dx.doi.org/10.1016/j.pocean.2013.04.003>

2009-2012

Stukel, M. R., M. R. Landry, M. D. Ohman, R. Goericke, T. Samo, C. R. Benitez-Nelson. 2012. Do inverse ecosystem models accurately reconstruct plankton trophic flows? Comparing two solution methods using field data from the California Current. *Journal of Marine Systems* 91:20-33 doi:10.1016/j.jmarsys.2011.09.004

Landry, M. R., M. D. Ohman, R. Goericke, **M. R. Stukel**, K. A. Barbeau, R. Bundy, M. Kahru. 2012. Pelagic Community responses to a deep-water front in the California Current Ecosystem: Overview of the A-front study. *Journal of Plankton Research*. doi: 10.1093/plankt/fbs006

Stukel, M. R., M. R. Landry, C. Benitez-Nelson, R. Goericke. 2011. Trophic cycling and carbon export relationships in the California Current Ecosystem. *Limnol. Oceanogr.* 56:1866-1878

Stukel, M. R., M. R. Landry, and K. E. Selph. 2011. Nanoplankton mixotrophy in the eastern equatorial Pacific. *Deep-Sea Res. II* 58:378-386

Selph, K. E., M. R. Landry, A. G. Taylor, E. J. Yang, C. I. Measures, J. J. Yang, **M. R. Stukel**, S. Christenson, and

- R. R. Bidigare. 2011. Spatially-resolved taxon-specific phytoplankton production and grazing dynamics in relation to iron distributions in the equatorial Pacific between 110 and 140°W. *Deep-Sea Res. II* 58: 358-377
- Stukel, M. R.**, M. R. Landry. 2010. Contribution of picophytoplankton to carbon export in the equatorial Pacific: A reassessment of food web flux inferences from inverse models. *Limnol. Oceanogr.* 55:2669-2685
- Landry, M. R., M. D. Ohman, Goericke, R. **M. R. Stukel**, and K. Tsyrklevich. 2009. Lagrangian studies of phytoplankton growth and grazing relationships in a coastal upwelling ecosystem off Southern California. *Prog. Oceanogr.* 83:208-216

Projects Funded

- Quantifying processes driving interannual variability in the biological carbon pump in the Western Antarctic Peninsula. 3/1/2020 – 2/28/2023. \$163,549 to FSU. National Science Foundation. **PI: Michael Stukel (FSU)**
- Collaborative research: Assessing the control by multiple micropredators on bacterial communities in estuarine environments and characterization of prey lysis products resulting fr. 3/1/2020 – 2/28/2023. \$940,000 (\$50,000 to FSU). PI: Henry Williams (FAMU). Co-PIs: Ahkinyala Abdulla (VUU), Huan Chen (MagLab), Sven Kranz (FSU), Michael Stukel (FSU).
- Collaborative Research: Mesoscale variability in nitrogen sources and food-web dynamics supporting larval southern bluefin tuna in the eastern Indian Ocean. 8/1/2019 – 7/30/2022. \$527,785 to FSU. National Science Foundation. PI: Michael Landry (UCSD), Co-PIs: Karen Selph (UH), **Michael Stukel (FSU)**, Sven Kranz (FSU), Angela Knapp (FSU), David Die (RSMAS).
- Collaborative Research: Quantifying trophic roles and food web ecology of salp blooms of the Chatham Rise: 5/1/2018 – 4/30/2021. \$345,985 to FSU. National Science Foundation. **PI: Michael Stukel (FSU)**. Co-PI: Karen Selph (U Hawaii)
- Development of Environmentally-Driven Larval Mortality and Age-0 Abundance Indices for a Suite of Coastal Pelagic Species in the Gulf of Mexico. 4/1/2018 – 3/31/2020. \$117,715. National Oceanic and Atmospheric Administration. PI: Steve Morey (FSU), Co-PIs: **Michael Stukel (FSU)**, Taylor Shropshire (FSU)
- Consortium for Simulation of Oil-Microbial Interactions in the Ocean: 1/1/2019-12/31/2019. \$2,769,179 to FSU. Gulf of Mexico Research Initiative. PI: Eric Chassignet (FSU). Co-PIs: Steve Morey (FSU), **Michael Stukel (FSU)**, Olivia Mason (FSU), Dmitry Dukhovskoy (FSU), Victoria Coles (UMCES), Rob Hetland (TAMU), Courtney Harris (VIMS), Tian-Jian Hsu (U Del), Andrew Manning (H R Wallinford)
- Predicting, Validating, and Understanding Zooplankton Distributions from Space in an Eddy Rich Ocean: 1/1/2017 – 12/31/2019. Award Amount: \$1,038,803 (\$229,965 to FSU). National Aeronautics and Space Administration. PI: Victoria Coles (UMCES). Co-PIs: Kenneth Rose (UMCES), Jamie Pierson (UMCES), Greg Silsbe (UMCES), Klaus Huebert (UMCES), **Michael Stukel (FSU)**
- Atlantic Bluefin Tuna: Nitrogen Sources and Food-Web Effects on Larval Habitat Quality in the Gulf of Mexico: June 2017 – May 2020. Award Amount: \$1,590,476 (\$487,515 to FSU). Funding Source: National Oceanic and Atmospheric Administration. PI: John Lamkin (NOAA SEFSC). Co-PIs: Michael Landry (UCSD), Karen Selph (U Hawaii), **Michael Stukel (FSU)**, Angela Knapp (FSU).
- ILTER: CCE-ILTER Phase III: Ecological Transitions in an Eastern Boundary Current Upwelling Ecosystem Duration: August 2016 - July 2022. Award Amount: \$6,762,000 (\$228,663 to FSU). Funding Source: National Science Foundation. PI: Mark Ohman (UCSD). Co-PIs: Kathy Barbeau (UCSD), Lihini Aluwihare (UCSD), James Connors (UCSD), Peter Franks (UCSD), Michael Landry (UCSD), Arthur Miller (UCSD), **Michael Stukel (FSU)**
- Analysis of Th-234 Samples from TAN1604 Cruise: January 2017 - December 2017, Award Amount: \$4,560. Funding Source: National Institute of Water and Atmosphere Research (NewZealand). **PI: Michael Stukel (FSU)**
- FYAP: Assessing Spatial Patterns of Carbon and Nitrogen Fluxes in the Gulf of Mexico: May 2015 – August 2015. Award Amount: \$20,000. Funding Source: Florida State University

Teaching

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| 2020 | Taught EVR1001 - Intro to Env. Sci. for 482 undergraduate non-science major students |
| 2020 | Taught OCB5050 - Biological Oceanography for graduate students |
| 2020 | Taught OCC5930 – Biogeochemical and ecological modeling for graduate students |
| 2020 | Taught OCE4906 – Applied Math for Environmental Scientists for undergraduate major students |
| 2019 | Taught OCB5930 – Zooplankton Ecology for graduate students |

2019 Taught EVR1001 - Intro to Env. Sci. for 496 undergraduate non-science major students
 2019 Invited lecturer at Croucher Summer Course – Hong Kong University of Science and Technology
 2019 Taught OCB5050 - Biological Oceanography for graduate students
 2018 Taught EVR1001 - Intro to Env. Sci. for 496 undergraduate non-science major students
 2018 Taught OCB5930 – Zooplankton Ecology for graduate students
 2017 Taught EVR1001 - Intro to Env. Sci. for 496 undergraduate non-science major students
 2016 Taught EVR1001 - Intro to Env. Sci. for 496 undergraduate non-science major students
 2016 Taught OCB5050 – Biological Oceanography for graduate students
 2016 Taught OCB5930 – Zooplankton Ecology for graduate students
 2016 Helped develop EVR1001L online laboratory course for non-science major students
 2015 Taught EVR1001 – Intro to Env. Sci. for ~150 undergraduate non-science major students

Advising: Ph.D. Students

Taylor Shropshire (FSU - Ph.D. conferred June, 2020)
 Tom Kelly (FSU - Ph.D. expected Oct., 2020)
 Natalie Yingling (FSU - Ph.D. expected 2023)
 Christian Fender (FSU - Ph.D. expected 2023)
 John Irving (FSU - Ph.D. expected 2023)

Advising: Masters Students

Kehinde Opeyemi (FSU – M.Sc. expected 2022)
 Taylor Shropshire (FSU – M.Sc. conferred May 2020)
 Tom Kelly (FSU - M.Sc. conferred May 2018).

Advising: Undergraduate Students

Gabriela Vega (FSU undergraduate, 2016-2017)
 Rebecca Morrow (FSU undergraduate, 2016-2017)
 Linda Wong (FSU undergraduate, 2017-2018)
 Matthew Smith (FSU undergraduate, 2018-2020)

Journal Editor

Associate editor, Global Biogeochemical Cycles (2019 – present)

Outreach

2018 Invited speaker: Tallahassee March for Science
 2016 Collaboration with M. Helman and R. Daniel on Short Dance Film (“Erlenmeyer Waltz”)
 2016 COAPS Open House presentation (“Plankton Do the Strangest Things”)
 2015 Participated in a panel about climate change for FSU undergraduates at Strozier Library
 2012 Mentored undergraduate REU student (Michael Macon) at Horn Point Laboratory
 2012 Led session on reading scientific manuscripts for undergraduate students
 2009 Reality Changers (<http://realitychangers.org/>) – Tutored under-privileged high school students
 2006-2008 Academic Connections (UCSD, <http://academicconnections.ucsd.edu/>) – Co-designed and co-taught a three-week biological oceanography course for advanced high school students each summer
 Summer 2005 Aquatic Adventures (<http://oceandiscoveryinstitute.org/>) – Helped teach 2-week marine biology course for underprivileged youth in San Diego

Sessions chaired at conferences

Pelagic Tunicates: Interactions with the Lower Food Web, Higher Trophic Levels, and Effects on Biogeochemistry. Decima, M., Stukel, M. R., Gutierrez-Rodriguez, A., & Nodder, S. (2020, February). Ocean Sciences Meeting, San Diego, CA.
 Cross-shore fluxes in ocean boundary currents: Biogeochemical and ecological consequences. Ohman, M. D., d'Ovidio, F., Stukel, M. R., & Keister, J.. (2020, February). Ocean Sciences Meeting, San Diego, CA.
 Surface currents in the coupled ocean-atmosphere system workshop. Patterson, M., Zhu, J., Bourassa, M., Drushka, K., Elipot, S., Farrar, T., Gaube, P., Geille, S., Seo, H., Stukel, M., & Subramanian, A. (2020, February). Symposium conducted at the meeting of US CLIVAR, La Jolla, CA.
 Circulation, Biogeochemistry, and carbon cycling in ocean margins. Conveners: Zhiqiang Liu, Igor Semiletov, Michael Stukel, Ye Liu, Xin Liu, Wei-Jun Cai. Fourth Xiamen Symposium on Marine Environmental Sciences (XMAS-IV). Xiamen, China (2019)
 From Plankton Food Webs to Global Biogeochemical Cycles: Using Mechanistic Understanding to Scale Up

Microbial and Planktonic Processes. Moderators: M. R. Stukel; M. Decima; C. Robinson; P. Serret. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. New Orleans, LA (2016)

Abstracts and non-peer reviewed publications

- Stukel, M. R., T. B. Kelly.** Biological and physical processes driving the biological pump in the California Current Ecosystem. Fourth Xiamen Symposium on Marine Environmental Sciences (XMAS-IV). Xiamen, China (2019)
- Kelly, T. B., R. M. Morrow,** H. Song, M. D. Ohman, R. Goericke, B. M. Stephens, **M. R. Stukel.** California Current Ecosystem: Are there inter-annual changes in primary production, mesozooplankton grazing & export efficiency? Ocean Carbon and Biogeochemistry Workshop. Woods Hole, MA (2018).
- Stukel, M.,** T. Biard, J. Krause, M. Ohman. Large Phaeodaria in the Twilight Zone: Their Roles in the Carbon and Silica Cycles. Ocean Carbon and Biogeochemistry Workshop. Woods Hole, MA (2018).
- Coles, V. J., **M. R. Stukel,** M. A. Moran, R. R. Hood. Metabolic function not microbial taxonomy determines ocean biogeochemical gradients in a gene based ecosystem model. Ocean Sciences Meeting. Association for the Sciences of Limnology and Oceanography. Portland, OR (2018)
- Krause, J. W., T. Biard, **M. R. Stukel,** M. D. Ohman. Unravelling the contribution of large Phaeodaria (Rhizaria) to silicon fluxes: Insights from the California Current Ecosystem Long Term Ecological Research Site. Ocean Sciences Meeting. Association for the Sciences of Limnology and Oceanography. Portland, OR (2018)
- Stukel, M. R.,** H. W. Ducklow. Stirring up the biological pump: Vertical mixing and carbon export in the Southern Ocean. Ocean Sciences Meeting. Association for the Sciences of Limnology and Oceanography. Portland, OR (2018)
- Stukel, M. R.,** M. Decima, **T. B., Kelly,** M. R. Landry, K. E. Selph. Carbon, nitrogen, and isotope flows through the planktonic ecosystem of the Costa Rica Dome: Primary production to export. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. Honolulu, HI (2017)
- Gutierrez-Rodriguez, A., **M. R. Stukel,** A. Lopes dos Santos, T. Biard, D. Vaultot, M. R. Landry, F. Not. Protistan plankton diversity and species-specific contribution to oceanic carbon export in the California Current Ecosystem revealed by DNA metabarcoding. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. Honolulu, HI (2017)
- Kelly, T. B., M. R. Stukel.** Impacts of El Niño on export production in the California Current Ecosystem. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. Honolulu, HI (2017)
- Ohman, M. D., L. Aluwihare, K. A. Barbeau, R. Goericke, M. Kahru, M. R. Landry, D. L. Rudnick, U. Send, **M. R. Stukel.** Response of the California Current pelagic ecosystem to El Niño 2015-16. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. Honolulu, HI (2017)
- Connell, P. E., **M. R. Stukel,** T. B. Kelly, J. A. Fuhrman, D. E. Hammond, D. A. Caron. Microbial carbon fluxes at a coastal ocean site: An inverse ecosystem modeling analysis. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. Honolulu, HI (2017)
- Stukel, M. R.,** H. Song; R. Goericke; A. J. Miller. The role of subduction and gravitational sinking in particle export, carbon sequestration, and the remineralization length scale in the California Current Ecosystem. Ocean Carbon and Biogeochemistry Meeting. Woods Hole, MA. 2016
- Kelly, T. B.; P. C. Davison; M. R. Landry; M. D. Ohman; R. Goericke; **M. R. Stukel.** The importance of diel vertical migrations of mesozooplankton for supporting a mesopelagic ecosystem: an Inverse Modeling Approach in the California Current. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. New Orleans, LA (2016)
- Coles, V. J.; **M. R. Stukel;** R. R. Hood; M. A. Moran; J. H. Paul; B. Satinsky; B. Zielinski; P. L. Yager. Modeling the nitrogen cycle one gene at a time. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. New Orleans, LA (2016)
- Stukel, M. R.;** M. R. Landry; R. Goericke; H. Song, A. J. Miller; M. D. Ohman; K. Barbeau. Enhanced gravitational and advective particulate carbon export at a frontal region in the southern California Current Ecosystem. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. New Orleans, LA (2016)
- Landry, M. R.; **Stukel, M. R.;** Décima, M. Indirect fluxes through the microbial food web support high respiration and growth rates of mesozooplankton in the Equatorial Pacific. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, Grenada, Spain, 2015

- Stukel, M. R.**, V. J. Coles, M. T. Brooks, R. R. Hood. Top-down, bottom-up and physical controls on diatom-diazotroph assemblage growth in the Amazon River plume. Ocean Carbon and Biogeochemistry Meeting. Woods Hole, MA. 2014
- Stukel, M. R.**; Ducklow, H. W.; Schofield, O.; Erickson, M. E.; Strebel, S.; The balance of new and export production in the Bismarck Strait, Western Antarctic Peninsula. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Honolulu, HI. 2014
- Pedulli, M.; Ducklow, H. W.; Bisagni, J. J.; **Stukel, M. R.**; Pilskaln, C. H.; Export production for the waters off the Western Antarctic Peninsula (WAP) Region. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Honolulu, HI. 2014
- Landry, M. R.; **Stukel, M. R.**; Décima, M.; Selph, K. E.; Taylor, A. G.; Grazer regulation of carbon export in the Costa Rica Dome. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Honolulu, HI. 2014
- Coles, V. J.; Hood, R. H.; **Stukel, M. R.**; Yager, P. L.; Modeling metagenomes and metatranscriptomes along the Amazon River Plume gradient. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting, Honolulu, HI. 2014
- Stukel, M. R.**, M. R. Landry. ²³⁴Thorium and Carbon Export associated with a Frontal Region in the California Current System. Ocean Carbon and Biogeochemistry Meeting. Woods Hole, MA. 2013
- Krause, J.W., M. A. Brzezinski, **M. R. Stukel**, M.R., Landry, M.D. Ohman. Biogenic silica cycling across frontal gradients in the California Current Ecosystem. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. New Orleans, LA, USA. 2013.
- Brzezinski, M. A., J. W. Krause, K. A. Barbeau, R. Bundy, **M. R. Stukel**, M. R. Landry, M. D. Ohman. Variable influence of iron on siliceous biomass and production in a frontal zone within the California Current. Association for the Sciences of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting. New Orleans, LA. 2013
- Alin, S. S. Siedlecki, B. Hales, J. Mathis, W. Evans, **M. Stukel**, G. Gaxiola-Castro, J. M. Hernandez-Ayon, L. Juranek, M. Goni, G. Turi, J. Needoba, E. Mayorga, Z. Lachkar, N. Gruber, J. Hartmann, N. Moosdorf, R. Feely, F. Chavez. Coastal carbon synthesis for the continental shelf of the North American Pacific Coast (NAPC): Preliminary results. Ocean Carbon and Biogeochemistry News. 5(1).
- Stukel, M. R.**, M. R. Landry, K. E. Selph, M. Décima, D. A. Taniguchi. The role of *Synechococcus* in carbon export in the Costa Rica Dome: Vertical transport within mesozooplankton fecal pellets. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Salt Lake City, UT. 2012
- Coles, V. J., M. T. Brooks, R. R. Hood, J. P. Montoya, **M. R. Stukel**, P. L. Yager. The role of the Amazon River Plume in structuring upper ocean stratification, biochemistry, and biological communities in the Western Tropical North Atlantic. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Salt Lake City, UT. 2012
- Brooks, M. T., V. J. Coles, **M. R. Stukel**, R. R. Hood. Modeling the Amazon River Plume. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Salt Lake City, UT. 2012
- Hood, R. R., V. J. Coles, M. T. Brooks, **M. R. Stukel**. Modeling emergent microbial community structure and biochemical cycling in the Amazon River and Plume. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Salt Lake City, UT. 2012
- Stukel, M. R.** 2011. Biological control of vertical carbon flux in the California Current and equatorial Pacific. Ph.D. Dissertation. University of California, San Diego
- Stukel, M. R.**, M. R. Landry. Carbon cycling in the equatorial Pacific: Export driven by large phytoplankton. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Portland, OR. 2010
- Selph, K. E., M. R. Landry, C. I. Measures, A. G. Taylor, E. Yang, **M. R. Stukel**, J. Yang, S. Christensen, R. Bidigare. Eastern Equatorial Pacific phytoplankton: the relative importance of Fe, light, and grazing in community structure. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Portland, OR. 2010
- Stukel, M. R.** Cruise Report. CCE-P0904 Cruise. R/V New Horizon: Apr. 22 – May 3. CCE-LTER Datazoo.
- Stukel, M. R.**, M. R. Landry, C. R. Benitez-Nelson, R. Goericke. Trophic cycling and vertical carbon flux in the CCE. Long-Term Ecological Research, All Scientists Meeting. Estes Park, CO. 2009.
- Stukel, M. R.**, M. R. Landry, C. R. Benitez-Nelson, R. Goericke. Carbon export and the fate of primary productivity in the California Current Ecosystem. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Orlando, FL. 2008

Stukel, M. R., M. R. Landry, C. R. Benitez-Nelson. Thorium export in the California Current Ecosystem. Long-Term Ecological Research, All Scientists Meeting. Estes Park, CO. 2006.

Stukel, M. R., M. R. Landry, K. E. Selph. Mixotrophs are major grazers in the equatorial Pacific. Association for the Sciences of Limnology and Oceanography (ASLO) Ocean Sciences Meeting. Honolulu, HI. 2006.

Scientific Service (Peer-Reviewer):

Journals: Limnology and Oceanography, Journal of Geophysical Research: Oceans, Deep-Sea Research I, Deep-Sea Research II, Biogeosciences, Progress in Oceanography, Aquatic Microbial Ecology, PLOS One, Journal of Oceanography, Biogeochemistry, Ecological Modelling, Elementa: Science of the Anthropocene, Global Change Biology, Estuarine Coastal and Shelf Science, Proceedings of the Royal Society B, Journal of Plankton Research, Continental Shelf Research, Marine Chemistry, Scientific Reports, Global Biogeochemical Cycles

Proposals: NSF Biological Oceanography, NSF Chemical Oceanography, NSF Polar Programs, National Environment Research Council (UK), Czech Science Foundation, Deutsche Forschungsgemeinschaft (German Research Foundation), Natural Sciences and Engineering Research Council of Canada

Fellowships

2009-2010 NASA NESSF Graduate Fellowship

2008 Wyers Fellowship

2005-2008 NSF Graduate Fellowship

2004-2005 Henry L. & Grace Doherty Fellowship

Cruise Experience (ship-time: 503 days)

CCE-P1908 - Measured carbon export and new production in a coastal jet in the CCE

SalpPOOP - Salp grazing incubations, thorium, sediment traps in the Chatham Rise, New Zealand

NF18 - Thorium, sediment traps, N₂ fixation, ¹⁵N and ¹³C uptake measurement in the Gulf of Mexico

CCE-P1706 - Measured carbon export and new production in a coastal jet in the CCE

NF17 - Thorium, sediment traps, ¹⁵N and ¹³C uptake measurement in the oligotrophic Gulf of Mexico

C-SNOW - Deployed sediment traps and zooplankton net tows in support of Carbon Flux Explorer calibration

CCE-P1604 - Measured carbon export and new production during El Nino conditions in the CCE

CCE-P1408 - Measured carbon export and new production during "Warm Blob" conditions in the CCE

PAL2013 - Measured carbon export and new production off the Western Antarctica Peninsula

CCE-P1208 - Measured carbon export and new production in a frontal region in the CCE

PAL2012 - Measured carbon export and new production off the Western Antarctica Peninsula

ANACONDAS - Measured phytoplankton growth and protozoan grazing in the Amazon River Plume

CCE-P1106 - Measured carbon export and new production in a frontal region in the CCE

CRD-2010 - Measured carbon export, new production, and mesozooplankton gut phycoerythrin

CCE-P0904 - Chief Scientist on a cruise addressing the ecological and biogeochemical role of fronts in the CCE

CCE-P0810 - Continued ²³⁴Th & sediment trap measurements and added new production measurements

CCE-P0704 - Continued ²³⁴Th measurements and added sediment trap deployments as independent confirmation

CCE-P0605 - Measured carbon export in the CCE using ²³⁴Th disequilibrium measurements

EB-05 - Investigated mixotrophic nano- and microflagellates in the eastern equatorial Pacific