





SASHA JANE KRAMER

 skramer@mbari.org  +1(831) 775-1750
 @SashaOceans  sashajane19

EDUCATION

2022 **Ph.D. Marine Science**

University of California Santa Barbara, Santa Barbara, CA.

Advisor: Dr. David Siegel, **Committee:** Dr. Alyson Santoro, Dr. Mark Brzezinski

Thesis title: Characterizing global surface ocean phytoplankton community composition from in situ sampling and remote sensing

2016 **B.A. Earth and Oceanographic Science & Environmental Studies**

Bowdoin College, Brunswick, ME, cum laude.

Departmental honors in Earth and Oceanographic Science, minor in English

Thesis title: Determining phytoplankton community structure from ocean color at the Martha's Vineyard Coastal Observatory

PROFESSIONAL APPOINTMENTS

2023-present **Simons Foundation Postdoctoral Fellow in Marine Microbial Ecology**
MBARI, Moss Landing, CA. Research sponsor: Dr. Colleen Durkin.

2022-2023 **Postdoctoral Researcher**
MBARI, Moss Landing, CA. Advisor: Dr. Colleen Durkin.

2016-2022 **Graduate Student Researcher**
UC Santa Barbara, Santa Barbara, CA. Advisor: Dr. Dave Siegel.

2015 **Summer Student Fellow**
WHOI, Woods Hole, MA. Advisor: Dr. Heidi Sosik.

2014 **Doherty Coastal Studies Fellow**
Bowdoin College, Brunswick, ME. Advisor: Dr. Collin Roesler.

AWARDS AND FELLOWSHIPS

2023-2026 Postdoctoral Fellowship in Marine Microbial Ecology, *Simons Fdn.* - \$270,000
2022 Outstanding Reviewer, *Limnology and Oceanography*
2017-2021 National Defense Science and Engineering Graduate Fellowship, *ONR* - \$153,600
2020 Earth Research Institute Student Travel Award, *UCSB* - \$500
2018 Ocean Optics Student Travel Award, *The Oceanography Society* - \$750
2017 Ocean Optics Travel Award, *WHOI OCB* - \$1,000
2016 Next Generation Student Travel Award, *The Oceanography Society* - \$500
2015-2016 Grua/O'Connell Research Award, *Bowdoin College* - \$1,500
2015 Summer Student Fellowship, *WHOI/NSF REU* - \$5,625
2014 Doherty Coastal Studies Research Fellowship, *Bowdoin College* - \$4,000
2012 Faculty Scholarship, *Bowdoin College*

GRANTS AWARDED

- 2021-2022 C-SAW: Time domain controls on carbon storage, release, and transformation in coastal and estuarine waters following extreme events. *WHOI Ocean Carbon and Biogeochemistry*. Workshop co-coordinator (Lead: Dr. Chris Osburn). **Total award:** \$71,120.
- 2021-2022 Ash in the ocean: what is the biological response & consequence of volcanic eruptions? *NASA Earth Science*. Co-Investigator (Lead PI: Dr. Kelsey M. Bisson). **Total award:** \$25,840.
- 2018 Plumes and Blooms in the Wake of the Mudslide. *Coastal Fund, UC Santa Barbara*. Awarded to Sasha J. Kramer and David A. Siegel. **Total award:** \$7,000.
- 2017 Phytoplankton Community Composition in the Santa Barbara Channel. *Coastal Fund, UC Santa Barbara*. Awarded to Sasha J. Kramer and David A. Siegel. **Total award:** \$3,240.

PUBLICATIONS

Soon to be submitted

Kramer, S.J., N. Haëntjens, M.S. Brown, C.S. Roesler. Multi-parameter assessment of phytoplankton community composition from absorption, reflectance, and quantitative imaging. *In prep for submission*.

Kramer, S.J., E.L. Jones, N.L. Paul, M.L. Estapa, T.A. Rynearson, A.E. Santoro, C.A. Durkin. Predictive relationships among surface phytoplankton communities, carbon export, and flux mechanisms. *In prep for submission*.

In review and in revision

Kramer, S.J., D. Catlett, L.M. Bolaños, A.P. Chase, M.J. Behrenfeld, E.S. Boss, E.T. Crockford, S.J. Giovannoni, J.R. Graff, N. Haëntjens, L. Karp-Boss, E.E. Peacock, C.S. Roesler, H.M. Sosik, D.A. Siegel. Toward a synthesis of phytoplankton community composition methods for global-scale application. *In review at Limnology and Oceanography: Methods*. <https://www.biorxiv.org/content/10.1101/2023.09.07.556589v1>

Meyer, M. Brzezinski, M.G., M.R. Cohn, **S.J. Kramer**, N.L. Paul, G. Sharpe, A.K. Niebergall, S. Gifford, N. Cassar, A. Marchetti. Primary production dynamics during the decline phase of the North Atlantic annual spring bloom. *In review at Global Biogeochemical Cycles*. <https://doi.org/10.1101/2023.05.18.541304>

C.S. Rousseaux, Cetinić, I., I.T. Carroll, A.P. Chase, **S.J. Kramer**, P.J. Werdell, D.A. Siegel, H.M. Dierssen, D. Catlett, A. Neeley, I.M. Soto-Ramos, and others. Phytoplankton composition from sPACE: requirements, opportunities, and challenges. *Accepted at Remote Sensing of Environment*. <https://doi.org/10.22541/essoar.169186303.34314907/v1>

Peer reviewed

Graff, J.R., N.B. Nelson, M. Roca-Martí, E. Romanelli, **S.J. Kramer**, Z. Erickson, I. Cetinić, K.O. Buesseler, et al. (2023). Reconciliation of total particulate organic carbon and nitrogen measurements determined using contrasting methods in the North Pacific Ocean as part of the NASA EXPORTS field campaign. *Elementa: Science of the Anthropocene*, 11(1), 00112. <https://doi.org/10.1525/elementa.2022.00112>

Bisson, K.M., P.J. Werdell, A.P. Chase, **S.J. Kramer**, B.B. Cael, E.S. Boss, L. McKinna, M.J. Behrenfeld (2023). Informing ocean color inversion products by seeding with ancillary observations. *Optics Express*, 31(24), 40557-40572. <https://doi.org/10.1364/OE.503496>

Kramer, S.J., K.M. Bisson, C. Mitchell (2023). What data are needed to detect wildfire effects on coastal ecosystems? A case study during the Thomas Fire. *Frontiers in Marine Science*, 10, 1-12. <https://doi.org/10.3389/fmars.2023.1267681>

Bisson, K.M., S. Gassó, N. Mahowald, S. Wagner, B. Koffman, S.A. Carn, S. Deutsch, E. Gavel, **S.J. Kramer**, N. Krotkov, C. Mitchell, M.E. Pritchard, K. Stamieszkin, and C. Wilson (2023). Observing ocean ecosystem responses to volcanic ash. *Remote Sensing of Environment*, 296, 1-13. <https://doi.org/10.1016/j.rse.2023.113749>.

Fox, J., **S.J. Kramer**, J.R. Graff, M.J. Behrenfeld, E. Boss, G. Tilstone, K. Halsey (2022). An absorption-based approach to improved estimates of phytoplankton biomass and net primary production. *Limnology and Oceanography: Letters*, 1-8. <https://doi.org/10.1002/lol2.10275>.

Kramer, S.J., D.A. Siegel, S. Maritorena, D. Catlett (2022). Modeling surface ocean phytoplankton pigments from hyperspectral remote sensing reflectance on global scales. *Remote Sensing of Environment*, 270, 1-14, <https://doi.org/10.1016/j.rse.2021.112879>.

Diaz, B., B. Knowles, C.T. Johns, C.P. Laber, K.G.V. Bondoc, L. Haramaty, E.L. Harvey, **S.J. Kramer**, L. Bolanos, D.P. Lowenstein, H. Fredricks, J.R. Graff, T. Westberry, K.D.A. Mojica, N. Haëntjens, N. Baetge, P. Gaube, E. Boss, C.A. Carlson, M.J. Behrenfeld, B.A.S. Van Mooy, and K.D. Bidle (2021). Seasonal mixed layer depth shapes phytoplankton physiology, viral infection, and accumulation in the North Atlantic. *Nature Communications*, 12, 1–16. <https://doi.org/10.1038/s41467-021-26836-1>.

Siegel, D.A.,...**S.J. Kramer**, and others (2021). Overview of the EXport Processes in the Ocean from RemoTe Sensing (EXPORTS) Northeast Pacific Field Deployment. *Elementa: Science of the Anthropocene*, 9(1), 1-31, <https://doi.org/10.1525/elementa.2020.00107>.

Kramer, S.J., K.M. Bisson, and A.D. Fischer (2020). Observations of phytoplankton community composition in the Santa Barbara Channel during the Thomas Fire. *Journal of Geophysical Research: Oceans*, 125(12), 1-16, <https://doi.org/10.1029/2020JC016851>.

Chase, A.P., **S.J. Kramer**, N. Haëntjens, E.S. Boss, L. Karp-Boss, M. Edmondson, and J.R. Graff (2020). Evaluation of diagnostic pigments to estimate phytoplankton size classes. *Limnology and Oceanography: Methods*, 18, 570-584, <https://doi.org/10.1002/lom3.10385>.

Kramer, S.J., D.A. Siegel, and J.R. Graff (2020). Phytoplankton community composition determined from co-variability among phytoplankton pigments from the NAAMES field campaign. *Frontiers in Marine Science*, 7(215), 1-15, <https://doi.org/10.3389/fmars.2020.00215>.

Bisson, K.M., N. Baetge, **S.J. Kramer**, D. Catlett, et al. (2020). California wildfire burns boundaries between science and art. *Oceanography*, 33(1), 16–19, <https://doi.org/10.5670/oceanog.2020.110>.

Fox, J., M.J. Behrenfeld, N. Haëntjens, A.P. Chase, **S.J. Kramer**, E. Boss, L. Karp-Boss, N.L. Fisher, W.B. Penta, T.K. Westberry, and K.H. Halsey (2020). Phytoplankton growth and productivity in the western North Atlantic: Observations of regional variability from the NAAMES field campaigns. *Frontiers in Marine Science*, 7(24), 1-15, <https://doi.org/10.3389/fmars.2020.00024>.

Kramer, S.J. and D.A. Siegel (2019). How can phytoplankton pigments be best used to characterize surface ocean phytoplankton groups for ocean color remote sensing algorithms? *Journal of Geophysical Research: Oceans*, 124(11), 7557-7574, <https://doi.org/10.1029/2019JC015604>.

Kramer, S.J., C.S. Roesler, H.M. Sosik (2018). Bio-optical discrimination of diatoms from other phytoplankton in the surface ocean: Evaluation and refinement of a model for the Northwest Atlantic, *Remote Sensing of Environment*, 217, 126-143, <https://doi.org/10.1016/j.rse.2018.08.010>.

Non-peer reviewed

Kramer, S.J., D.A. Siegel, S. Maritorena, D. Catlett (2021). Global surface ocean HPLC phytoplankton pigments and hyperspectral remote sensing reflectance. *PANGAEA*, <https://doi.pangaea.de/10.1594/PANGAEA.937536>.

Nelson, N.B., C. Roesler, I. Cetinić, and **S. Kramer** (2021). HPLC pigment analysis, in *EXPORTS Measurements and Protocols for the NE Pacific Campaign*, edited by I. Cetinić and I. Soto Ramos, NASA Technical Memorandum, 236 pp., NASA Goddard Space Flight Center, Greenbelt, Maryland. <https://doi.org/10.1575/1912/27968>.

Boss, E. and **S.J. Kramer** (2020). How do we choose technologies to study the distribution of marine organisms in the ocean? *Frontiers for Young Minds*. <https://doi.org/10.3389/frym.2020.00003>.

Kramer, S.J. and D.A. Siegel (2019). Global and local scale HPLC phytoplankton pigments dataset. *PANGAEA*, <https://doi.pangaea.de/10.1594/PANGAEA.938703>.

Kramer, S.J., M. Brown, N. Haëntjens, and C. Roesler (2018). Multi-parameter assessment of phytoplankton community composition from absorption, reflectance, and quantitative imaging. *Conference proceedings of Ocean Optics XXIV*. October 2018, 1-10 pp.

Kramer, S. and C. Roesler (2014). Phytoplankton and nitrate in Harpswell Sound: a multi-scale investigation. *Conference proceedings of Ocean Optics XXII*. October 2014, 1-10 pp.

PRESENTATIONS

Kramer, S.J., E.L. Jones, N.L. Paul, M.L. Estapa, T.A. Ryneerson, A.E. Santoro, C.A. Durkin. Mapping the transport and transformation of surface phytoplankton carbon into the deep ocean with DNA sequencing. *Poster and oral presentation at Biodiversity, Ecology, and the Biological Carbon Pump in the Ocean Twilight Zone meeting*. Woods Hole, MA. September 12-20, 2023.

Kramer, S.J., E.L. Jones, N.L. Paul, M.L. Estapa, T.A. Ryneerson, A.E. Santoro, C.A. Durkin. Mapping the transport and transformation of surface phytoplankton carbon export into the deep ocean with DNA sequencing. *Poster presentation at Ocean Carbon and Biogeochemistry meeting*. Woods Hole, MA. June 12-15, 2023.

Kramer, S.J., E.L. Jones, N.L. Paul, M.L. Estapa, T.A. Ryneerson, A.E. Santoro, C.A. Durkin. Mapping the transport and transformation of surface phytoplankton carbon export into the deep ocean. *Poster presentation at NorCal Geobiology Symposium*. Palo Alto, CA. April 15, 2023.

Kramer, S.J. Linking surface ocean phytoplankton communities to carbon flux. *Oral presentation, MBARI Project Update*. Moss Landing, CA. November 14, 2022.

Kramer, S.J., D. Catlett, L. Bolaños, A. Chase, N. Haëntjens, J.R. Graff, L. Karp-Boss, E. Boss, S. Giovannoni, M.J. Behrenfeld, C.S. Roesler, H.M. Sosik, D.A. Siegel. Toward a global synthesis of phytoplankton community composition methods. *Poster presentation at Ocean Carbon and Biogeochemistry meeting*. Woods Hole, MA. June 20-23, 2022.

Kramer, S.J., D. Catlett, L. Bolaños, A. Chase, N. Haëntjens, J.R. Graff, L. Karp-Boss, E. Boss, S. Giovannoni, M.J. Behrenfeld, D.A. Siegel. Comparing surface ocean phytoplankton community composition in the western North Atlantic across in situ methods. *Poster presentation at virtual Ocean Sciences Meeting*. February 28, 2022.

Kramer, S.J. Comparing surface ocean phytoplankton community composition across in situ methods. *Oral presentation at UCSB Marine Science Graduate Student Seminar*. Santa Barbara, CA. January 18, 2022.

Kramer, S.J., L.M. Bolaños, A.P. Chase, N. Haëntjens, E.S. Boss, L. Karp-Boss, and D.A. Siegel. Comparing surface ocean phytoplankton community composition in the western North Atlantic across in situ methods. *Oral presentation at Tara Oceans course*. April 1, 2021.

Kramer, S.J., K.M. Bisson, and A.D. Fischer. Observations of phytoplankton community composition in the Santa Barbara Channel during the Thomas Fire. *Oral presentation as part of Ocean Carbon and Biogeochemistry [webinar series](#)*. February 23, 2021.

Kramer, S.J. and D.A. Siegel. Modeling phytoplankton pigments on global to local scales using hyperspectral optics. *Oral presentation at Ocean Sciences Meeting*. San Diego, CA. February 19, 2020.

Kramer, S.J., K.M. Bisson, and A.D. Fischer. Did the Thomas Fire fuel a phytoplankton community shift in the Santa Barbara Channel? *Poster presentation at Ocean Sciences Meeting*. San Diego, CA. February 16-21, 2020.

Kramer, S.J. Detecting global phytoplankton pigments from hyperspectral optics. *Oral presentation at UCSB Marine Science Graduate Student Seminar*. Santa Barbara, CA. February 11, 2020.

Kramer, S.J. Characterizing global surface ocean phytoplankton community composition from in situ sampling and remote sensing. *Poster presentation at National Defense Science and Engineering Graduate (NDSEG) Fellowship Conference*. San Diego, CA. August 5, 2019.

Kramer, S.J. Ash in the ocean: Impacts of the Thomas Fire on the ecology and biogeochemistry of the Santa Barbara Channel. *Invited talk at University of Rhode Island Graduate School of Oceanography departmental seminar*. Narragansett, RI. July 19, 2019.

Kramer, S.J. and D.A. Siegel. Spatiotemporal distribution of five surface ocean phytoplankton communities determined from phytoplankton pigment composition on NAAMES 1-4. *Poster presentation at North Atlantic Aerosols and Marine Ecosystems Study (NAAMES) Science Team Meeting*. Washington, D.C. June 17, 2019.

Kramer, S.J. and D.A. Siegel. Phytoplankton community structure on NAAMES and EXPORTS determined from co-variability in phytoplankton pigment concentrations. *Poster presentation at EXport Processes in the Ocean from RemoTe Sensing (EXPORTS) Science Team Meeting*. Williamsburg, VA. May 8, 2019.

Kramer, S.J. Global phytoplankton community structure: in situ and remote sensing. *Oral presentation at UCSB Marine Science Graduate Student Seminar*. Santa Barbara, CA. January 22, 2019.

Kramer, S. J., K.M. Bisson, A.D. Fischer. Phytoplankton community structure and oceanic ash content using the Imaging FlowCytobot during the Thomas Fire in the Santa Barbara Channel, CA. *Oral presentation at McLane Labs IFCB Workshop*. Woods Hole, MA. November 15, 2018.

Kramer, S.J., M. Brown, N. Haëntjens, and C. Roesler. Multi-parameter assessment of phytoplankton community composition from absorption, reflectance, and quantitative imaging. *Oral presentation at Ocean Optics XXIV*. Dubrovnik, Croatia. October 8, 2018.

Kramer, S.J. and D.A. Siegel. Surface ocean phytoplankton community structure on NAAMES 1-3 determined from co-variability in phytoplankton pigment concentrations. *Poster presentation at North Atlantic Aerosols and Marine Ecosystems Study (NAAMES) Science Team Meeting*. Corvallis, OR. June 12, 2018.

Kramer, S.J. and D.A. Siegel. Global surface ocean phytoplankton community structure determined from co-variability in phytoplankton pigment concentrations. *Poster presentation at Ocean Sciences Meeting*. Portland, OR. February 12-16, 2018.

Kramer, S.J. Global phytoplankton community structure from HPLC pigments. *Oral presentation at UCSB Marine Science Graduate Student Seminar*. Santa Barbara, CA. January 30, 2018.

Kramer, S.J. and M. Brown. Determining Phytoplankton Functional Types from optical properties: a multi-parameter investigation. *Oral presentation at Ocean Optics summer course*. Walpole, ME. August 4, 2017.

Kramer, S., H. Sosik, & C. Roesler. Determining phytoplankton community structure from ocean color at the Martha's Vineyard Coastal Observatory (MVCO). *Virtual presentation at the May 2016 Undergraduate Virtual Poster Showcase*.

Kramer, S., H. Sosik, & C. Roesler. Determining phytoplankton community structure from ocean color at the Martha's Vineyard Coastal Observatory (MVCO). *Poster presentation at Ocean Sciences Meeting*. New Orleans, LA. February 21-26, 2016.

Kramer, S. & H. Sosik. A method for determining phytoplankton community structure from ocean color at the Martha's Vineyard Coastal Observatory. *Oral & poster presentation to WHOI Biology Department*. Woods Hole, MA. August 7, 2015.

Kramer, S. & C. Roesler. Phytoplankton and nitrate in Harpswell Sound: a multi-scale investigation. *Poster presentation at Ocean Optics XXII*. Portland, ME. October 26-31, 2014.

FIELD EXPERIENCE

R/V *Rachel Carson* and R/V *Paragon*, Monterey Bay, 1 day trips, 2022-present.

RRS *Discovery*, EXport Processes in the Ocean from RemoTe Sensing (EXPORTS), Eastern North Atlantic Ocean, May 1-June 1, 2021.

R/V *Sally Ride*, EXport Processes in the Ocean from RemoTe Sensing (EXPORTS), Eastern North Pacific Ocean (Station P), August 9-September 14, 2018.

R/V *Atlantis*, North Atlantic Aerosols and Marine Ecosystems Study (NAAMES), Western North Atlantic Ocean, March 20-April 14, 2018.

R/V *Sally Ride*, Across the Channel: Investigating Diel Dynamics (ACIDD), Santa Barbara Channel, December 16-22, 2017.

R/V *Shearwater*, Plumes and Blooms trips, Santa Barbara Channel, 1 day trips, 2017-2019.

R/V *Tioga*, Martha's Vineyard Coastal Observatory, July 14, 2015.

R/V *Laine*, Harpswell Sound, ME, 1 day trips, 2012-2016.

TEACHING EXPERIENCE

Summer 2023 **Invited guest lecturer**, *University of Maine School of Marine Sciences*
Calibration and Validation of Ocean Color Remote Sensing. Featured lectures included: "What are phytoplankton? An introduction to taxonomy and in situ methods" and "A tour of particles in the ocean."

Fall 2020 **Teaching Assistant**, *UC Santa Barbara Department of Geography*
GEOG 262: Ocean Optics

- Summer 2019 **Teaching Assistant**, *University of Maine School of Marine Sciences*
Calibration and Validation of Ocean Color Remote Sensing
- Fall 2016 **Teaching Assistant**, *UC Santa Barbara Geography Dept.*
GEOG 115A: Remote Sensing of the Environment
- Spring 2016 **Teaching Assistant**, *Bowdoin College Earth & Oceanographic Sci. Dept.*
EOS 1505: Introduction to Oceanography
- Fall 2015 **Project Assistant**, *Bowdoin College Earth and Oceanographic Sci. Dept.*
EOS 2005: Biogeochemistry

OUTREACH

Full list of outreach activities available upon request.

- 2023-present Co-founder and co-lead, *MBARI Women's Resource Group*
- 2022 Featured speaker at Pacific Grove Museum of Natural History "Hardcore Natural History: Nature's Extreme Events" series
- 2020-present Volunteer speaker for various remote, interactive presentations to: Girl, Buena High School (Ventura), Dos Pueblos High School (Santa Barbara)
- 2019-2022 Pen pal, *Letters to a Pre-Scientist*
- 2017-2022 Volunteer speaker, *Science as a Career Outreach Project Experiment (SCOPE)*
- 2017-2018 Outreach and education team lead, *Across the Channel: Investigating Diel Dynamics (ACIDD)*
- 2016-2018 Volunteer speaker, *Climate Voices Science Speaker Network*

ADDITIONAL PROFESSIONAL TRAINING

Quantitative ecological genomics in the Tara Ocean (Remote participation), March 29-April 2, 2021. *Université Paris, Institut Qlife.*

Data and network science boot camp (UC Santa Barbara, Santa Barbara, CA), September 11-22, 2017. *NSF Integrative Graduate Education and Research Traineeship (IGERT).*

Calibration and Validation of Ocean Color Remote Sensing (Darling Marine Center, Walpole, ME), July 10-August 4, 2017. *NASA, WHOI OCB, University of Maine.*

ACADEMIC SERVICE

- 2024 Session co-chair, Ocean Sciences Meeting: *Ushering in an era of daily, global hyperspectral radiometry and multi-angle polarimetry with the NASA PACE mission*
- 2023-2024 Member: OCB Operational Phytoplankton Observations Working Group

- 2022-2025 Member: NASA Ocean Biology Distributed Active Archive Center (OB.DAAC) User Working Group
- 2023-present Grant reviewer: *NASA Ocean Biology and Biogeochemistry, NSF Biological Oceanography, NSF Antarctic Research Program, NOAA Ocean Acidification Program.*
- 2022 Session co-chair, Ocean Sciences Meeting: *Biogeochemical responses of coastal ecosystems to storms and fires* and *Expanding frontiers in productivity and flux from ocean optics.*
- 2020-present Peer reviewer: *Journal of Geophysical Research: Oceans, Scientific Reports, Progress in Oceanography, Environmental Monitoring and Assessment, Continental Shelf Research, Deep Sea Research I, Limnology & Oceanography, Scientific Data, Optics Express.*
- 2020-2021 Member: UCSB IGPMs Diversity, Equity, and Inclusion Working Group
- 2019-2021 UCSB Marine Science Chair's Advisory Committee, *Elected by peers*
- 2019-2020 Organizer: UCSB Marine Science Spring Speaker Series
- 2018 Graduate student representative: UCSB Environmental Fluid Mechanics faculty search committee

COMPUTATION MATLAB, Python, R.

LANGUAGES English, French (working proficiency), Spanish (limited proficiency).

CERTIFICATIONS US Coast Guard Standards of Training, Certification, and Watchkeeping (STCW) Basic Training and Personal Survival; Red Cross First Aid, CPR/AED, Lifeguard, Water Safety Instructor.