Curriculum Vitae

Dr. Kevin W. Becker
Associate Scientist
GEOMAR Helmholtz Centre for Ocean Research Kiel
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Education

08/2015 **Ph.D.** Geosciences, MARUM, University of Bremen, Germany
Dissertation title: Biogeochemical significance and biomarker potential of novel glycerolipids and respiratory quinones in the marine environment.
(Supervisor: Prof. Dr. Kai-Uwe Hinrichs)

10/2011 **M.Sc.** Geosciences (with honors), University of Bremen, Germany
M.Sc. thesis in the Organic Geochemistry group at MARUM, University of Bremen
Thesis title: Improved chromatographic separation of archaeal GDGTs and its application to sediments from the Mediterranean and Black Seas.
(Supervisor: Prof. Dr. Kai-Uwe Hinrichs)

10/2009 **B.Sc.** Geosciences, University of Bremen, Germany
B.Sc. thesis in in the Organic Geochemistry group at MARUM, University of Bremen
Thesis title: Lipid biomarker studies of sediment samples from multi-core GeoB 10709-4 from the Gulf of Taranto, Southern Italy.
(Supervisor: Prof. Dr. Kai-Uwe Hinrichs)

Professional experience

Since 09/2021 **Associate Scientist,** Marine Biogeochemistry/Biological Oceanography, GEOMAR Helmholtz Centre for Ocean Research Kiel, Kiel, Germany. Advisor: Prof. Dr. Anja Engel

03/2019 – 08/2021 **Postdoctoral Scientist,** Marine Biogeochemistry/Biological Oceanography, GEOMAR Helmholtz Centre for Ocean Research Kiel, Kiel, Germany. Advisor: Prof. Dr. Anja Engel

03/2019 – 03/2020 **Guest Investigator**, Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution. Advisor: Dr. Benjamin A.S. Van Mooy

05/2017 – 03/2019 **Postdoctoral Investigator**, Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution. Advisor: Dr. Benjamin A.S. Van Mooy

11/2015 – 05/2017 **Postdoctoral Scholar**, Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution & Woods Hole Coastal and Marine Science Center, U.S. Geological Survey, Woods Hole, USA. Advisors: Dr. Benjamin A.S. Van Mooy (WHOI), Dr. John W. Pohlman (USGS), Dr. Stefan M. Sievert (WHOI)

11/2011 – 05/2015 **Doctoral Researcher**, Organic Geochemistry, MARUM, University of Bremen, Germany. Advisor: Prof. Dr. Kai-Uwe Hinrichs

02/2007 – 09/2011 **Student Research Assistant**, Organic Geochemistry, MARUM, University of Bremen, Germany. Advisor: Prof. Dr. Kai-Uwe Hinrichs

Awards and fellowships

2022 Kiel Marine Science seed funding to study algal toxins in the Baltic Sea paleo-record (15,000 €)

2015 Joint Woods Hole Oceanographic Institution & U.S. Geological Survey Postdoctoral Scholar Award ($99,000)

Research interests

As an organic geochemist, I work at the interface of biology, chemistry and geology. My overarching research interests revolve around solving problems in marine microbial biogeochemistry, microbial ecology, and the interaction of microbial communities with their geochemical environment. To this end, I investigate molecular-level responses of marine organisms to their changing environment, i.e. the information encoded in the molecular and isotopic composition of complex biomolecules. With my research, I aim to contribute to our understanding of how and why organisms leave their particular chemical signals and to provide new insights on the microbial processes that drive global biogeochemical cycles in the modern ocean and the geological past.

Professional activities

♦ **Expeditions**: **(9)** 06-07/2022 RV Maria S. Merian cruise MSM108, Long-Term Ecological Research in the Fram Strait. **(8)** 01-02/2022 RV Sonne cruise SO288, Conjoint Monitoring of the Ocean Bottom offshore Chile (COMBO) & Remineralisation of organic matter in the deep ocean of the Humboldt Current System off northern Chile (HOMER). **(7)** 11-12/2019 RV Meteor cruise M160, Eddy study to understand physical-chemical-biological coupling and the biological carbon pump as a function of eddy type off West Africa (MOSES Eddy Study II). **(6)** 07-08/2019 RV Meteor cruise M156, Eddy study to understand bentho-pelagic coupling and the biological carbon pump as a function of eddy type off West Africa (MOSES Eddy Study I). **(5)** 03-04/2018 RV Falkor cruise FK180310 “Eddy Exploration and Ecosystem Dynamics”. **(4)** 06-07/2017 RV Kilo Moana cruise KM1709 “MESO-SCOPE (Microbial Ecology of the Surface Ocean – Simons Collaboration on Ocean Processes and Ecology)” **(3)** 04-05/2017 RV Atlantis cruise AT37/12 “Dark Life II – Expedition to study subseafloor life at deep-sea vents. **(2)** 02/2011 RV Meteor cruise M84/1 "DARCSEAS I - Deep subseafloor Archaea in the eastern Mediterranean, Marmara and Black seas: carbon cycle, life strategies, and role in sedimentary ecosystems". **(1)** 04/2010 Alaska North Slope - "Source characterization and temporal variation of methane seepage from thermokarst lakes on the Alaska North Slope in response to arctic climate change", invited by the U.S. Geological Survey. ♦ **Memberships**: ASLO – Association for the Sciences of Limnology and Oceanography. EAOG – European Association of Organic Geochemists. ♦ **Teaching experience**: Since 2021 lecturer in the international master’s program ‘Biological Oceanography’ at Christian-Albrechts-University Kiel and GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany. Co-Supervision of graduate students. Supervision of student assistants in projects, co-supervision of B.Sc. students and support of lab courses in organic geochemistry (B.Sc. level). ♦ **Reviewer for:** National Science Foundation (NSF), German Science Foundation (DFG), Nature Communications, The ISME Journal - Nature, Environmental Microbiology, Limnology and Oceanography, Deep-Sea Research Part I: Oceanographic Research Papers, Frontiers in Microbiology, Organic Geochemistry, Paleoceanography and Paleoclimatology, Quaternary International, Bio-protocol. ♦ **Conference organization: (1)** Convener of session 10f “Honoring John Hayes: Molecular and Isotopic Biogeochemistry Across Time and Space” during Goldschmidt 2018, Boston, MA, USA. **(2)** Convener of session SS060 “Omics Ocean Observations to Reveal Microbial Ecosystem Dynamics and Resilience during 2023 Aquatic Sciences Meeting, Palma, Mallorca, Spain.

Skills

♦ **Laboratory, Analytical & Instrumental Experience**: Ship-based water column and sediment sampling for organic matter characterization and microbial process rate analysis. Solvent extraction for lipidomics analysis. Purification, isolation, derivatization and hydrolysis of organic molecules. Stable and radio isotope work for biogeochemistry and molecular biology. Organisms grown in culture: pelagic archaea (*Nitrosopumilus maritimus*), eukaryotic algae (e.g., *Isochrisis galbana*). Liquid chromatography interfaced with (high resolution) MS^n. Gas Chromatography interfaced with flame ionization detector (FID), MS, and isotope ratio MS detectors. Elemental analysis: Carbon, Nitrogen and Phosphorus. ♦ **Language skills**: German (native language), English (fluent in writing and speaking), French (intermediary level). ♦ **Computer literacy**: Microsoft Office, R, Matlab, Grapher, Surfer, CorelDraw, Xcalibur, Data Analysis, ChemStation, Bruker Compass Data Analysis.

Publication list

In revision

[31] Zhu, Q., Elvert, M., Meador, T.B., Schröder, J.M., Doeana, K.D., **Becker, K.W.**, Elling, F.J., Lipp, J.S., Heuer, V.B., Zabel, M., Hinrichs, K.-U. Comprehensive molecular-isotopic characterization of archaeal lipids in the Black Sea water column and underlying sediments. In revision at *Geobiology*.

[30] Beckett, S.J., Demory, D., Coenen, A.R., Casey, J.R., Dugenne, M., Follett, C.L., Connell, P., Carlson, M.C.G., Hu, S.K., Wilson, S.T., Muratore, D., Rodriguez-Gonzalez, R.A., Peng, S., **Becker, K.W.**, Mende, D.R., Armbrust, E.V., Caron, D.A., Lindell, D., Follows, M.J., White, A.E., Ribalet, F., Weitz, J.S. Diel population dynamics and mortality of Prochlorococcus in the North Pacific Subtropical Gyre. In revision at *Nature Communications*, pre-print available on bioRxiv: https://doi.org/10.1101/2021.06.15.448546

Peer-reviewed

[29] Stief, P., Schauberger, C., **Becker, K.W.**, Elvert, M., Balmonte, J.P., Franco-Cisterna, B., Middelboe, M., Glud, R.N. (2023). Hydrostatic pressure induces transformations in the organic matter and microbial community composition of marine snow particles. *Communications Earth & Environment* 4, 377. doi: 10.1038/s43247-023-01045-4

[28] Devresse, Q., **Becker, K.W.**, Dilmahamod, A.F., Ortega−Retuerta, E., Engel, A. (2023). Dissolved organic matter fluorescence as a tracer of upwelling and microbial activities in two cyclonic eddies in the Eastern Tropical North Atlantic. *Journal of Geophysical Research: Oceans*, e2023JC019821. doi: 10.1029/2023JC019821

[27] Galgani, L., Hepach, H., **Becker, K.W.**, Engel, A. (2023). Sediment Traps: A Renowned Tool in Oceanography Applied to New Marine Pollutants. *Oceanography* 36 (Suppl. 1), Art. Nr. 16-0. doi: 10.5670/oceanog.2023.s1.16

[26] Devresse, Q., **Becker, K.W.**, Bendinger, A., Hahn, J., Engel, A. (2022). Eddy-enhanced primary production sustains heterotrophic microbial activities in the Eastern Tropical North Atlantic. *Biogeosciences* 19(22), 5199–5219. doi: 10.5194/bg-19-5199-2022

[25] Holm, H.C., Fredricks, H.F., Bent, S.M., Lowenstein, D.P., Ossolinski, J.E., **Becker, K.W.**, Johnson, W.M., Schrage, K. and Van Mooy, B.A.S. (2022). Global ocean lipidomes show a universal relationship between temperature and lipid unsaturation. *Science* 376(6600), 1487-1491. doi: 10.1126/science.abn7455

[24] von Jackowski, A., **Becker, K.W.**, Zäncker, B., Wietz, M., Bienhold, C., Näthig, E.-M., Engel, A. (2022). Contrasting microbial communities and substrate regimes in the eastern Fram Strait between summer and fall. *Environmental Microbiology* 24(9), 4124–4136. doi: 10.1111/1462-2920.16036

[23] Biller, S.J., Lundeen, R.A., Hmelo, L.R., **Becker, K.W.**, Arellano, A.A., Dooley, K., Heal, K.R., Carlson, L.T., Van Mooy, B.A.S., Ingalls, A.E., Chisholm, S.W. (2022). *Prochlorococcus* extracellular vesicles: Molecular composition and adsorption to diverse microbes. *Environmental Microbiology* 24(1), 420–435. doi: 10.1111/1462-2920.15834

[22] Muratore, D., Boysen, A.K., Harke, M.J., **Becker, K.W.**, Casey, J.R., Coesel, S.N., Mende, D.R., Wilson, S.T., Aylward, F.O., Eppley, J.M., Vislova, A., Peng, S., Rodriguez-Gonzalez, R.A., Beckett, S.J., Armbrust, E.V., DeLong, E.F., Karl, D.M., White, A.E., Zehr, J.P., Van Mooy, B.A.S., Dyhrman, S.T., Ingalls, A.E. and Weitz, J.S. (2022). Community-scale synchronization and temporal partitioning of gene expression, metabolism, and lipid biosynthesis in oligotrophic ocean surface waters. *Nature Ecology and Evolution* 6(2), 218–229. doi: 10.1038/s41559-021-01606-w

[21] Elling, F.J., Hemmingway, J.D., Kharbush, J.J., **Becker, K.W.**, Polik, C.A., Pearson, A. (2021). Linking diatom-diazotroph symbioses to nitrogen cycle perturbations and deep-water anoxia: Insights from Mediterranean Sapropel events. *Earth and Planetary Science Letters* 571, 117110. doi: 10.1016/j.epsl.2021.117110s

[20] Zhu, Q.-Z., Elvert, M., Meador, T.B., Becker, K.W., Heuer, V.B., Hinrichs, K.-U. (2021). Stable carbon isotopic compositions of archaeal lipids constrain terrestrial, planktonic, and benthic sources in marine sediments. *Geochimica et Cosmochimica Acta* 307, 319-337. doi: 10.1016/j.gca.2021.04.037s

[19] **Becker, K.W.**, Harke, M.J., Mende, D.R., Muratore, D., Weitz, J.S., DeLong, E.F., Dyhrman, S.T., Van Mooy, B.A.S. (2021). Combined pigment and metatranscriptomic analysis reveals highly synchronized diel patterns of phenotypic light response across domains in the open oligotrophic ocean. *The ISME Journal*. Doi: 10.1038/s41396-020-00793-x

[18] Kharbush, J.J., Van Mooy, B.A.S., Close, H.G., Arnosti, C., Smittenberg, R.H., Le Moigne, F.A.C., Mollenhauer, G., Scholz-Bötcher, B. Obreht, I., Koch, B.P., **Becker, K.W.**, Iversen, M.H., Mohr, W. (2020). Particulate organic carbon deconstructed: molecular and chemical composition of particulate organic carbon in the ocean. *Frontiers in Marine Science* 7, 518. doi: 10.3389/fmars.2020.00518

[17] Coffinet, S., Meador, T.B., Mühlena, L., **Becker, K.W.**, Schröder, J., Zhu, Q.-Z., Lipp, J.S., Heuer, V.B., Crump, M.P., Hinrichs, K.-U. (2019). Structural elucidation and environmental distributions of butanetriol and pentanetriol dialkyl glycerol tetraethers (BDGTs and PDGTs). *Biogeosciences Discussion* 17(2), 317-330. doi: 10.5194/bg-17-317-2020

[16] Evans, T.W., Coffinet, S., Könneke, M., Lipp, J.S., **Becker, K.W.**, Elvert, M., Heuer, V., Hinrichs, K.-U. (2019). Assessing the carbon assimilation and production of benthic archaeal biomarkers using lipid-RIP. *Geochimica et Cosmochimica Acta* 265, 431-442. doi: 10.1016/j.gca.2019.08.030

[15] **Becker, K.W.**, Collins, J.R., Durham, B.P., Groussman, R.D., White, A.E., Fredricks, H.F., Ossolinski, J.E., Repeta, D.J., Carini, P., Armbrust, E.V., Van Mooy, B.A.S (2018). Daily changes in phytoplankton lipidomes reveal mechanisms of energy storage in the open ocean. *Nature Communications* 9(1), 5179. doi: 10.1038/s41467-018-07346-z

[14] **Becker, K.W.**, Elling, F.J., Schröder, J.M., Lipp, J.S., Goldhammer, T., Zabel, M., Elvert, M., Overmann, J., Hinrichs, K.-U. (2018). Isoprenoid quinones resolve the stratification of redox processes in a biogeochemical continuum from the photic zone to deep anoxic sediments of the Black Sea. *Applied and Environmental Microbiology* 84 (10) e02736-17. doi: 10.1128/AEM.02736-17

[13] Götz, F., Longnecker, K., Kido Soule, M.C., **Becker, K.W.**, McNichol, J., Kujawinski, E.B., Sievert, S.M. (2018). Targeted metabolomics reveals proline as a major osmolyte in the chemolithoautotrophic epsilonproteobacterium *Sulfurimonas denitrificans*. *Microbiology Open*; e586. doi: 10.1002/mbo3.586

[12] Brankovits, D., Pohlman, J.W., Niemann, H., Leigh, M.B., Leewis, M.-C., **Becker, K.W.**, Iliffe, T.M., Alvarez, F., Lehmann, M.F., Phillips, B. (2017). Methane- and dissolved organic carbon-fueled microbial loop supports a tropical subterranean estuary ecosystem. *Nature Communications* 8, 1835. doi: 10.1038/s41467-017-01776

[11] Elling, F., Könneke, M., Nicol, G.W., Stieglmeier, M., Bayer, B., Spieck, E., de la Torre, J.R., **Becker, K.W.**, Thomm, M., Prosser, J.I., Herndl, G.J., Schleper, C., and Hinrichs, K.-U. (2017). Chemotaxonomic characterization of the thaumarchaeal lipidome. *Environmental Microbiology* 19(7), 2681-2700. doi: 10.1111/1462-2920.13759

[10] Elvert, M., Pohlman, J.W., **Becker, K.W.**, Gaglioti, B., Hinrichs, K.-U. and Wooller, M.J. (2016). Methane turnover and environmental change from Holocene lipid biomarker records in a thermokarst lake in Arctic Alaska. *The Holocene* 26(11), 1766-1777. doi: 10.1177/0959683616645942

[9] **Becker, K.W.*,** Elling, F.J.*, Yoshinaga, M.Y., Söllinger, A., Urich, T. and Hinrichs, K.-U. (2016). Unusual butane- and pentanetriol-based tetraether lipids in *Methanomassiliicoccus luminyensis*, a representative of the seventh order of methanogens. *Applied and Environmental Microbiology* 82(15), 4505-4516. *These authors contributed equally to this work. doi: 10.1128/AEM.00772-16

[8] Braun, S., Y Morono, Y., **Becker, K.W.**, Hinrichs, K.-U., Kjeldsen, K.U., Jørgensen, B.B. and Lomstein, A.A. (2016). Cellular content of biomolecules in sub-seafloor microbial communities. *Geochimica et Cosmochimica Acta* 188, 330-351. doi: 10.1016/j.gca.2016.06.019

[7] Hamann, E., Gruber-Vodicka, H., Kleiner, M., Tegetmeyer, H.E., Riedel, D., Littmann, S., Chen, J., Milucka, J., Viehweger, B., **Becker, K.W.**, Dong, X., Stairs, C.W., Hinrichs, K.-U., Brown, M.W., Roger, A.J. and Strous, M. (2016). Environmental Breviatea harbour mutualistic *Arcobacter* epibionts. *Nature* 534, 254-258. doi: 10.1038/nature18297

[6] Elling, F.J.*, **Becker, K.W.***, Könneke, M., Schröder, J.M., Kellermann, M.Y., Thomm, M. and Hinrichs, K.U. (2016). Respiratory quinones in *Archaea*: phylogenetic implications and application as biomarkers in the marine environment. *Environmental Microbiology* 18(2), 692-707. *These authors contributed equally to this work. doi: 10.1016/j.gca.2014.07.005

[5] **Becker, K.W.**, Lipp, J.S., Wörmer, L., Versteegh, G.J.M. and Hinrichs, K.-U. (2015). Rapid and simultaneous analysis of three molecular sea surface temperature proxies and application to sediments of the Sea of Marmara. *Organic Geochemistry* 85, 42-43. doi: 10.1016/j.orggeochem.2015.04.008

[4] Elling, F.J., Könneke, M., Lipp, J.S., **Becker, K.W.**, Gagen, E.J., Hinrichs, K.-U. (2014). Effects of growth phase on the membrane lipid composition of the thaumarchaeon *Nitrosopumilus maritimus* and their implications for archaeal lipid distributions in the marine environment. *Geochimica et Cosmochimica Acta* 141, 579-597. doi: 10.1016/j.gca.2014.07.005

[3] **Becker, K.W.**, Lipp, J.S., Zhu, C., Liu, X. and Hinrichs, K.-U. (2013). An improved analytical method for the analysis of archaeal and bacterial ether lipids. *Organic Geochemistry* 61, 34-44. doi: 10.1016/j.orggeochem.2013.05.007

[2] Zhu, C., Lipp, J.S., Wörmer, L., **Becker, K.W.**, Schröder, J., Hinrichs, K.-U. (2013). Comprehensive glycerol ether lipid fingerprints through a novel reversed phase liquid chromatography-mass spectrometry protocol. *Organic Geochemistry* 65, 53-62. doi: 10.1016/j.orggeochem.2013.09.012

[1] Wooller, M.J., Pohlman, J.W., Gaglioti, B., Langdon, P., Jones, M.C., Walter-Anthony, K.M., Elvert, M., **Becker, K.W.**, Hinrichs, K.-U. (2012). Reconstruction of past methane availability in an Arctic Alaska wetland indicates climate influenced methane release during the past ~12,000 years. *Journal of Paleolimnology* 48, 27-42. doi: 10.1007/s10933-012-9591-8

Citable cruise reports

[5] Soltwedel, T. et al. (2022). Cruise Report FS Maria S. Merian Cruise MSM108 LTER HAUSGARTEN 2022 Long-Term Ecological Research in the Fram Strait. hdl:10013/epic.0f18a50b-5db8-4f3e-a5e3-10f8501307ad

[4] Kopp, H. et al. (2022) Conjoint Monitoring of the Ocean Bottom offshore Chile Humboldt & Organic MattEr Remineralization, Cruise No. SO288, 15.01.2022 – 15.02.2022, Guayaquil (Ecuador) – Valparaiso (Chile) COMBO & HOMER. Open Access . SONNE-Berichte, SO288 . Begutachtungspanel Forschungsschiffe, Bonn, 47 pp. doi: 10.3289/CR_SO288.

[3] Körtzinger et al. (2020). Eddy Study to Understand Physical-Chemical-Biological Coupling and the Biological Carbon Pump as a Function of Eddy Type off West Africa, Cruise No. M160, 23.11.2019 – 20.12.2019, Mindelo (Cabo Verde) - Mindelo (Cabo Verde). *Meteor Berichte, M160. Gutachterpanel Forschungsschiffe*, Bonn, 54 pp. doi: 10.2312/cr_m160

[2] Sommer et al. (2020). Role of Eddies in the Carbon Pump of Eastern Boundary Upwelling Systems, REEBUS, Cruise No. M156, 03.07. – 01.08.2019 Mindelo (Cap Verde)–Mindelo. *Meteor Berichte, M156. Gutachterpanel Forschungsschiffe*, Bonn, 53 pp. doi: 10.2312/cr_m156

[1] Zabel et al. (2012). Biogeochemistry and methane hydrates of the Black Sea; oceanography of the Mediterranean; shelf sedimentation and cold water carbonates, Cruise No. M84/1 February 09 – February 22, 2011 Valletta (Malta) – Istanbul (Turkey). *Meteor Berichte, M160. Gutachterpanel Forschungsschiffe*, Bonn, 39 pp. doi: 10.2312/cr_m84_1

PhD Thesis:

Becker, K.W., 2015. Biogeochemical significance and biomarker potential of novel glycerolipids and respiratory quinones in the marine environment. University of Bremen, Bremen, Germany. URI: https://media.suub.uni-bremen.de/handle/elib/915

Invited talks

2023 Helmholtz Marine and Polar Life annual symposium, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research

2020 Ecological Chemistry Seminar, Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research

2020 Organic Geochemistry seminar, Center for Marine Environmental Sciences

2019 Organic Geochemistry seminar, Center for Marine Environmental Sciences

2018 Marine Biogeochemistry seminar, GEOMAR Helmholtz Centre for Ocean Research Kiel

2017 BPE/LDEO Seminar Series, Lamont Doherty Earth Observatory

2014 BioGeoChemistry Seminar, Woods Hole Oceanographic Institution

Conference and workshop contributions

Becker, K.W., Bähme, W., Pontiller, P., Hepach, H., Quack, B., Engel, A. (2023). Variations in microbial community and organic matter composition along a coastal upwelling to open ocean continuum in the subtropical North Atlantic. **Poster.** Aquatic Sciences Meeting, Palma, Mallorca, Spain, June 2023.

von Jackowski, A., **Becker, K.W.**, Zäncker, B., Wietz, M., Bienhold, C., Näthig, E.-M., Engel, A. (2022). Variations of microbial communities and biopolymers across the eastern Fram Strait during summer and fall. **Poster.** ISME18, 18th International Symposium on Microbial Ecology, Lausanne, Switzerland, August 2022.

Becker, K.W., Devresse, Q., Prieto, X., Hinrichs, K.-U., Engel, A. (2021). Molecular characterization of particulate and dissolved organic matter in and around a cyclonic eddy formed in the upwelling system off West Africa. **Oral (virtual)**. Aquatic Sciences Meeting, June 2021. Online only due to COVID-19 pandemic.

Devresse, Q., **Becker, K.W.**, Engel, A. (2021). Optical properties of dissolved organic matter indicate production and remineralization within a cyclonic eddy formed in an Eastern Boundary Upwelling System. **Oral (virtual)**. Aquatic Sciences Meeting, June 2021. Online only due to COVID-19 pandemic.

Devresse, Q., **Becker, K.W.**, Engel, A. (2021). Organic matter transport by cyclonic eddies formed in eastern boundary upwelling system supports heterotrophy in the open oligotrophic ocean. **Oral (virtual).** EGU General Assembly Conference, April 2021. Online only due to COVID-19 pandemic.

Devresse, Q., **Becker, K.W.**, Engel, A. (2020). Organic Matter Transport by Eddies Support Heterotrophy in the Eastern Tropical North Atlantic. **Oral (virtual)**. AGU Fall Meeting 2020. Online only due to COVID-19 pandemic.

Becker, K.W., Devresse, Q., Engel, A. (2020). Variations of microbial activity and diversity in mesoscale eddies formed in the Eastern boundary upwelling system off West Africa. **Poster.** EGU General Assembly Conference. Online only due to COVID-19 pandemic.

S Biller, S., Lundeen, R.A., Hmelo, L., **Becker, K.W.**, Arellano, A., Dooley, K., Carlson, L., Heal, K., Van Mooy, B.A.S., Ingalls, A.E., Chisholm, S.W. **Oral.** The Marine Cyanobacterium Prochlorococcus Releases Diverse 'Dissolved' Organic Molecules Within Extracellular. Ocean Sciences Meeting, San Diego, California, USA, February 2020.

Becker, K.W., Fredricks, H.F., Ebling, A.M., Lowenstein, D.P., and Van Mooy, B.A.S. Assessing *Prochlorococcus* mortality using lipidomics. **Poster.** Simons Collaboration on Ocean Processes and Ecology: Progress and Prospectus SCOPE Investigator Symposium and Workshop, New York City, NY, USA, December 2018.

Becker, K.W., Collins, J.R., Durham, B.P., Groussman, R.D., White, A.E., Fredricks, H.F., Ossolinski, J.E., Repeta, D.J., Carini, P., Armbrust, E.V., Van Mooy, B.A.S. Daily cycles in oceanic fat concentrations reveal that phytoplankton use a 'crash diet' to maintain growth in the face of energy limitation. **Oral.** Lipids on the Ocean, Brest, France, November 2018.

Becker, K.W., Collins, J.R., Durham, B.P., Groussman, R.D., White, A.E., Fredricks, H.F., Ossolinski, J.E., Repeta, D.J., Carini, P., Armbrust, E.V., Van Mooy, B.A.S. Deciphering microbial growth and intracellular energy flux from lipidomics. **Oral.** Goldschmidt, Boston, MA, USA, August 2018.

Becker, K.W., Gazalah, S., Caron, D.A., Lindell, D., Fredricks, H.F., Chisholm, S.W., Van Mooy, B.A.S. Effects of viral infection and grazing on the lipidome of *Prochlorococcus*. **Oral.** Ocean Sciences Meeting, Portland, OR, USA, February 2018.

Becker, K.W., Gazalah, S., Caron, D.A., Lindell, D., Van Mooy, B.A.S. Assessing *Prochlorococcus* mortality using lipidomics. **Poster.** Simons Collaboration on Ocean Processes and Ecology: Progress and Prospectus SCOPE Investigator Symposium and Workshop, New York City, NY, USA, December 2017.

Coffinet, S., Evans, T.W., Könneke, M., **Becker, K.W.**, Heuer, V., Lipp, J.S., Hinrichs, K.-U. Structural characterization and environmental significance of butanetriol dialkyl glycerol tetraethers. **Poster.** 28th International Meeting on Organic Geochemistry. Florence, Italy, September 2017.

Song, M., **Becker, K.W.**, Schubotz, F., Graw. J.M., Colwell, R., Pohlman, J.W., Hinrichs, K.-U. Lipid characterization of methane seep sediments along the Northern US Atlantic Margin. **Poster.** 28th International Meeting on Organic Geochemistry. Florence, Italy, September 2017.

Becker, K.W., Collins, J.R., Fredricks, H.F., Ossolinski, J.E., White, A.E., Repeta, D.J. and Van Mooy, B.A.S. The microbial lipidome of the oligotrophic North Pacific Subtropical Gyre. **Oral.** ASLO 2017 Aquatic Sciences Meeting, Honolulu, HI, USA, March 2017.

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