

RACHEL E. SIPLER

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EDUCATION

Ph.D., Oceanography, Rutgers, the State University of New Jersey, New Brunswick, NJ, October 2009.

B.S., Biology, Salisbury University, Salisbury, MD, June 2003.

B.S., Environmental Science, University of Maryland, Eastern Shore, Princess Ann, MD, June 2003.

PROFESSIONAL APPOINTMENTS

2021- present Director, Water Health and Humans Center for Innovation, Bigelow Laboratory for Ocean Science, East Boothbay, ME

2021-present Senior Research Scientist, Bigelow Laboratory for Ocean Sciences, East Boothbay, ME

2022-present Adjunct Professor, Memorial University of Newfoundland, St. John's, NL

2018-present Adjunct Professor, Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, VA

2017-2021 Canada Research Chair, Ocean Biogeochemistry, Memorial University of Newfoundland, St. John's, NL

2017-2021 Assistant Professor, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL

2012-2017 Assistant Research Scientist, Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, VA

2009-2012 Postdoctoral Researcher, Virginia Institute of Marine Science, College of William & Mary, Gloucester Point, VA

2004-2009 Graduate Research Assistant, Rutgers University, New Brunswick, NJ

2003-2004 Faculty Research Assistant, Rutgers University, New Brunswick, NJ

2003 Scientific Consultant, EG&G, NASA Wallops Flight Facility, Wallops Island, VA

PUBLICATIONS

Goñi, M., L. Juranek, **R.E. Sipler**, K. Welch. 2021. Particulate Organic Matter Distributions in the Water Column of the Chukchi Sea during Late Summer. *Journal of Geophysical Research: Oceans*. 126, e2021JC017664. DOI: 10.1029/2021JC017664

Jabre, L, A.E. Allen, J. Scott, P. McCain, J.P. McCrow, N. Tenenbaum, J.L. Spackeen, **R.E Sipler**, B.R. Green, D. A. Bronk, D.A. Hutchins, E.M. Bertrand. 2021. Molecular underpinnings and biogeochemical consequences of enhances diatom growth in a warming

- Southern Ocean. *Proceedings of the National Academy of Sciences*. 118(30)
DOI:10.1073/pnas.2107238118
- Büttner, S.H., M. Isaacs, E. Isemonger, D. van Niekerk, **R.E. Sipler**, R.A. Dorrington. 2021. Living phosphatic stromatolites – a link to Proterozoic microbial communities. *Geobiology*. 19(1): 35-47 DOI:10.1111/gbi.12415
- Killberg-Thoreson, L., S.E. Baer, W.G. Reay, Q.N. Roberts, **R.E. Sipler**, and D.A. Bronk. 2020. Seasonal nitrogen uptake dynamics and harmful algae blooms in the York River, Virginia. *Estuaries and Coasts*. DOI: 10.1007/s12237-020-00802-4
- Rogener-Dwitt, M.K., **R.E. Sipler**, K.S. Hunter, D.A. Bronk, S. Joye. 2019. Pelagic methane oxidation in the northern Chukchi Sea. *Limnology & Oceanography*. 65(1) 96-110 DOI: 10.1002/lno.11254
- Yao, X., **R. E. Sipler**, B.C. Stanley, Q.N. Roberts, M.P. Sanderson, Y. Zhang, C.B. Bott, D.A. Bronk. 2019. Quantifying effluent dissolved organic nitrogen (EDON) uptake by microbial communities along a salinity gradient in the York River. *Estuaries & Coasts*. 42(5) : 1265-1280 DOI: 10.1007/s12237-019-00563-9
- Harding, K., K. Turk-Kubo, **R. Sipler**, M.M. Mills, D. Bronk, J. Zehr. 2018. Symbiotic Unicellular Cyanobacteria Fix Nitrogen in the Arctic Ocean. *Proceedings of the National Academy of Sciences*. 115(52): 13371-13375 DOI 10.1073/pnas. 1813658115
- Spackeen, J.L., **R.E. Sipler**, E.M. Bertrand, K. Xu, J.B. McQuaid, N.G. Walworth, D. A. Hutchins, A.E. Allen, D.A Bronk. 2018. Impact of temperature, CO₂, and iron on nutrient uptake by a late-season microbial community from the Ross Sea, Antarctica. *Aquatic Microbial Ecology*. 82:145-159.
- Spackeen, J.L., D.A. Bronk, **R.E. Sipler**, E.M. Bertrand, D.A. Hutchins, A.E. Allen. 2018. Stoichiometric N:P ratios, temperature, and iron impact carbon and nitrogen uptake by Ross Sea microbial communities. *Journal of Geophysical Research – Biogeosciences*. #2017JG004316RR
- Tatters, A.O., K. Xu, F. Fu, J. Spackeen, N. Walworth, **R.E. Sipler**, E. Bertrand, J. McQuaid, A. Schnetzer, A.E. Allen, D.A. Bronk, D.A. Caron, J. Sun, K. Gao, D.A. Hutchins. 2018. Interactive Effects of Temperature, CO₂, and Nitrogen Source on a Coastal California Diatom Assemblage. *Journal of Phytoplankton Research*. 40 (2): 151-164 DOI: 10.1093/plankt/fbx074.
- Sipler, R.E.**, D. Gong, S.E. Baer, M.P. Sanderson, Q.N. Roberts, M. Mulholland, D.A. Bronk. 2017. Preliminary estimate of contribution of Arctic nitrogen fixation to the global nitrogen budget. *Limnol Oceanogr Letters*. 2:159-166. DOI: 10.1002/lol2.10046.
- Spackeen J.L., **R.E. Sipler**, K. Xu, A.O. Tatters, N. Walworth, E.M. Bertrand, J.B. McQuaid, D.A. Hutchins, A.E. Allen, D.A. Bronk. 2017. Interactive effects of elevated temperature and CO₂ on nitrate, urea, and DIC uptake by a coastal California microbial community. *Marine Ecol Prog Ser*. 577:49-65. DOI: 10.3354/meps12243.
- Sipler, R.E.**, C.T. E. Kellogg, T.L. Connelly, Q.N. Roberts, P.L. Yager, D.A. Bronk. 2017. Microbial Community Response to Terrestrially Derived Dissolved Organic Matter in the Coastal Arctic. *Frontiers of Microbiology*. 8: 1018. DOI: 10.3389/fmicb.2017.01018

- Baer, S.E., **R.E. Sipler**, Q.N. Roberts, P.L. Yager, M.E. Frischer and D.A. Bronk. 2017. Seasonal nitrogen uptake and regeneration in the western coastal Arctic. *Limnol Oceanogr.* DOI: 10.1002/lno.10580
- Sipler, R.E.**, S.E. Baer, M.E., Frischer, Q.N. Roberts, T.L. Connelly, P.L. Yager, D.A. Bronk. 2017. Chemical and photophysiological impact of terrestrially-derived dissolved organic matter on nitrate uptake in the coastal western Arctic. *Limnol Oceanogr.* 62: 1881-1894. DOI: 10.1002/lno.10541
- Yager, P.L., R.M. Sherrell, S.E. Stammerjohn, H.W. Ducklow, O.M.E. Schofield, E.D. Ingall, S.E. Wilson, K.E. Lowry, C.M. Williams, L. Riemann, S. Bertilsson, A-C. Alderkamp, J. Dinasquet, R. Logares, **R.E. Sipler**, A.J. Melara, L. Mu, R.G. Newstead, A.F. Post, R. Swalethorp, G.L. van Dijken. 2016. A carbon budget for the Amundsen Sea Polynya, Antarctica; estimating net community production and export in a highly productive polar ecosystem. *Elem Sci Anth.* 4 (140). DOI: 10.12952/journal.elementa.000140
- Schofield, O.M., T. Miles, A.C. Alderkamp, S.H. Lee, C. Haskins, E. Rogalsky, **R.E. Sipler**, R. Sherrell, P.L. Yager. 2015. *In situ* phytoplankton distributions in the Amundsen Sea polynya measured by autonomous gliders. *Elem Sci Anth.* 3(73). 3:73. DOI:10.12952/journal.elementa.000073
- Bertrand, E.M., J.P. McCrow, H. Zheng, A. Moustafa, J. McQuaid, T.O. Delmont, A.F. Post, **R.E. Sipler**, J.L. Spackeen, K. Xu, D.A. Bronk, D.A. Hutchins, A.E. Allen. 2015. Phytoplankton-bacterial interactions mediate micronutrient colimitation at the coastal Antarctic sea ice edge. *Proc. Natl. Acad. Sci.* 112(32): 9938-9943. DOI: 10.1073/pnas.1501615112
- Sipler, R.E.** and T. Connelly. 2015. Bioavailability of surface dissolved organic matter to aphotic bacterial communities in the Amundsen Sea Polynya, Antarctica. *Elem Sci Anth.* 3(60). DOI: 10.12952/journal.elementa.000060
- Sipler, R.E.** and D.A. Bronk. 2015. Dynamics of Marine Dissolved Organic Nitrogen. In: Hansell D.A. and Carlson, C.A. (Eds) Biogeochemistry of Marine Dissolved Organic Matter 2nd edition. Academic Press. pp.127-232.
- Baer, S.E., T.L. Connelly, **R.E. Sipler**, P.L. Yager, D.A. Bronk. 2014. Effect of temperature on rates of ammonium uptake and nitrification in the western coastal Arctic during winter, spring and summer. *Global Biogeochemical Cycles.* 2013GB004765.
- Sipler, R.E.**, L.M. McGuinness, G. J. Kirkpatrick, L. J. Kerkhof, and O. M. Schofield. 2014. Bacteriocidal effects of brevetoxin on natural microbial communities. *Harmful Algae.* 38: 101-109.
- Killberg-Thoreson, L., **R.E. Sipler**, C. A. Heil, M. Garrett, Q.N. Roberts, and D.A. Bronk. 2014. Nutrients released from decaying fish support microbial growth in the eastern Gulf of Mexico. *Harmful Algae.* 38: 40-49.
- Bronk, D.A., L. Killberg-Thoreson, M. R. Mulholland, **R. E. Sipler**, Q. N. Roberts, P. W. Bernhardt, M. Garrett, J. M. O'Neil, C. A. Heil. 2014. Nitrogen uptake and regeneration (ammonium regeneration, nitrification and photoproduction) in waters of the west Florida shelf prone to blooms of *Karenia brevis*. *Harmful Algae.* 38: 50-62.

- Sipler, R.E.**, D.A. Bronk, S.P. Seitzinger, R.J. Lauck, L.M. McGuinness, G.J. Kirkpatrick, C.A. Heil, and O.M. Schofield. 2013. *Trichodesmium*-derived dissolved organic matter is a source of nitrogen capable of supporting the growth of toxic red tide *Karenia brevis*. *Mar. Ecol. Prog. Ser.*483: 31-45.
- Killberg-Thoreson, L., **R.E. Sipler**, and D.A. Bronk. 2013. Anthropogenic nutrient sources supplied to a Chesapeake Bay tributary support algal growth: a bioassay and high resolution mass spectrometry approach. *Estuaries and Coasts*. 36 (5): 966-980. DOI: 10.1007/s12237-013-9604-5.
- Osborne, D.M., D.C. Podgorski, Q.N. Roberts, D.A. Bronk, **R.E. Sipler**, D. Austin, W.T. Cooper. 2013. Characterization of Reactive and Refractory Dissolved Organic Nitrogen Compounds in a Stormwater Treatment Area by Atmospheric Pressure Photoionization Fourier Transform-Ion Cyclotron Resonance Mass Spectrometry. *Rapid Communications in Mass Spectrometry*. 28: 851-858.
- Voß, M., D.A. Bronk, B. Deutsch, R. Purvaja, R. Ramesh T. Rixen, **R.E. Sipler**, and N. Wannicke. 2011. Treatise on estuarine and coastal science: Internal cycling of nitrogen and nitrogen transformations. (Eds) Wolanski, E. and D. McLusky. Elsevier.
- Sipler, R. E.** and S. P. Seitzinger. 2008. Use of electrospray ionization (ESI) mass spectrometry to investigate complex dissolved organic matter (DOM) and its potential applications in phytoplankton research. *Harmful Algae*. 8:182-187.

Non-peer reviewed publications

- Bronk, D.A., R. E. Sipler, C. Bott. 2016. Effluent organic nitrogen produced within wastewater treatment plants. Water Environmental Research Foundation (WERF)

GRANTS AND FUNDING

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|-----------|---|--|
| 2022 | Spencer Fund. Phosphate recovery potential of native microbial consortia. Sipler. PI | \$24,999 USD |
| 2021-2022 | Ocean and Freshwater Science Contribution Program (OFSCP). Fisheries and Oceans Canada (DFO) – Baseline assessment of micro-zooplankton, methane and water column microplastics of Placentia Bay. Sipler, Passow Ziegler. Lead-PI | \$251,455 CAD |
| 2021-2022 | Irish National Research Vessels Marine Research Programme – North Atlantic as a Climate Ocean: Projecting future changes in productivity and the biological carbon pump. Ward Co-PI | Two research cruises in Labrador Sea |
| 2020-2022 | Dutch Research Council (NWO) – Unravelling drivers of primary productivity in the changing high latitude North Atlantic: interactions between iron, light and nitrogen. Middag Collaborator | Ship time, shipping and travel \$35,000 equivalent |
| 2020-2026 | Ocean Frontiers Institute (OFI) Funding – Knowledge Co-production and Transdisciplinary Approaches for Sustainable Futures Co-PI | \$691,732 of \$4 million CAD |

2020-2026	Ocean Frontiers Institute (OFI) Funding – The Northwest Atlantic as a Climate Ocean: Projecting Future Changes in Productivity and the Biological Carbon Pump Co-PI	\$168,267 of \$4 million CAD
2020-2023	Natural Environment Research Council (NERC) – Resolving climate sensitivity associated with shallow mixed phase cloud in the oceanic mid- to high-latitudes (M-Phase). Murray Collaborator	Ship time and travel
2019-2022	Canada Research Chair (CRC) – Supplement. Sipler PI	\$20,000 CAD
2018-2022	Ocean and Freshwater Science Contribution Program (OFSCP). Fisheries and Oceans Canada (DFO) – Shoreline Environmental Baseline Monitoring in Placentia Bay, NL: An assessment of biogeochemistry, coliform and hydrocarbons and beach characterization. Crocker and White Co-PI	Sipler part \$24,833 CAD
2018-2022	Natural Sciences and Engineering Research Council (NSERC) Discovery Grant. Exploring the sources, sinks and uptake of carbon and nitrogen in the coastal ocean. Sipler PI	\$137,000 CAD
2018-2024	Ocean Frontiers Institute (OFI) Funding – Indicators of Ecosystems Change. Co-PI	Sipler part \$285,000 CAD
2017-2022	Canada Research Chair (CRC) - Ocean Biogeochemistry. Sipler PI	\$500,000 CAD
2019-2021	Memorial University Ocean Frontiers Institute (OFI) Funding – Cold Room Infrastructure to culture marine microorganisms. Sipler & Passow PI	\$80,000 CAD
2018-2021	Memorial University Ocean Frontiers Institute (OFI) Funding – Cold Room Infrastructure to culture marine microorganisms. Sipler PI	\$16,000 CAD
2018-2020	Ocean and Freshwater Science Contribution Program (OFSCP). Fisheries and Oceans Canada (DFO) – Baseline knowledge informing controls on primary productivity along the land-sea continuum of Placentia Bay. Sipler, Ziegler, Myers-Pigg. Lead-PI	\$66,816 CAD
2017 - 2019	South Africa-Canada Research Chairs Mobility Initiative – New approaches to investigate marine biodiversity using stable isotopes to study secondary metabolite biosynthesis in marine microbial communities. Research in collaboration with Dorrington (Rhodes University, SA). Sipler PI	\$20,000 CAD
2018 - 2019	Canada Foundation for Innovation (CFI) John R Evans Leaders Fund (JELF) – Infrastructure to assess the impact of environmental change on ocean biogeochemistry. Sipler PI	\$109,936 CAD
2018-2019	NL Innovation Council – Infrastructure for a biogeochemical research laboratory. Sipler	

	PI	\$137,479 CAD
2015 - 2019	NSF CBET – Effluent Dissolved Organic Nitrogen: Compound Level Assessment of Sources and Sinks. Bronk and Sipler	
	Co-PI	\$329,930 USD
2017 - 2018	NSF- Polar Programs Arctic – Collaborative Research: Is Nitrogen Fixation Widespread in the Chukchi and Beaufort Seas? Sipler	
	PI-Supplemental funding	\$72,801 USD
2015 - 2018	NSF Polar Programs Arctic – Collaborative Research: Is Nitrogen Fixation Widespread in the Chukchi and Beaufort Seas? Sipler, Bronk, and Zehr	
	Lead PI	\$405,188 USD
2012 - 2015	Water Environment Research Foundation – Effluent organic nitrogen produced within wastewater treatment plants. Bronk and Sipler	
	Co-PI	\$255,000 USD
2014 - 2015	NSF- Polar Programs Antarctic – Collaborative Research: Synergistic effects of iron, carbon dioxide and temperature on the fate of nitrate: Implications for future changes in export production in the Southern Ocean. Supplemental funding for a grant, for which R. Sipler served as substitute PI while D. Bronk served at NSF. Allen, Hutchins, and Sipler	
	Co-PI	\$143,275 USD
2012	US Fish and Wildlife Service, Arctic LCC – How Will Marine Food Webs in the Coastal Arctic Respond to Increased Runoff Associated With Permafrost Melt? Sipler, Bronk, Frischer, Nejstgaard and Sutton	
	Lead-PI	\$33,211 USD
2010	Hampton Roads Sanitation District – Chemical characterization of EON as it passes through a WWTP	
	Co-PI	\$64,607 + student internship USD

PRESENTATIONS

Invited Scholarly Talks

- 2021 Impacts of terrestrial dissolved organic matter on the base of the coastal Arctic food web. Aquatic Sciences Meeting. Virtual Meeting. *Invited talk.*
- 2019 Impacts of changing water chemistry on vulnerable coastal ecosystems. Virginia Institute of Marine Science. Gloucester Point, VA, USA
- 2019 Marine Dissolved organic mater: what is it, why does it matter and why don't we know more? Virginia Institute of Marine Science. Gloucester Point, VA, USA
- 2019 Impacts of environmental change on vulnerable coastal ecosystems. Bigelow Laboratory. Booth Bay Harbour, ME, USA
- 2018 South African Stromatolites: The role of modern day fossils in coastal nutrient cycles. Bigelow Laboratory. Booth Bay Harbour, ME, USA
- 2018 The Changing Arctic Nitrogen Cycle. Dalhousie University. Halifax, NS, Canada

- 2018 Nutrient cycling in a changing Arctic: Understanding the Land-Sea Continuum. Rhodes University. Grahamstown, South Africa
- 2018 Nutrient cycling in a changing Arctic: Understanding the Land-Sea Continuum. South African Environmental Observing Network. Port Elizabeth, South Africa
- 2017 The changing Alaskan Arctic. Virginia Institute of Marine Science. Gloucester Point, VA, USA
- 2017 Who needs heat? Nitrogen cycling in an ice-free Arctic. Oregon State University. Corvallis, OR, USA
- 2017 Where the land meets the sea: nutrient cycling in the coastal Alaskan Arctic. Université Laval. Quebec City, QC, Canada
- 2016 Coastal dissolved organic matter: sources, composition, fate & effects. University of South Florida. St. Petersburg, FL, USA
- 2016 Polar DOM: sources, sinks and elemental cycles. Texas A&M University. College Station, TX, USA
- 2016 Impacts of changing dissolved organic matter sources on microbial growth and elemental cycles. Memorial University of Newfoundland. St. John's, NL, Canada
- 2016 Impacts of increasing terrestrially-derived dissolved organic matter inputs on carbon and nitrogen cycling in the coastal Arctic. University of Alabama. Tuscaloosa, AL, USA
- 2013 The impacts of tundra melt water on nitrogen cycling in the near coastal Arctic. University of Maryland Center for Environmental Science, Horn Point Laboratory. Cambridge, MD, USA

Contributed Scholarly Papers and Talks (* indicates a student contribution)

- Campanyà-Llovet, N., M. Beheshti Foroutani, S. Ziegler, R. E. Sipler, P. Snelgrove. 2021. Subarctic trophic ecology in a changing Arctic. Aquatic Sciences Meeting. Virtual Meeting. Poster.
- *Khoo, C., **R.E. Sipler**, S.J.M. Faulkner, S.G. Boyd, M. Beheshti Foroutani, C. McBride, A. Fudge, S.E. Ziegler. 2021. Spatio-temporal variation in organic matter dynamics, distribution and flocculation across two river-estuaries in eastern Newfoundland. Aquatic Sciences Meeting. Virtual Meeting. Poster.
- *McBride, C., M. Beheshti Foroutani, I.M. Diaz, S.G. Boyd, G. Saba, S. Ziegler, **R.E. Sipler**. 2021. The changing role of zooplankton excretion in the coastal microbial loop. Aquatic Sciences Meeting. Virtual Meeting. Talk.
- Stanley, B., R.E. Sipler, Q.N. Roberts, J. Spackeen, E. Z. Norton, D.A. Bronk. 2021. Aquatic N cycling in the late season Alaskan Arctic. Aquatic Sciences Meeting. Virtual Meeting. Talk.
- Goñi, M., L. Juranek, **R.E. Sipler**, K. Welch. 2020 Particulate Organic Matter Distributions in the Water Column of the Chukchi Sea during Late Summer. Alaska Marine Science Symposium

- Stanley, B., **R. E Sipler**, Q. N. Roberts, J. Spackeen, E.Z. Norton and D.A. Bronk. 2020. Microbial uptake of dissolved organic nitrogen along the coastal Alaskan Arctic. Ocean Science Meeting. San Diego, CA, USA. Poster.
- *Khoo, C., **R.E. Sipler**, S.E. Ziegler. 2020. Variation in the Flocculation of dissolved organic matter in two contrasting boreal river-estuarine gradients. Ocean Sciences Meeting. San Diego, CA, USA. Talk.
- *Isemonger, E., **R.E. Sipler**, S. Waterworth, T. Bornmand, S. Venkatachalam, X. Siwe-Noundoua, R. Dorrington. 2019. Living fossils: extant stromatolites provides insight into the carbon cycling of Archaean microbial communities. Applied & Environmental Microbiology Gordon Research Conference. South Hadley, MA, USA. *Poster*.
- Sipler, R.E.**, E.W. Isemonger, T.G. Bornman, S.C. Waterworth, S. Venkatachalam, X. Siwe-Noundoua, R.A. Dorrington. Uptake of organic and inorganic nitrogen by South African peritidal stromatolite microbial communities. Aquatic Sciences Meeting. San Juan, PR, USA. *Talk*
- Stanley, B., **R.E. Sipler**, Q.N. Roberts, C. Bott, B. Song, D.A. Bronk. 2019. Estuarine water microbiome responses to differently treated wastewater effluent. Aquatic Sciences Meeting. San Juan, PR, USA. *Talk*
- Yao, X., **R.E. Sipler**, B. Stanley, Q.N. Roberts, M. Sanderson, C. Bott, D.A. Bronk. 2019. Quantifying effluent dissolved organic nitrogen (EDON) uptake by microbial communities along a salinity gradient in the York River. Aquatic Sciences Meeting. San Juan, PR, USA. *Talk*
- Goñi, M.A., L.W. Juranek, B.R. Hales, **R.E. Sipler**, D.A. Bronk. 2018. Particulate organic matter distributions in the water column of western Arctic Ocean during later open-water season. Ocean Sciences Meeting. Portland, OR, USA. *Poster*.
- Harding, K.J., K. Turk-Kubo, **R.E. Sipler**, D.A. Bronk, J. Zehr. 2018. Distribution of the Nitrogen Fixing Cyanobacteria Symbiont UCYN-A in the Chukchi and Beaufort Seas. Ocean Sciences Meeting. Portland, OR, USA. *Talk*.
- Sedlack, J.A., **R.E. Sipler**, Q.N. Roberts, B. Stanley, E.Z. Norton, D.A. Bronk. 2018. Salinity Mediated Release of Ammonium from Treated Wastewater. Ocean Sciences Meeting. Portland, OR, USA. *Poster*.
- Sedlack, J.A., **R.E. Sipler**, Q.N. Roberts, B. Stanley, E.Z. Norton, D.A. Bronk. 2018. Nitrogen Pollution from Municipal Wastewater in Chesapeake Bay. Ocean Sciences Meeting. Portland, OR, USA. *Talk*.
- Stanley, B., **R.E. Sipler**, Q.N. Roberts, E.Z. Norton, L. Killberg-Thoreson, D.A. Bronk. 2018. Influence of Wastewater Effluent Treatment and Disinfection on DON and Chlorophyll in a Chesapeake Bay Tributary. Ocean Sciences Meeting. Portland, OR, USA. *Talk*.
- Onofrio, M.D., **R.E. Sipler**, E. Shadwick, R. Mann. 2017. Effects of dissolved organic matter on larval oyster mortality. Aquatic Sciences Meeting. Honolulu, HI, USA. *Talk*.
- Juranek, L.W., M. Goñi, B. Hales, **R.E. Sipler**, D.A. Bronk. 2017. Late season community productivity in the Pacific Arctic: a nutrient, carbon, and dissolved gas perspective. Aquatic Sciences Meeting. Honolulu, HI, USA. *Talk*.

- Bronk, D.A., **R.E. Sipler**, J.L. Spackeen. 2017. The potential of DON to serve as a controlling variable for inorganic nutrient concentrations in coastal and estuarine systems. Aquatic Sciences Meeting. Honolulu, HI, USA. *Talk*.
- Spackeen, J.L., **R.E. Sipler**, Q.N. Roberts, S.E. Baer, D.A. Bronk. 2017. Phosphorus scavenging in the coastal Arctic. Aquatic Sciences Meeting. Honolulu, HI, USA. *Talk*.
- Sipler, R.E.**, D.A. Bronk, L.W. Juranek, M. Goñi, B. Hales, J.L. Spackeen, K. Welch, and B. Stanley. 2017. Impacts of late season drifting sea ice on water column physiochemistry. Aquatic Sciences Meeting. Honolulu, HI, USA. *Poster*.
- Hales, B., S. Lambert, A. Jones, C. Weekes, K. Welch, K. Craig, M. Goñi, L. Juranek, **R.E. Sipler**, D.A. Bronk. 2017. Carbon and nutrient-based evidence for late-season export productivity in the Chukchi Sea. Aquatic Sciences Meeting. Honolulu, HI, USA. *Talk*.
- Allen, A.E. J.B. McQuaid, T. Coale, E.M. Bertrand, D.A. Hutchins, D.A. Bronk, **R.E. Sipler**, J.L. Spackeen. 2017. Iron bioavailability in high-CO₂ oceans: new perspectives on the influence of diatom iron acquisition mechanisms on microbial interactions. Aquatic Sciences Meeting. Honolulu, HI, USA. *Talk*.
- Sipler, R.E.**, J.L. Spackeen, J. McQuaid, E.M. Bertrand, Q.N. Roberts, S.E. Baer, D.A. Hutchins, A.E. Allen, D.A. Bronk. 2016. Microbial response to different phytoplankton-derived dissolved organic matter sources in the Ross Sea, Antarctica. Ocean Sciences Meeting. New Orleans, LA. *Poster*.
- Spackeen, J.L., **R.E. Sipler**, E.M. Bertrand, D.A. Hutchins, A.E. Allen, D.A. Bronk. 2016. Effects of iron and dissolved N:P stoichiometry on the uptake of bicarbonate, nitrate and amino acids by a Ross Sea microbial community. Ocean Sciences Meeting. New Orleans, LA. *Poster*.
- Bertrand, E.M. J. McCrow, K. Xu, Z. Zhu, D. A. Hutchins, **R.E. Sipler**, J.L. Spackeen, D.A. Bronk, A.E. Allen. 2016. Planktonic response to simulated warming and elevated iron availability in McMurdo Sound: Community composition and microbial interactions. Ocean Sciences Meeting. New Orleans, LA. *Poster*.
- Bronk, D.A., J.L. Spackeen, **R.E. Sipler**, E.M. Bertrand, Q.N. Roberts, K. Xu, S.E. Baer, J. McQuaid, Z. Zhu, N.G. Walworth, D.A. Hutchins, A.E. Allen. 2016. Effect of increased temperature, CO₂ and iron on nitrate uptake and primary productivity in the coastal Ross Sea. Ocean Sciences Meeting. New Orleans, LA. *Talk*.
- Sipler, R.E.**, M.P. Sanderson, C.B. Bott, A. Williamson, D.A. Bronk. 2015. Rate of uptake and bioavailability of effluent dissolved organic nitrogen to natural microbial communities along a salinity gradient. CERF Conference. Portland, OR. *Poster*.
- Bronk, D.A., **R.E. Sipler**, M.P. Sanderson, Q.N. Roberts, S. Baer. 2015. Effect of Terrestrial Derived Dissolved Organic Matter On The Competition Between Phytoplankton and Bacteria In The Coastal Chukchi Sea. Aquatic Sciences Meeting. Granada, Spain. *Talk*.
- Spackeen, J.L., K. Xu, D.A. Hutchins, **R.E. Sipler**, D.A. Bronk. 2015. Stoichiometric Uptake of Carbon, Nitrogen and Phosphorus Under a Matrix of Temperature and Fe By Three Antarctic Phytoplankton Species. Aquatic Sciences Meeting. Granada, Spain. *Talk*.
- Spackeen, J., D. Bronk, **R. Sipler**, D. Hutchins, A. Allen. 2014. Impact of Temperature, pCO₂,

- and Iron on Nitrate Uptake by Microorganisms in the Ross Sea, Antarctica. 2014 Ocean Global Change Biology Gordon Research Conference. Waterville Valley, NH.
- Spackeen, J., D. Bronk, **R. Sipler**, D. Hutchins, A. Allen. 2014. Impact of Elevated Temperature and pCO₂ on the Uptake of Nitrate and Urea by Microbes in Coastal Southern California. Ocean Science Meeting, Honolulu, Hi. *Poster*.
- Sipler, R.E.**, T.L. Connelly, S.E. Baer, Q.N. Roberts, M.P. Sanderson, and D.A. Bronk. 2013. Impact of Tundra Humics on Nitrogen Cycling In the Coastal Arctic. Gordon Polar Science Meeting, Ventura, California. *Poster*.
- Baer, S.E., **R.E. Sipler**, Q.N. Roberts, and D.A. Bronk. 2013. Seasonal Uptake and Regeneration in the Coastal Western Arctic. Gordon Polar Science Meeting, Ventura, California. *Poster*.
- Sipler, R.E.**, L. Killberg-Thoreson and D.A. Bronk. 2013. The use of FT-ICR MS to Study the Biogeochemical Link between Dissolved Organic Nitrogen and Harmful Algal Blooms. Aquatic Science Meeting, New Orleans, Louisiana. *Talk*
- Tait, Z. S., V.D. Baylor, R. E. Sipler, Q. N. Roberts, A. Stuffins, **D. A. Bronk**, and M. E. Frischer. 2013. Will increased terrestrial carbon flux from melting permafrost stimulate increased bacterial nitrate uptake in the Arctic Ocean? Aquatic Science Meeting, New Orleans, Louisiana. *Poster*.
- Sipler, R.E.**, C. Bott and D.A. Bronk. 2012. Advanced Chemical Characterization of Dissolved Organic Nitrogen Throughout Wastewater Treatment. Water Jam 2012, Virginia Beach, Virginia. *Talk*.
- Sipler, R.E.**, T.L. Connelly and D.A. Bronk. 2012. Tundra-derived humics as a source of nitrogen and carbon to coastal microbial populations. ASLO Ocean Science Meeting, Salt Lake City, Utah. *Poster*.
- Bronk, D.A., **R.E. Sipler**, M.P. Sanderson, L. Killberg-Thoreson, Q.N. Roberts, M.R. Mulholland. 2012. Nitrogen fixation- a new source of nitrogen in the changing Western Arctic. Ocean Science Meeting, Salt Lake City, Utah. *Talk*.
- Tait, Z.A. V.D. Baylor, **R.E. Sipler**, Q.N. Roberts, D. A. Bronk, M. E. Frischer. 2012. Will permafrost impose nitrogen limitation on coastal bacterial communities in the Western Arctic? Ocean Science Meeting, Salt Lake City, Utah. *Poster*.

PROFESSIONAL SERVICES & AWARDS

- 2021-present Member, Boothbay Regions Clean Drinking Water Initiative Steering Committee
- 2021-present Elected member, Board of Directors, Amundsen Science
- 2020-present Member, Canadian National Research Vessel Task Team
- 2019-present Member of the Board of Directors, Northeast Avalon Atlantic Coastal Action Program. St. John's, Newfoundland, Canada
- 2019 Organizer and co-chair, contributed session SS037 Terrestrial materials in Planet water: Tracking influences along the land-ocean continuum 2019 Aquatic Sciences meeting in San Juan, PR.USA
- 2019 Organizer and co-chair, contributed session CS013 Dissolved Organic Matter-

DOC, DON, DOP, FDOM, CDOM

- 2018 Member of the 2019 Aquatic Sciences Meeting Planning Committee. Association for the Science of Limnology & Oceanography
- 2017 Awarded a Tier 2 Canada Research Chair in Ocean Biogeochemistry at Memorial University of Newfoundland, Canada.
- 2017 Organizer and co-chair, special session S101: Polar and High Latitude Research: land, lakes, ice and ocean, 2017 Aquatic Sciences meeting in Honolulu, HI, USA.
- 2016 Organizer and co-chair, special session HE54C: Western Antarctic Seas: From Trace Metals to Trophic Levels, 2016 Ocean Sciences meeting in New Orleans, LA.
- 2013 Organizer and chair, special session SS10: Shedding Light On the 'Black Box' of Dissolved Organic Nitrogen: Insights into the Sources, Sinks, Cycling, and Composition of Aquatic DON, 2013 ASLO meeting in New Orleans, LA.
- 2012 Antarctic Service Medal

Institutional Committee Service

- 2021-present Personnel Committee. Bigelow Laboratory for Ocean Science (Member)
- 2020-2021 Ocean Sciences Headship Search Committee. Department of Ocean Sciences, Memorial University of Newfoundland (Elected Member)
- 2020-2021 Ocean Sciences Vision Committee. Department of Ocean Sciences, Memorial University of Newfoundland (Elected Chair)
- 2019-2021 Cold-Ocean Deep-Sea Research facility (CDRF) Advisory Committee, Department of Ocean Sciences, Memorial University of Newfoundland (Member)
- 2019-2021 Search Committee for a Research Chair in Fisheries Ecosystems Research, Marine Institute's School of Fisheries, Memorial University of Newfoundland (Member)
- 2019-2021 Stable Isotope Laboratory Advisory Committee (Member), Memorial University of Newfoundland (Member)
- 2019 Search committee for a Faculty Hire in Ecology of Land-Sea-Interface, Department of Biology, Memorial University of Newfoundland (Member)
- 2019 CREAT Stable Isotope Laboratory Coordinator Selection Committee (Member)
- 2019 University Research Professor Award Selection Committee, Memorial University of Newfoundland (Member)
- 2018-2021 Undergraduate Studies Committee, Department of Ocean Sciences, Memorial University of Newfoundland (Member)
- 2018 Promotion and Tenure Committee, Department of Ocean Sciences, Memorial University of Newfoundland (Member)

Public Outreach (K-12, private organizations, citizenry)

- 2021 Café Science, A New Initiative to Protect Maine's Most Valuable Resources, Bigelow Laboratory for Ocean Sciences, Boothbay, Maine, USA. (*Virtual lecture*)
- 2020 Vitamin Sea, Ocean Biogeochemistry, Memorial University, St. John's, NL. (*Virtual lecture*)
- 2018 Women in Ocean Sciences, Lunch Hour Speaker Series, Coastal Connection: Science at the land-sea interface. Memorial University, St. John's, NL. (*Invited talk*)
- 2016 Arctic Nitrogen Fixation. Industry Partners, Virginia Institute of Marine Science, Gloucester Point, VA (*Invited talk*)
- 2016 The Changing Arctic Climate. Hampton University, Hampton, VA (*Invited Lecture*)
- 2016 Arctic Oceanography. Tikigaq School, Point Hope, AK (*Invited Talk*)
- 2016 Proposed late summer research. Alaska Eskimo Whaling Commission, Anchorage, AK. July Meeting (*Talk*)
- 2016 Summer research cruise in the Chukchi and Beaufort Seas. Alaska Eskimo Whaling Commission, Barrow, AK, February Meeting (*Talk*)
- 2016 Impacts of climate change on polar ecosystems. Hampton University, Hampton, VA (*Invited Talk presented via Skype from the R/V Sikuliaq*)
- 2016 Summer Research Cruise in the Chukchi and Beaufort Seas. Alaskan Eskimo Whaling Commission, Barrow, AK (*Talk*)
- 2012 Exploring Marine Science. Virginia Natural History Museum, Martinsville, VA (*Invited Talk*)

Courses Taught (Instructor or Guest Lecturer)

- 2021 OCSC-2100 Instructor, Introductory Chemical Oceanography, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL, (56 students)
- 2021 OCSC-4910 Instructor, Hot Topics in Oceanography, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL, (8 students)
- 2020 OCSC-2100 Instructor, Introductory Chemical Oceanography, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL, (30 students)
- 2020 OCSC-4910 Instructor, Hot Topics in Oceanography, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL, (3 students)
- 2019 OCSC-2500 Co-Instructor, Introduction to Practical Ocean Science, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL, (11 students)

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| 2019 | OCSC-2100 | Co-Instructor, Introductory Chemical Oceanography, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL, (45 students) |
| 2018 | OCSC-7100 | Guest-lecturer, Biological Oceanography, Department of Ocean Sciences, Memorial University of Newfoundland, St. John's, NL, (6 students) |
| 2016 | MSCI-398 | Co-instructor, Polar Oceanography, Undergraduate lecture, The College of William & Mary, Williamsburg, VA, (7 students) |
| 2016 | MSCI-627 | Guest-lecturer, Marine Organic Geochemistry, Department of Marine Science, The College of William & Mary Williamsburg, VA, (13 students) |

Mentoring

Post-doctoral researchers

- 2021-present Brianna Stanley, Post-doctoral researcher, Bigelow Laboratory for Ocean Sciences, USA

Graduate students

- 2021 Rachel Steffen, Visiting MSc student, Marine Biology (MUN), Primary Institution University of Georgia, USA
- 2020-present Lindsey Freeman, MSc student, Marine Biology (MUN)
- 2019-present Maryam Beheshti Foroutani, PhD student, Marine Biology (MUN)
- 2019-present Colleen McBride, MSc, Marine Biology (MUN)
- 2018-present Eric Isemonger, PhD student, Marine Natural Products (Rhodes University, SA) Co-Supervisor
- 2018-present Sally Faulkner, MSc student, Marine Biology (MUN)
- 2018-present Celyn Khoo, MSc student, Environmental Science (MUN)
- 2018- 2019 Nicole Spehn, MSc, Environmental Science (MUN)

Undergraduate honors students

- 2021-present Ajatshatru Balaji, Marine Biology Honours (MUN)

Undergraduate interns and work term students

- 2021-present Molly Gunn, Work-term student (MUN Marine Institute)
- 2020-2021 Ajatshatru Balaji, undergraduate student (MUN MUCEP)
- 2020-2021 Elie Pellerin, undergraduate student (MUN MUCEP)
- 2019-2020 Alexandria Fudge, undergraduate student (MI MUCEP)
- 2019 Sophie Drolet, undergraduate student (MUN MUCEP)
- 2018 MacGregor Parents, undergraduate student (MUN MUCEP)
- 2018 Erin Boland, undergraduate student (MUN MUCEP)
- 2016 Michelle Onofrio, Summer REU student (VIMS)

Research Staff

2021-present Nigel Guerra, Science Tech II (MUN)
2019-present Ignacia Diaz, Research Assistant I (MUN)
2020-2021 Alexandria Fudge, Science Tech I (MUN)
2017-2019 Maryam Beheshti Foroutani, Science Tech (MUN)
2013-2015 Quinn Roberts, Field Manager (VIMS)
2013-2015 Marta Sanderson, Laboratory Specialist (VIMS)

Service on Student Committees

2021 - present Rachel Steffen, MSc student, University of Georgia, USA
2021 Jong Jin Lee (PhD student; MUN) Comprehensive exam committee member
2020-present Antoine Viallard Vallette (PhD student; MUN Committee Member)
2020-present Tanya Prystay (PhD student; MUN-MI Committee Member)
2019 Pierre Priou (PhD student; MI MUN) Comprehensive exam committee member
2019 Joost Verhoeven (PhD student; MUN) Internal examiner for PhD defense
2018-2020 Quinn Roberts (MSc student; Virginia Institute of Marine Science, USA) Committee Member
2017-2021 Brianna Stanley (PhD student; Virginia Institute of Marine Science, USA) Committee Member
2017-2021 Janet Ferguson-Roberts (MSc student; MUN Committee Member)
2018 Claire Moore-Gibbons (MSc student; MUN) Examiner
2018 Matteo Rizzuto (PhD student; MUN) Comprehensive exam committee member