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

2022-present	Visiting Professor, Department of Biochemistry and Microbiology,
	Rhodes University, Makhanda, South Africa
2022-present	Adjunct Professor, Department of Ocean Sciences, Memorial University
	of Newfoundland, St. John's, NL
2021- present	Director, Water Health and Humans Initiative, Bigelow Laboratory for
	Ocean Science, East Boothbay, ME
2021-present	Research Faculty, Colby College, Waterville, ME
2021-present	Senior Research Scientist, Bigelow Laboratory for Ocean Sciences, East
	Boothbay, ME
2018-2024	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 (* indicates student and post-doc contributed publications)

 Bronk, D.A., R.E. Sipler, R.T. Letscher, and M.D. McCarthy. 2024. Dissolved Organic Nitrogen. In: Hansell D.A. and Carlson, C.A. (Eds) Biogeochemistry of Marine Dissolved Organic Matter 3nd edition. Academic Press.

- Prystay, T., **R. Sipler**, *M. Foroutani, A. LeBris. 2023. The Role of Boreal Seagrass Meadows in the Coastal Filter. Biogeosciences. 128(12), p.e2023JG007537.
- Shao, Z., Xu, Y., Wang, H., Luo, W., Wang, L., Huang, Y., Agawin, N. S. R., Ahmed, A., Benavides, M., Bentzon-Tilia, M., Berman-Frank, I., Berthelot, H., Biegala, I. C., Bif, M. B., Bode, A., Bonnet, S., Bronk, D. A., Brown, M. V., Campbell, L., Capone, D. G., Carpenter, E. J., Cassar, N., Chang, B. X., Chappell, D., Chen, Y.-L., Church, M. J., Cornejo-Castillo, F. M., Detoni, A. M. S., Doney, S. C., Dupouy, C., Estrada, M., Fernandez, C., Fernández-Castro, B., Fonseca-Batista, D., Foster, R. A., Furuya, K., Garcia, N., Goto, K., Gago, J., Gradoville, M. R., Hamersley, M. R., Henke, B. A., Hörstmann, C., Jayakumar, A., Jiang, Z., Kao, S.-J., Karl, D. M., Kittu, L. R., Knapp, A. N., Kumar, S., LaRoche, J., Liu, H., Liu, J., Lory, C., Löscher, C. R., Marañón, E., Messer, L. F., Mills, M. M., Mohr, W., Moisander, P. H., Mahaffey, C., Moore, R., Mouriño-Carballido, B., Mulholland, M. R., Nakaoka, S., Needoba, J. A., Raes, E. J., Rahav, E., Ramírez-Cárdenas, T., Reeder, C. F., Riemann, L., Riou, V., Robidart, J. C., Sarma, V. V. S. S., Sato, T., Saxena, H., Selden, C., Seymour, J. R., Shi, D., Shiozaki, T., Singh, A., Sipler, R. E., Sun, J., Suzuki, K., Takahashi, K., Tan, Y., Tang, W., Tremblay, J.-É., Turk-Kubo, K., Wen, Z., White, A. E., Wilson, S. T., Yoshida, T., Zehr, J. P., Zhang, R., Zhang, Y., and Luo, Y.-W. 2023. Global oceanic diazotroph database version 2 and elevated estimate of global oceanic N2 fixation, Earth Syst. Sci. Data, 15, 3673–3709, https://doi.org/10.5194/essd-15-3673-2023.
- *Stanley, B.C., **R.E. Sipler,** Q.N. Roberts, J.L. Spackeen, E.Z. Norton and D.A. Bronk. 2023. Lateseason nitrogen uptake across the western coastal Alaskan Arctic. *Limnology and Oceanography*. DOI: 10.1002/Ino.12378
- *Khoo, C., R.E. Sipler, S.J.M. Faulkner, S.G. Boyd, M. Beheshti Foroutani, C.E. McBride, S.E. Ziegler. 2023. Size fractionated biogeochemical constituents across adjacent coastal systems informs approaches for integrating small catchment studies into regional models. *Limnology and Oceanography.* DOI: 10.1002/lno.12346
- *Khoo, C.L., R.E. Sipler, A.R. Fudge, M. Beheshti Foroutani, S.G. Boyd, and S.E. Ziegler. 2022. Salt-Induced Flocculation of Dissolved Organic Matter and Iron Is Controlled by Their Concentration and Ratio in Boreal Coastal Systems. Journal of Geophysical Research: Biogeosciences, 127(11), p.e2022JG006844.
 - 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)
- Prystay T., Sipler R., Foroutani M., Le Bris A. 2023. Describing the contribution of seagrass meadows to the coastal filter in a boreal system. SEANOE. https://doi.org/10.17882/94482

GRANTS AND FUNDING

2023

2022 Bigelow Seed Fund. Assessing carbon uptake potential for North American microbial consortia. Sipler. ΡI \$32,999 USD 2022 Spencer Fund. Phosphate recovery potential of native microbial consortia. Sipler. Ы \$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

2020-2026	Co-PI \$691,732 of \$4 million CAD Ocean Frontiers Institute (OFI) Funding – The Northwest Atlantic as a Climate Ocean: Projecting Future Changes in Productivity and the Biological Carbon Pump
2020-2022	Co-PI \$168,267 of \$4 million CAD Natural Environment Research Council (NERC) – Resolving climate sensitivity associated with shallow mixed phase cloud in the oceanic mid- to high-latitudes (M-Phase). Murray
2019-2022	Collaborator Ship time and travel 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
2018-2022	Co-PI \$24,833 CAD Natural Sciences and Engineering Research Council (NSERC) Discovery Grant. Exploring the sources, sinks and uptake of carbon and nitrogen in the coastal ocean. Sipler
2010 2021	PI \$137,000 CAD
2018-2024	Ocean Frontiers Institute (OFI) Funding – Indicators of Ecosystems Change.
2017-2022	Co-PI Sipler part \$285,000 CAD Canada Research Chair (CRC) - Ocean Biogeochemistry. Sipler
2017-2022	PI \$500,000 CAD
2019-2021	Memorial University Ocean Frontiers Institute (OFI) Funding – Cold Room
	Infrastructure to culture marine microorganisms. Sipler & Passow
2010 2021	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 N Sources and Sinks. Bronk and Sipler	itrogen: Compound Level Assessment of
	Co-PI	\$329,930 USD
2017 - 2018	NSF- Polar Programs Arctic – Collaborati	ve Research: Is Nitrogen Fixation
	Widespread in the Chukchi and Beaufor	t Seas? Sipler
	PI-Supplemental funding	\$72,801 USD
2015 - 2018	NSF Polar Programs Arctic – Collaborativ Widespread in the Chukchi and Beaufort	t Seas? Sipler, Bronk, and Zehr
2012 2015	Lead PI	\$405,188 USD
2012 - 2015	Water Environment Research Foundatio	0 0 1
	within wastewater treatment plants. Bro	-
2014 2015	Co-PI	\$255,000 USD
2014 - 2015	NSF- Polar Programs Antarctic – Collabo	
	iron, carbon dioxide and temperature or	•
	future changes in export production in t	
	funding for a grant, for which R. Sipler se served at NSF. Allen, Hutchins, and Siple	
	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 Run	
	Sipler, Bronk, Frischer, Nejstgaard and S	utton
	Lead-PI	\$33,211 USD
2010	Hampton Roads Sanitation District – Che	
	passes through a WWTP	
	Co-PI	\$64,607 + student internship USD

PRESENTATIONS

Selected Talks and Posters(* indicates a student contribution)

*McBride, C.E., S.E. Ziegler, *SJM Faulkner, *CLL Khoo, *MB Foroutani, E. Oliver, E. Pijogge, C. Anderson, **R.E. Sipler**. 2024. Nitrogen and carbon cycling under ice-covered conditions in a coastal sub-Arctic ecosystem. 2024 Ocean Sciences Meeting. New Orleans, LA, USA. Talk.

Healey, M., M.R. Martí, R.E. Sipler, C. McBride, E. Romanelli, C. Cisternas-Novoa, M.
 Armstrong, K. Buesseler and S. Kienast. Quantifying sinking particle fluxes and the biological carbon pump efficiency during a Phaeocystis bloom in the Northwest Atlantic Ocean. 2024 Ocean Sciences Meeting. New Orleans, LA, USA. Talk.

Pollara, S., J. Loay, E. Rowland, M. Roberts, R. Stevens-Green, J. LaRoche, C. McBride, R. Sipler, E. Devred, B. Ward, S. Kienast, Z. Finkel, E. Bertrand. 2024. Quantifying sinking

particle fluxes and the biological carbon pump efficiency during a Phaeocystis bloom in the Northwest Atlantic Ocean. 2024 Ocean Sciences Meeting. New Orleans, LA, USA. Talk.

- Sipler, R.E., C. McBride, B. Dempsey, B. Stanley, and C. Buchwald. 2024. No carbon without nitrogen: Assessing the role of nitrogen cycling in relation to the biological carbon pump. 2024 Ocean Sciences Meeting. New Orleans, LA, USA. Talk.
- Dempsey, B., C. Buchwald, R. Sipler, C. McBride. 2024. Nitrogen Cycling in the Labrador Sea: Characterizing New vs. Recycled Production During a Phaeocystis Bloom Using Stable Isotopes of Ammonium and Nitrate. 2024 Ocean Sciences Meeting. New Orleans, LA, USA. Talk.
- Pollara, S., J. Loay, E. Rowland, M. Roberts, R. Stevens-Green, J. LaRoche, C. McBride, R. Sipler, E. Devred, B. Ward, S. Kienast, Z. Finkel, E. Bertrand. 2023. Metaproteomics-based assessments of Labrador Sea primary production potential during a historically large Spring phytoplankton bloom. Canadian Meteorological and Oceanographic Society.
- Roca-Martí, M., M. Healey, **R.E. Sipler**, C. McBride, E. Romanelli, C. Cisternas-Novoa, M. Armstrong, K. Buesseler, S.S. Kienast. 2023. Quantifying the biological carbon pump efficiency in the Labrador Sea during a Phaeocystis bloom.
- Dempsey, B., C. Buchwald, **R. Sipler**, C. McBride. 2023. Modelling nitrogen cycling and stable isotopic composition of nitrate during a *Phaeocystis* bloom in Labrador Sea. Canadian Meteorological and Oceanographic Society.
- Beckley, L., L. Jabre, R. Middag, W. Van de Poll, **R.E. Sipler**, E. Bertrand. 2023. Examining the interactive effects of temperature and iron on phytoplankton communities in the High Latitude North Atlantic. Canadian Meteorological and Oceanographic Society.
- Saunders, M., J. Angnatok, R. Laing, C. Vis, A. Metaxas, D. Cote, H. Reader, **R.E. Sipler**, K. Ortenzi, L-A. Marshall. 2022. Painting a Full Picture: Collaboration and Lessons Learned from Understanding Complex Ocean Systems in Nunatsiavut. ArcticNet ASM 2022.
- Prystay, T.S., **R.E. Sipler**. A. LeBris. 2022. Measuring carbon sources and total sequestration by eelgrass meadows in Atlantic Canada. World Seagrass Conference Annapolis, MD, USA. Talk.
- 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 mater 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 provide 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-Noundoub, 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 openwater 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 waming 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

2020-2022 Member, Canadian National Research Vessel Task Team

- 2019-2021 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

2023 - present	Indigenous Community Liaison, Bigelow Laboratory for Ocean Science
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	CREAIT 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)

- 2023 Impacts of environmental change on Maine's freshwater and marine resources. South Portland - Cape Elizabeth Rotary Club, South Portland, ME (*Talk*)
- 2022 Small solutions to big problems: use of microorganisms to combat environmental change. Boothbay Yacht Club. Boothbay, ME (*Talk*)
- 2022 A New Initiative to Protect Aquatic Resources. Wolfeboro Waters Committee. Boothbay, ME (*Talk*)
- 2022 Protecting Maine's Most Valuable Resources. Barters Island Community Association. Barters Island, ME (*Talk*)
- 2021 STEM for GIRLS virtual classroom, Polar Oceanography, Newfoundland and available across Canada. (virtual/interactive discussion)
- 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)
- 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

2021-2023 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)

2019-2022	Maryam Beheshti Foroutani, PhD student, Marine Biology (MUN)
2019-present	Colleen McBride, MSc, Marine Biology (MUN)
2018-2023	Eric Isemonger, PhD student, Marine Natural Products (Rhodes
	University, SA) Co-Supervisor
2018-present	Sally Faulkner, MSc student, Marine Biology (MUN)
2018-2022	Celyn Khoo, MSc student, Environmental Science (MUN)
2018- 2019	Nicole Spehn, MSc, Environmental Science (MUN)

Undergraduate honors students

2021-2022 Ajatshatru Balaji, Marine Biology Honours (MUN)

Undergraduate interns and work term students

David Gonzalez, Research Experience for Undergraduate (Bigelow)
Annabelle Warren, Research Experience for Undergraduate
Annabelle Warren, Sea Change Semester Student (Colby/ Bigelow)
Natalie Tejeda, Research Experience for Undergraduate (Bigelow)
John Curtis, Research Experience for Undergraduate (Bigelow)
Emma Johnson, Research Experience for Undergraduate (Bigelow)
Molly Gunn, Work-term student (MUN Marine Institute)
Ajatshatru Balaji, undergraduate student (MUN MUCEP)
Elie Pellerin, undergraduate student (MUN MUCEP)
Alexandria Fudge, undergraduate student (MI MUCEP)
Sophie Drolet, undergraduate student (MUN MUCEP)
MacGregor Parents, undergraduate student (MUN MUCEP)
Erin Boland, undergraduate student (MUN MUCEP)
Michelle Onofrio, Summer REU student (VIMS)

Research Staff

2023-2024	John Curtis, Science Technician I (Bigelow)
2021-2022	Nigel Guerra, Science Tech II (MUN)
2019-2023	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

Rachel Steffen, MSc student, University of Georgia, USA
Jong Jin Lee (PhD student; MUN) Comprehensive exam committee
member
Antoine Viallard Vallette (PhD student; MUN Committee Member)
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