

Rose M. Cory

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EDUCATION

Ph.D., Environmental Engineering, University of Colorado, Boulder 2006
M.S., Environmental Engineering Science, Michigan Technological University 2001
B.S., Chemistry, Michigan State University 1998

PROFESSIONAL POSITIONS

Associate Chair for Curriculum and Undergraduate Studies, 2021 to present and
Professor, 2022 to present, Department of Earth & Environmental Sciences, University of
Michigan
Associate Professor, 2017 to 2022, Department of Earth & Environmental Sciences, University
of Michigan
Assistant Professor, 2013 to 2017, Department of Earth & Environmental Sciences, University
of Michigan
Assistant Professor, 2009 to 2013, Department of Environmental Sciences & Engineering,
University of North Carolina Chapel Hill
Director's Postdoctoral Fellow, 2008 to 2009, Los Alamos National Laboratory,
Postdoctoral Fellow, 2006 to 2007, Departments of Chemistry and Ecology, Evolution and
Biology, University of Minnesota Twin Cities

EDITORIAL POSITIONS

Editor, Geophysical Research Letters 2018 – 2022
Guest Editor, Environmental Sciences: Processes & Impacts 2019 – 2020
Associate Editor, Geophysical Research Letters 2016 – 2017

AWARDS

John Dewey Teaching Award 2022
NSF Faculty Early Career Development Award (CAREER) 2014
Excellence in Reviewing award for *Biogeochemistry* 2013
Camille & Henry Dreyfus Foundation Postdoctoral Mentor in Environmental Chemistry 2012
Director's Postdoctoral Fellowship Award, Los Alamos National Laboratory, NM 2008
National Science Foundation IGERT Fellowship, Carbon, Climate and Society Initiative, 2003

GRANTS**Current:**

Department of the Interior/USGS. Decision-Ready cDOM: Development of a National Scale
Water Quality Dataset from Remotely Sensed Dissolved Organic Matter. Isabella Olesky (PI,
University of Colorado, Boulder), Rose Cory (co-PI, University of Michigan), Kevin Ryan (co-PI,
USGS Project Officer) (\$337,987; \$27,466 to Co-PI Cory), 2025-2026.

NSF-DEB. "LTER: The Role of Climate Variability in Controlling Arctic Ecosystem Function"; Kevin Griffin (PI, Columbia University), Natalie Boelman (co-PI, Columbia University), Duncan Menge (co-PI, Columbia University), Rose Cory (co-PI, University of Michigan), George Kling (co-PI, University of Michigan) (\$7.65M; \$1.2M to Co-PI Cory), 2023-2029.

DOE-BER. "Dynamics of interconnected surface-subsurface flow and reactive transport processes across the hillslope-riparian zone-river corridor continuum of cold, high-latitude watersheds" Bayani Cardenas (PI, UT Austin), Bethany Neilson (co-I, Utah State), Pin Shuai (co-I, Utah State), Rose Cory, (co-I, University of Michigan), George Kling (co-I, University of Michigan), and Ethan Coon (co-I, Oak Ridge National Lab) (\$1M; \$72K to Co-I Cory), 2023-2026.

Past:

NSF-OPP. "Doctoral Dissertation Research: Sunlight stimulates a spectrum of microbial CO₂ production from permafrost carbon"; \$20,549 to PI Cory and Co-PI Emma Rieb (PhD student), 2023.

Cooperative Institute for Great Lakes Research (CIGLR). "Does hydrogen peroxide in Lake Erie sediments influence the toxicity of *Microcystis* blooms?" \$39,860 to PI Cory, 2023.

NSF – DEB 1753731. "Collaborative Research - Coupled biological and photochemical degradation of dissolved organic carbon in the Arctic "; Co-PI with B. Crump (PI), G. W. Kling, \$1.1M (\$285K to Co-PI Cory), 2018-2023.

NSF - OCE 1736629. "The role of heterotrophic bacteria in protecting cyanobacteria from hydrogen peroxide in coastal ecosystems"; Co-PI with G. Dick (PI), G. W. Kling (co-PI), \$876K (\$330 to Co-PI Cory), 2018-2023.

University of Michigan, Associate Professor Support Fund. "Sunlight oxidation of methane in freshwaters"; \$71K to PI Cory, 2020-2022.

NSF - CAREER 1255060, "Iron and reactive oxygen species in the oxidation and fate of dissolved organic matter". \$596K to PI Cory, 2015-2021.

NSF- EAR 1451372, "Collaborative Research: Coupled Geochemical and Geobiological Characterization of Dissolved Organic Matter Oxidation to Carbon Dioxide". Co-PI with P. A. Hatcher (PI) and L.A. Kaplan. (\$155K to Co-PI Cory) 2015-2019.

NSF - ARC 1023270. "Collaborative Research: Turning on the lights - Photochemical and microbial processing of newly exposed carbon in arctic ecosystems"; \$536K (\$258K to PI Cory) with G.W. Kling co-PI. 2010-2013

Camille & Henry Dreyfus Foundation Postdoctoral Mentor in Environmental Chemistry. "Dark oxidation of dissolved organic matter: implications for arctic carbon cycling." \$120K to PI Cory. 2014-2016.

University of Michigan Water Center, “Building capacity for freshwater science: Integrating microbial genomics, environmental chemistry, and ecosystem processes to understand harmful algal blooms”, PI G. J. Dick, Co-PIs T. H. Johengen, V. J. Deneff, Additional Team Members: D. H. Sherman, R. M. Cory, M. Duhaime, G. W. Kling, G. L. Fahnenstiel, S. A. Ruberg, T. James, T. Davis. \$250K (\$15K to Cory). 2014-2015.

University of Michigan Water Center, “Advancing student learning in freshwater science: curriculum development and research experiences for undergraduates in aquatic geochemistry” \$33K to Cory (PI). 2014-2015.

UNC University Research Council \$2K to Cory. 2013-2014.

UNC Jr. Faculty Development Award: “Controls on new carbon inputs to the atmosphere – the role of reactive oxygen”, \$7.5K to Cory. 2011.

Grants for instrument time:

EMSL Science Theme Proposal award for 50 hours of ultra-high resolution mass spectrometry (FTICR MS) and 500 hours of advanced NMR at Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory. “Interactions of iron and organic matter as controls on the fate of permafrost carbon in the Arctic”. Estimated value of support provided to this project is approximately \$45,883 to Cory (PI). 2016-2018

DOE JGI-EMSL Collaborative Science Proposal (with PI Byron Crump, OSU, Co PIs Cory and Kling) award for metatranscriptomic sequencing and mass spec analysis. “Decoding DOM degradation: how does carbon source and sunlight exposure alter microbial metabolism and expression of genome-encoded metabolic degradation of permafrost organic matter?” 2014-2016

EMSL Science Theme Proposal award for 600 hours of ultra-high resolution mass spectrometry (FTICR MS) and ^{13}C NMR at the Environmental Molecular Sciences Laboratory, Pacific Northwest National Laboratory. “The fate of newly exposed carbon in the Arctic – controls on release to the atmosphere and transport to the ocean” to Cory (PI) 2013-2016

National High Field Magnetic Laboratory: 40 hours of ultra-high resolution mass spectrometry (FTICR MS) at. “Partial oxidation of dissolved organic matter by singlet oxygen” to Cory (PI) 2007

PUBLICATIONS

Google Scholar Citation Summary (Aug 2025)

<u>Total Citations</u>	<u>H-index</u>	<u>i-10 index</u>
11477	49	70

(*Student author, ^βPost-doc author, ^δK-12 teacher author)

76. Hart, L.N., R. Errera, C. Godwin, K. A. Loftin, Z. R. Laughrey, L. R. Katona, E. C. Johnson*, R.M. Cory, E. A. Kiledal, J. J. Kharbush, D. H. Sherman, G. J. Dick. Diverse cyanopeptides follow distinct temporal succession patterns in Lake Erie harmful algal blooms. *Accepted, ISME*.

75. Smith*, D.J., G. W. Kling, G. J. Dick, R.M. Cory. Microbes control the light-dependent production and dark decay of hydrogen peroxide in eutrophic surface waters. *In revision for Journal of Great Lakes Research*.

Published, in press, or in review in peer-reviewed journals

74. Rieb*, C. A. Polik, C. P. Ward, G. W. Kling, R. M. Cory. (2025) Controls on the apparent quantum yield for photomineralization of dissolved organic matter in arctic freshwaters. In press, *Environmental Science: Processes & Impacts*.

73. Sullivan, S.N., J. C. Bowen*, L. A. Kaplan, R. M. Cory, P. G. Hatcher. (2025) Seasonal and longitudinal dynamics of DOM within headwater streams of a tropical evergreen forest. *Water Research*, 281, 123668.

72. Dolan*, W., T. Pavelsky, J. Davis, N. Laframboise*, C. A. Polik, R. M. Cory. (2025) Effects of total suspended solids on photomineralization of dissolved organic matter in the Peace-Athabasca Delta, Canada. *Journal of Geophysical Research: Biogeosciences*, 130(6), e2024JG008620.

69. Rieb*, C. A. Polik, C. P. Ward, G. W. Kling, R. M. Cory. (2024) Controls on the respiration of ancient carbon draining from permafrost soils into sunlit arctic surface waters. *Journal of Geophysical Research: Biogeosciences*, 129(5), p.e2023JG007853.

68. Pandey*, D.R., C.A. Polik, R.M. Cory. (2022) Controls on the photochemical production of hydrogen peroxide in Lake Erie. *Environ. Sci.: Processes Impacts*, doi: 10.1039/D2EM00327A

67. Koehler, B., L.C. Powers, R.M. Cory, K. Einarsdóttir, Y. Gu, L. J. Tranvik, A. V. Vähätalo, C.P. Ward*, W.L. Miller. (2022) Inter-laboratory differences in the apparent quantum yield for the photochemical production of dissolved inorganic carbon in inland waters, and implications for photochemical rate modeling. *Limnology and Oceanography: Methods*, doi: 10.1002/lom3.10489

66. Smith*, D.J., M.A. Berry, R.M. Cory, V.J. Denef, M.B. Duhaime, T.H. Johengen, G.W. Kling, K.A. Meyer, S.A. Ruberg, D. Stuart, T. W. Davis, G. J. Dick. (2022) Heterotrophic bacteria dominate catalase expression during *Microcystis* blooms. *Applied and Environmental Microbiology*, doi: 10.1128/aem.02544-21

65. Li*, A., J. D. Drummond, J.C. Bowen*, R. M. Cory, L. A. Kaplan, A. I. Packman. (2021). Effect of decreasing biological lability on dissolved organic matter dynamics in streams. *Water Resources Research*. doi: 10.1029/2020WR027918

64. Jutaporn*, P., R.M. Cory, P.A. Singer, O. Coronell. (2021). Efficacy of selected pretreatment processes in the mitigation of low-pressure membrane fouling and its correlation to their removal of microbial DOM. *Chemosphere*. doi: 10.1016/j.chemosphere.2021.130284

63. Bowen*, J.C., C.P. Ward, G.W. Kling, R. M. Cory. (2020). Arctic amplification of global warming strengthened by sunlight oxidation of permafrost carbon to CO₂. *Geophysical Research Letters*. doi: 10.1029/2020GL087085
- **Pickup by 15 news outlets including original stories by GRIST and Eos**
 - **Featured as the journal cover art for July, 2020**
62. Nalven, S.G., C. P. Ward^β, R. M. Cory, G. W. Kling, T. J. Sharpton, C. M. Sullivan, B. C. Crump. (2020). Experimental metatranscriptomics reveals costs and benefits of dissolved organic matter photo-alteration for freshwater microbes in the Arctic. *Environmental Microbiology*. doi: 10.1111/1462-2920.15121
61. Ward^β, C.P., R.M. Cory. (2020). Assessing the prevalence, products, and pathways of dissolved organic matter partial photo-oxidation in arctic surface waters. *Environ. Sci.: Processes Impacts*, doi: 10.1039/C9EM00504H
60. Barnes, P.W., C. E. Williamson, R. M. Lucas, S.A. Robinson. S. Madronich, N. D. Paul, J. F. Bornman, A. F. Bais, B.Sulzberger, S. R. Wilson, A. L. Andrady, R. L. McKenzie, P. J. Neale, A. T. Austin, G. H. Bernhard, K. R. Solomon, R. E. Neale, P. J. Young, M. Norval, L. E. Rhodes, S. Hylander, K. C. Rose, J. Longstreth, P.J. Aucamp, C. L. Ballaré, R. M. Cory, S. D. Flint, F. R. de Grijl, D. Haeder, A. M. Heikkilä, M. AK. Jansen, K. K. Pandey, T. M. Robson, C. A .Sinclair, S. Wängberg, R. C. Worrest, S. Yazar, A.R Young, R. G. Zepp. (2019). Ozone depletion, ultraviolet radiation, climate change and prospects for a sustainable future. *Nat. Sustain.* doi: 10.1038/s41893-019-0314-2
59. Whitty, S.D., D. C. Waggoner, R. M. Cory, L. A. Kaplan, P. G. Hatcher. (2021) Direct non-invasive ¹H NMR analysis of stream water DOM. *Magnetic Resonance in Chemistry*, doi: 10.1002/mrc.4935
58. Bowen*, J.C., L. A. Kaplan, R. M. Cory. (2020) Photodegradation disproportionately impacts biodegradation of semi-labile DOM in streams. *Limnology & Oceanography*, doi: 10.1002/lno.11244
57. Sulzberger, B., A.T. Austin, R.M. Cory, R.G. Zepp, N.D. Paul. (2019) Solar UV radiation in a changing world: roles of cryosphere–land–water–atmosphere interfaces in global biogeochemical cycles. *Photochem. Photobiol. Sci.*, doi: 10.1039/C8PP90063A
56. Li, , A. F. Aubeneau, T. King, R. M. Cory, B. T. Neilson, D. Bolster, A. I. Packman. (2019) Effects of vertical hydrodynamic mixing on photomineralization of dissolved organic carbon in arctic surface waters. *Environ. Sci.: Processes Impacts*. doi:10.1039/C8EM00455B
55. Trusiak*, A. Treibergs, L.A. Kling, G.W. Cory, R.M. (2019) The controls of iron and oxygen on hydroxyl radical (•OH) production in soils. *Soil Syst.* 3, 1.
54. Hassett, B.A., E. B. Sudduth, K. A. Somers, D. L. Urban, C. R. Violin, S. Wang, J. P. Wright, R. M. Cory, E. S. Bernhardt. (2018) Pulling apart the urbanization axis: patterns of physiochemical degradation and biological response across stream ecosystems. *Freshwater Science*, doi.org/10.1086/699387

53. Cory, R.M., G. W. Kling. (2018) Interactions between sunlight and microorganisms influence DOM degradation along the aquatic continuum. *Limnology and Oceanography Letters*, doi.org/10.1002/lol2.10060
52. Trusiak*, A., L. A. Treibergs, G. W. Kling, R. M. Cory. (2018) The role of iron and reactive oxygen species in the production of CO₂ in arctic soil waters. *Geochimica et Cosmochimica Acta*, doi.org/10.1016/j.gca.2017.12.022
51. Ward*, C. P., S.A. Nalven, B.C. Crump, G.W. Kling, R.M. Cory. (2017) Photochemical alteration of dissolved organic carbon draining permafrost soils shifts microbial metabolic pathways and stimulates respiration. *Nature Communications*, doi:10.1038/s41467-017-00759-2
50. Environmental effects of ozone depletion and its interactions with climate change: Progress Report, 2016. (2017) United Nations Environmental Programme, Environmental Effects Assessment Panel. *Photochem. Photobiol. Sci.*, doi: 10.1039/C7PP90001E
R.M. Cory is a contributing author on this report
49. Waggoner, D.C., A. S. Wozniak, R. M. Cory, P. G. Hatcher. (2017) The role of reactive oxygen species in the degradation of lignin derived dissolved organic matter. *Geochimica et Cosmochimica Acta*, doi.org/10.1016/j.gca.2017.03.036
48. Taterka^δ, B., R.M. Cory. (2016) Students learn firsthand how thawing permafrost adds to global warming. *The Science Teacher*.
47. Berry, M.A., R. M. Cory, T. W. Davis, M. B. Duhaime, T. H. Johengen, G. W. Kling, J. A. Marino, P. A. Den Uyl, D. C. Gossiaux, G. J. Dick, V. J. Deneff. (2016) Cyanobacterial harmful algal blooms are a biological disturbance to western Lake Erie bacterial communities. *Environmental Microbiology*, doi: 10.1111/1462-2920.13640
46. Cory, R.M., T. W. Davis, G. J. Dick, T. H. Johengen, V. J. Deneff, M. A. Berry, S.E. Page^β, S. B. Watson, K. Yuhas, G. W. Kling. (2016) Seasonal dynamics in dissolved organic matter, hydrogen peroxide, and cyanobacterial blooms in Lake Erie. *Frontiers in Marine Science*, doi: 10.3389/fmars.2016.00054
45. Panitan, J., P. C. Singer, R. M. Cory, O. Coronell. (2016) Minimization of low-pressure membrane fouling using a magnetic ion exchange (Miex®) resin. *Water Research*, doi:10.1016/j.watres.2016.04.007
44. Ward*, C. P., R.M. Cory. (2016) Complete and partial photo-oxidation of DOM draining permafrost soils. *Environ. Sci. Technol.*, doi:10.1021/acs.est.5b05354
43. Vonk, J. E., S. E. Tank, W. B. Bowden, I. Laurion, W. F. Vincent, P. Alekseychik, M. Amyot, M. F. Billet, J. Canário, R. M. Cory, B. N. Deshpande, M. Helbig, M. Jammet, J. Karlsson, J. Larouche, G. MacMillan, M. Rautio, K. M. Walter Anthony, and K. P. Wickland. (2015)

Reviews and Syntheses: Effects of permafrost thaw on arctic aquatic ecosystems.
Biogeosciences, doi: 10.5194/bg-12-7129-2015

42. Cory, R.M., K. H. Harrold*, B.T. Neilson, G. W. Kling. (2015) Controls on dissolved organic matter (DOM) degradation in a headwater stream: the influence of photochemical and hydrological conditions in determining light-limitation or substrate-limitation of photo-degradation. *Biogeosciences*, doi: 10.5194/bg-12-6669-2015

41. Ward*, C.P., R.M. Cory. (2015) Chemical composition of dissolved organic matter draining permafrost soils. *Geochimica et Cosmochimica Acta*, doi: 10.1016/j.gca.2015.07.001

40. Helton, A. M., M. S. Wright, E. S. Bernhardt, G. C. Poole, R.M. Cory, J. A. Stanford. (2015) Dissolved organic carbon lability increases with water residence time in the alluvial aquifer of a river-floodplain ecosystem. *J. Geophys. Res, Biogeosciences*, doi: 10.1002/2014JG002832

39. Brezonik, P.L., P. R. Bloom, R. L. Sleighter, R. M. Cory, A. R. Khwaja, P.G. Hatcher. (2015) Chemical differences of aquatic humic substances extracted by XAD-8 and DEAE-Cellulose. *J. Environ. Chem. Engin.*, doi:10.1016/j.jece.2015.03.004

38. Amado, A.M., J. B. Cotner, Cory, R.M., B. L. Edlund, K. McNeill. (2014) Disentangling the interactions between photochemical and bacterial degradation of dissolved organic matter: amino acids play a central role. *Microbial Ecology*, doi: 10.1007/s00248-014-0512-4

37. Cory, R.M., C. P. Ward*, B. C. Crump, G. W. Kling. (2014) Sunlight controls water column processing of carbon in arctic freshwaters. *Science*, doi: 10.1126/science.1253119

- **Pickup by over 20 news outlets and is in the top 5% (99th percentile) of all research outputs ever tracked by Altmetric**
- **Adapted by AAAS for “Science in the Classroom” collection of annotated research papers and accompanying teaching materials**
<http://scienceintheclassroom.org/research-papers/midnight-sun-contributing-global-warming/university>

36. Sleighter, R.L., R. M. Cory, L. A. Kaplan, H. A.N. Abdulla, P. G. Hatcher. (2014) A coupled geochemical and biogeochemical approach to characterize bio-reactivity of dissolved organic matter from a headwater stream. *J. Geophys. Res, Biogeosciences*, doi: 10.1002/2013JG002600

35. *Ward, C.P., R.L. Sleighter, P.G. Hatcher, R. M. Cory. (2014) Insights into the complete and partial photooxidation of black carbon in surface waters. *Environ. Sci.: Processes Impacts*, doi: 10.1039/c3em00597f

Featured on journal cover, March 2014

34. ^βPage, S.E. J. R. Logan, R. M. Cory, K. McNeill. (2014) Evidence for dissolved organic matter as the primary source and sink of photochemically produced hydroxyl radical in arctic surface waters. *Environ. Sci.: Processes Impacts*, doi: 10.1039/c3em00596h
33. Lyon, B. A., R. M. Cory, H. S. Weinberg. (2014) Changes in dissolved organic matter fluorescence and disinfection byproduct formation from UV and subsequent chlorination/chloramination. *J. Haz. Mat.*, doi:10.1016/j.jhazmat.2013.10.065
32. ^βPage, S. E., G. W. Kling, M. Sander, K. H. Harrold*, R. Logan, K. McNeill, R.M. Cory. (2013) Dark formation of hydroxyl radical in arctic soil and surface waters. *Environ. Sci. Technol.*, doi: 10.1021/es4033265
31. Cawley, K., D.M. McKnight, P.L. Miller, R.M. Cory, R. Fimmen, J. Geurard, M. Diesler, C. Jaros, Y.P. Chin, C. F. Foreman. (2013) Characterization of fulvic acid fractions of dissolved organic matter during ice-out in a hyper-eutrophic, coastal pond in Antarctica. *Environ. Res. Lett.*, doi: 10.1088/1748-9326/8/4/045015
30. Foreman, M. C., R.M. Cory, C. E. Morris, M. D. SanClements, H. J. Smith, J. T. Lisle, P. L. Miller, Y. P. Chin, D.M. McKnight. (2013) Microbial growth under humic-free conditions in a supraglacial stream system on the Cotton Glacier, Antarctica. *Environ. Res. Lett.*, doi: 10.1088/1748-9326/8/3/035022
29. Shields, J.G., A. Wang*, R. M. Cory, J. R. Stewart. (2013) Determination of specific types and relative levels of QPCR inhibitors in environmental water samples using excitation–emission matrix spectroscopy and PARAFAC. *Wat. Res.*, doi: 10.1016/j.watres.2013.03.049
28. Cory, R.M., B. C. Crump, J. A. Dobkowski, G.W. Kling. (2013) Surface exposure to sunlight stimulates CO₂ release from permafrost soil carbon in the Arctic. *Proc. Nat. Acad. Sci.*, doi: 10.1073/pnas.1214104110
Pickup by over 20 news outlets
27. Remucal, C.K., R.M. Cory, M. Sander, K. McNeill. (2012) Low molecular weight components in an aquatic humic substance as characterized by membrane dialysis and orbitrap mass spectrometry. *Environ. Sci. Technol.*, doi: 10.1021/es302468q
26. Cory, R.M., L.A. Kaplan. (2012) Biological lability of streamwater fluorescent dissolved organic matter. *Limnol. Oceanogr.*, doi: 10.4319/lo.2012.57.5.1347

An erratum was submitted for this publication to correct a mathematical error in the data processing that did not alter conclusions of the paper: Cory, R.M., L.A. Kaplan. (2013) Erratum: Biological lability of streamwater fluorescent dissolved organic matter. Limnol. Oceanogr., doi: 10.4319/lo.2013.58.1.0428

25. Peterson, B.M., A.M. McNally, R. M. Cory, J. D. Thoemke, J. B. Cotner, K. McNeill. (2012) Spatial and temporal distribution of singlet oxygen in Lake Superior. *Environ. Sci. Technol.*, doi: 10.1021/es301105e
24. Bone, A. J., B. P. Colman, A. P. Gondikas, K. M. Newton, K. H. Harrold*, R. M. Cory, J. M. Unrine, S. J. Klaine, C. W. Matson, R. T. Di Giulio. (2012) Biotic and abiotic interactions in aquatic microcosms determine fate and toxicity of Ag nanoparticles: Part 2 –Toxicity and Ag speciation. *Environ. Sci. Technol.*, doi: 10.1021/es204683m
23. Grannas, A. M., R. M. Cory, P. L. Miller, Y. Chin, D. M. McKnight. (2012) The role of dissolved organic matter in arctic surface waters in the photolysis of hexachlorobenzene and lindane. *J. Geophys. Res., Biogeosciences*, doi: 10.1029/2010JG001518
22. Lutz, B. D., E. S. Bernhardt, B. J. Roberts, R. M. Cory, P. J. Mulholland. (2012) Distinguishing dynamics of dissolved organic matter components in a forested stream using kinetic enrichments. *Limnol. Oceanogr.*, doi: 10.4319/lo.2012.57.1.0076
21. Maie, N., Y. Yamashita, R. M. Cory, J. N. Boyer, R. Jaffe. (2012) Application of excitation emission matrix fluorescence monitoring in the assessment of spatial and seasonal drivers of dissolved organic matter composition: Sources and physical disturbance controls. *Appl. Geochem.*, doi: 10.1016/j.apgeochem.2011.12.021
20. Merck, M.F., B.T. Neilson, R.M. Cory, G.W. Kling. (2012) Variability of in-stream and riparian storage in a beaded arctic stream. *Hydrol. Proc.*, doi: 10.1002/hyp.8323
19. Fang, X., J. Mao, R. M. Cory, D. M. McKnight, K. Schmidt-Rohr. (2011) ¹⁵N and ¹³C{¹⁴N} NMR investigation of the major nitrogen-containing segment in an aquatic fulvic acid: Evidence for a hydantoin derivative. *Magn. Reson. Chem.*, doi: 10.1002/mrc.2816
18. Foreman, C.M, M. Diesler, M. Greenwood, R.M. Cory, J. Laybourn-Parry, J.T. Lisle, C. Jaros, P.L. Miller, Y.P. Chin, D.M. McKnight. (2011) When a habitat freezes solid: microorganisms over-winter within the ice column of a coastal Antarctic. *FEMS Microbiol. Ecol.*, doi: 10.1111/j.1574-6941.2011.01061.x
17. Cory, R.M., K. McNeill, J.B. Cotner, A.M. Amado, J. Purcell, A. Marshall. (2010) Singlet oxygen in the coupled photo and biochemical processing of dissolved organic matter. *Environ. Sci. Technol.*, doi: 10.1021/es902989y
16. Miller, M.P., B. E. Simone, D. M. McKnight, R.M. Cory, M. W. Williams, E. W. Boyer. (2010) New light on a dark subject: comment. *Aquatic Sciences*, doi: 10.1007/s00027-010-0130-2
15. Yamashita, Y, R. M. Cory, J. Nishioka, K. Kuma, E. Tanoue, R. Jaffé. (2010) Fluorescence characteristics of dissolved organic matter in the deep waters of the Okhotsk Sea and the

northwestern North Pacific Ocean. *Deep Sea Research Part II: Topics in Oceanography*, doi: 10.1016/j.dsr2.2010.02.016

14. Cory, R.M., M.P. Miller, J. Guerard, D.M. McKnight, P. L. Miller. (2010) Effect of instrument-specific response on the analysis of fulvic acid fluorescence spectra. *Limnol. Oceanogr.*, doi: 10.4319/lom.2010.8.67

13. Fellman, J.B., M.P. Miller, R.M. Cory, D.V. D'Amore, D. White. (2009) Characterizing dissolved organic matter using PARAFAC modeling of fluorescence spectroscopy: A comparison of two models. *Environ. Sci. Technol.*, doi: 10.1021/es900143g

12. Cory, R.M., J.B. Cotner, K. McNeill. (2009) Quantifying interactions between singlet oxygen and aquatic fulvic acids. *Environ. Sci. Technol.*, doi: 10.1021/es801847g

11. Jaffé, R., D. M. McKnight, N. Maie, R.M. Cory, W.H. McDowell, J.L. Campbell. (2008) Spatial and temporal variations in DOM composition in ecosystems: The importance of long-term monitoring of optical properties. *J. Geophys. Res. Biogeosciences*, doi: 10.1029/2008JG000683

10. Cory, R.M., D.M. McKnight, Y. Chin, P. Miller, C. Jaros. (2007) Chemical characteristics of fulvic acids from Arctic surface waters: Microbial contributions and photochemical transformations. *J. Geophys. Res. Biogeosciences*, doi: 10.1029/2006JG000343

9. Mladenov, N., D.M. McKnight, S.A. Macko, M. Norris, R.M. Cory, L. Ramberg. (2007) Chemical characterization of DOM in channels of a seasonal wetland. *Aquatic Sciences*, doi: 10.1007/s00027-007-0905-2

8. Fimmen, R.L., R.M. Cory, Y.P. Chin, T. D. Trouts, D. M. McKnight. (2007) Probing the oxidation-reduction properties of terrestrially and microbially derived dissolved organic matter. *Geochimica Acta*, doi: 10.1016/j.gca.2007.04.009

7. Mao, J.D., R. M. Cory, D. M. McKnight, K. Schmidt-Rohr. (2007) Characterization of a nitrogen-rich fulvic acid and its precursor algae from solid state NMR. *Organic Geochemistry*, doi: 10.1007/s00027-007-0905-2

6. Williams, M.W. , M. Knauf, R. Cory, N. Caine, F. Liu. (2007) Nitrate content and potential microbial signature of rock glacier outflow, Colorado Front Range. *Earth Surface Processes and Landforms*, doi: 10.1002/esp.1455

5. Bade, D.L., S. R. Carpenter, J. J. Cole, M. L. Pace, E. Kritzberg, M. C. Van de Bogert, R. M. Cory, D. M. McKnight. (2007) Sources and fates of dissolved organic carbon in lakes as determined by whole-lake carbon isotope additions. *Biogeochemistry*, doi: 10.1007/s10533-006-9013-y

4. Miller, M., D.M. McKnight, R. M. Cory, M. Williams, R. Runkel. (2006) Hyporheic exchange and fulvic acid redox reactions in an alpine stream/wetland ecosystem, Colorado Front Range. *Environ. Sci. Technol.*, doi: 10.1021/es060635j
3. Cory, R.M., D.M. McKnight. (2005) Fluorescence spectroscopy reveals ubiquitous presence of oxidized and reduced quinones in dissolved organic matter. *Environ. Sci. Technol.*, doi: 10.1021/es0506962
2. Cory, R.M., S.A. Green, K.S. Pregitzer. (2004) Dissolved organic matter concentration and composition in the forests and streams of Olympic National Park, WA. *Biogeochemistry*, doi: 10.1023/B:BIOG.0000015785.71785.20
1. Fulton, J.R., D. M. McKnight, C. Foreman, R.M. Cory, C. Stedmon, E. Blunt. (2004) Changes in fulvic acid redox state through the oxycline of a permanently ice-covered Antarctic Lake. *Aquatic Sciences*, doi: 10.1007/s00027-003-0691-4

EDITED BOOK CHAPTERS (3)

3. Kaplan, L.A., R.M. Cory. 2016. Dissolved organic matter in stream ecosystems: forms, functions, and fluxes of watershed tea. In: Jones, J. Stanley E. (Eds.), *Streams in a Changing Environment*. Elsevier.
2. Stedmon, C.A., R.M. Cory. 2014. Biological origins and fate of fluorescent dissolved organic matter in aquatic environments. In: Coble, P.G., Lead, J.R., Baker, A, and Reynolds, D. (Eds.), *Fluorescence Applications in Aquatic Science*. Cambridge University Press, NY.
1. Cory, R.M., E.B. Boyer, D.M. McKnight. 2011. (Invited) Spectral methods to advance understanding of dissolved organic carbon dynamics in forested catchments. In: Levia, D.F., Carlyle-Moses, D.E. and Tanaka, T. (Eds.), *Forest Hydrology and Biogeochemistry: Synthesis of Past Research and Future Directions*. Ecological Studies Series, No. 216, Springer-Verlag, Heidelberg, Germany.

CONFERENCE ABSTRACTS

60. Gough, L., An, R., Bret-Harte, S., Cory, R.M., Dobkowski, J., Dunleavy, H., Kjaer, S., McLaren, J., Morrison, A., Motes, J. and Sistla, S. (2024) Progress on the Arctic LTER's Efforts Towards Long-lasting Inclusion and Equity. Fall meeting, American Geophysical Union, Washington, D.C.
59. Mukherjee, N., Shuai, P., Gao, B., Neilson, B.T., Cory, R.M., Coon, E., Kling, G.W. and Cardenas, M.B. (2023) Investigating Groundwater Flow and Thermal Transport in Arctic Supra-Permafrost Aquifers Using Field Observation Driven Integrated Hydrologic Models. Fall meeting, American Geophysical Union, San Francisco, CA.
58. Rieb*, C. A. Polik, C. P. Ward, G. W. Kling, R. M. Cory. (2023) Controls on the Respiration of Ancient Permafrost Carbon in Sunlit Arctic Surface Waters. Fall meeting, American Geophysical Union, San Francisco, CA.

57. Walker, D., R.M. Cory, J. Dobkowski, G. W. Kling, B. C. Crump. (2020) Bringing the Arctic to the High School Classroom. Fall meeting, American Geophysical Union, San Francisco, CA.
56. Neilson, B.T., M. B. Cardenas, M.O'Connor, T. King, M. T. Rasmussen, R. M. Cory, G. W. Kling. (2019) The role of groundwater dynamics on carbon export from continuous permafrost watersheds. American Geophysical Union Fall National Meeting. San Francisco, CA.
55. Bowen*, J.C., C.P. Ward, G.W. Kling, R. M. Cory (2019) Sunlight and iron control the oxidation of DOC leached from permafrost soils. American Geophysical Union Fall National Meeting. San Francisco, CA.
54. Bowden, W. B., R. M. Cory, D. Emerson, A. E. Giblin, E. Herndon, G. W. Kling, A.B. Michaud, N. Record. (2019) The Fundamental Roles of Iron as a Mediator of Land-Water Interactions in Arctic Catchments. American Geophysical Union Fall National Meeting. San Francisco, CA.
53. Cory, R.M., B. Taterka^δ, D. Walker^δ, G. W. Kling, B. C. Crump. (2019) Including K-12 teachers in field research: progress and lessons learned on communicating climate change science to a broader audience. American Geophysical Union Fall National Meeting. San Francisco, CA.
52. Cory, R.M., T. King, G.W. Kling, B. T. Neilson. (2018) Controls on Fluxes of Labile DOC from the Kuparuk River to the Arctic Ocean. POLAR2018, SCAR & IASC Conference, Davos, Switzerland.
51. Trusiak*, A., L.A. Treibergs, G.W. Kling, J. Bargar, V. Noël, R.M. Cory. (2018) The role of iron complexation in the production of reactive oxygen species and CO₂ in arctic soil waters. Goldschmidt 2018, Boston, MA.
50. Cory, R.M., A. Trusiak*, C.P. Ward, G.W., Kling, V. Noël, J. Bargar. (2018) (*Invited*) Role of iron in dissolved organic carbon degradation in the arctic. Goldschmidt 2018, Boston, MA.
49. Ward, C.P., C.M. Reddy, R. M. Cory. (2018) Evaluating the magnitude of partial photo-oxidation of organic carbon in sunlit surface waters. American Chemical Society National Meeting. New Orleans, LA.
48. Cory, R.M., B. Taterka, R. Brinker. (2017) Bringing the Tundra to Your Classroom: Hands-on, NGSS-Aligned Lessons and Lab Activities for Teaching Climate Change, Focusing on Thawing Permafrost and the Earth's Carbon Cycle. AGU-NESTA Geophysical Information for Teachers (GIFT) Workshop. American Geophysical Union Fall National Meeting. New Orleans, LA.
47. Cory, R.M., A. Trusiak, C. P. Ward, G. W. Kling, M. M. Tfaily, L. Pasa-Tolic, V. Noël, J. R. Bargar. (2018) Interactions between iron and organic matter may influence the fate of permafrost carbon in the Arctic. American Geophysical Union Fall National Meeting. New Orleans, LA.

46. R.M. Cory, C.P. Ward, J. C. Bowen, A. Trusiak, L. A. Treibergs. (2017) *invited*. Watershed tea in arctic lakes: comparing carbon chemistry and cycling in "red zinger" vs. "chamomile" waters. American Chemical Society National Meeting. San Francisco, CA.
45. R.M. Cory, C.P. Ward, B.C. Crump, G.W. Kling. (2016) Photodegradation of dissolved organic carbon in arctic inland waters. Society of International Limnology (SIL). Torino, Italy.
44. G.W. Kling, Neilson, B. T., Cardenas, B., R.M. Cory (2016) Controls on dissolved organic matter photodegradation in surface waters: residence time and the role of light vs substrate limitation. Association for the Sciences of Limnology and Oceanography (ASLO) Summer Meeting. Santa Fe, NM.
43. R.M. Cory, C.P. Ward, B.C. Crump, G.W. Kling. (2016) *invited*. Photodegradation of dissolved organic carbon in arctic inland waters. Association for the Sciences of Limnology and Oceanography (ASLO) Summer Meeting. Santa Fe, NM.
42. *Ward, C.P., R.M. Cory. (2015) Relating the chemical composition of DOM draining permafrost soils to its photochemical degradation in arctic surface waters. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
41. Brinker, R., R.M. Cory. (2014). From the field to classrooms: Scientists and educators collaborating to develop K-12 lessons on arctic carbon cycling and climate change that align with Next Generation Science Standards, and informal outreach programs that bring authentic data to informal audiences. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
40. Li, A., A. Aubeneau, T. King, R.M. Cory, B.T. Neilson, G. W. Kling, D. Bolster, A. Packman. (2014) Stochastic modeling of carbon photo-mineralization along arctic rivers following permafrost thaw. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
39. Cory, R.M., S.E. Page*, G.W. Kling, M. Sander, K.H. Harrold, K. McNeill. (2014) *invited*. Shedding "dark" on the oxidation of dissolved organic matter by hydroxyl radical in arctic soils and surface waters. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
38. Cory, R.M., C.P. Ward*, B.C. Crump, G.W. Kling. (2014) *invited*. Sunlight controls water column processing of carbon in arctic freshwaters. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
37. *Ward, C.P., R.M. Cory. (2014) Linking chemical composition of dissolved organic matter from arctic soils to its complete and partial photooxidation in surface waters. American Society of Limnology & Oceanography (ASLO), Portland, OR.
36. Cory, R.M. (2014) The fate of carbon draining permafrost soils is controlled by photochemical reactions in addition to microbial degradation in arctic surface waters. THAW 2014 - Thermokarst Aquatic ecosystems Workshop: Freshwater ecosystems in changing permafrost landscapes. Quebec City, Canada.

35. Cory, R.M., S.E. Page*, G.W. Kling, M. Sander, K.H. Harrold, K. McNeill. (2013) *invited*. The role of iron and reactive oxygen in the degradation of dissolved organic matter draining permafrost soils. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
34. Cory, R.M. (2013) *invited*. Determining the interactions between photochemical and microbial oxidation of DOM. Finland Distinguished Professor Programme (FiDiPro) Workshop on Dissolved Organic Matter. Tvärminne Zoological Station, Finland.
33. Cory, R.M., S.E. Page*, G.W. Kling, M. Sander, K.H. Harrold, K. McNeill. (2013) *invited*. Going to the dark side: a new pathway for the oxidation of dissolved organic matter in arctic soil waters. Chapman Conference on AGU Chapman Conference on Soil-mediated Drivers of Coupled Biogeochemical and Hydrological Processes Across Scales, Biosphere 2, University of Arizona, Oracle, AZ.
32. Cory, R.M. (2013) *invited*. Dissolved organic matter degradation and chemical composition: implications for carbon cycling. Workshop on Belowground Carbon Cycling Processes at the Molecular Scale. Pacific Northwest National Laboratory, Richland, WA.
31. Merck, M.F., B.T. Neilson, R.M. Cory, G.W. Kling. (2011) Combining natural tracers to identify flow paths in arctic beaded streams. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
30. Cory, R.M., *R.A. Polera. (2011) Fluorescence as a monitoring tool for recycled water: a case study at UNC. Water and Health: Where Science Meets Policy. UNC Institute for the Environment and UNC Water Institute. Chapel Hill, NC.
29. Cory, R.M., G.W. Kling. (2010) *invited*, Dynamics of photochemical and microbial processing of newly exposed terrestrial DOM in arctic surface waters. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
28. Lutz, B., E.S. Bernhardt, B. Roberts, R.M. Cory, P. Mulholland. (2010) What can a stream stand to lose? A new method for investigating DOM biogeochemistry. American Society of Limnology & Oceanography (ASLO), Santa Fe, NM.
27. Cotner, J.B. Cory, R.M., M. Jacobson K. McNeill, B.P. Peterson, A.M. Amado. (2010) Fluorescent dissolved organic matter helps unravel the mysterious carbon cycle in Earth's largest lake International Association for Great Lakes Research meeting, Toronto, ON, Canada.
26. *Dang, G.T., R. M. Cory, H. W. Paerl. (2010) Spatial and temporal variation in fluorescent DOM in the Neuse River Estuary. American Society of Limnology & Oceanography (ASLO), Santa Fe, NM.
25. Cory, R.M., A. Amado, B. Peterson, K. McNeill, J.B. Cotner. (2009) Fluorescent dissolved organic matter reveals dynamic catchment interactions in Lake Superior. Poster Highlight Session, Gordon Research Conference on Catchment Science: Interactions of Hydrology, Biology & Geochemistry. Andover, NH.

24. Gilmore, A., R.M.Cory. (2009) Enhanced measurements of chromophoric dissolved organic matter (CDOM) for water quality analysis using a new simultaneous absorbance and fluorescence instrument. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
23. McNeill, K. R.M. Cory, M. Grandbois, J. Cotner. (2009) Natural organic matter as a source and sink of singlet oxygen. Abstracts of Papers, 238th ACS National Meeting, Washington, DC.
22. *Polera, R.A., R.M. Cory. (2009) Distinguishing between reclaimed and potable water with fluorescence spectroscopy. North Carolina American Water Works Association Annual Meeting. Raleigh, NC.
21. Cory, R.M. A. Amado, B. Peterson, K. McNeill, J.B. Cotner. (2008) *invited*, Photochemical and biochemical cycling of dissolved organic matter: clues from organic matter fluorescence. Chapman Conference on Organic Matter Fluorescence, University of Birmingham, Birmingham, UK.
20. Cory, R.M., H. Powers, N. McDowell, T. Rhan. (2008) Photodegradation of leaf litter in semi-arid environments. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
19. McNeill, K., R.M. Cory, A. Amado, J.B. Cotner. (2008) Reaction of singlet oxygen with natural organic matter. Gordon Research Conference: Environmental Sciences: Water. Holderness, NH.
18. Cory, R.M., J. B. Cotner, K. McNeill. (2008) Singlet oxygen uptake by aquatic fulvic acids leads to production of hydrogen peroxide and oxidized organic compounds. American Society of Limnology & Oceanography (ASLO), St. John's, Newfoundland, Canada.
17. Cotner, J.B., R.M. Cory, K. McNeill, A.M. Amado, B. Edlund. (2008) Reactive oxygen effects on dissolved organic matter and microbes. American Society of Limnology & Oceanography (ASLO) Ocean Sciences Meeting, Orlando, FL.
16. Miller, P.L., M. Diesler, C. M. Foreman, R. L. Fimmen, J.J. Guerard, R.M. Cory, Y.P. Chin, D.M. McKnight. (2008) Direct and indirect effects of UV radiation on bacterial abundance and community structure in Pony Lake, Antarctica. American Society of Limnology & Oceanography (ASLO) Ocean Sciences Meeting, Orlando, FL.
15. Cory, R.M., K. McNeill, J.B. Cotner. (2007) Reactions of singlet oxygen with the fulvic acid fraction of aquatic dissolved organic matter. American Chemical Society (ACS), Chicago, IL.
14. McKnight, D.M., R. M. Cory, R. Jaffe, N. Maie. (2007) Characterizing the quality of DOM with spectroscopic approaches to monitor response to climate and land-use change. Humic Science & Technology Conference X, Northeastern University, Boston, MA.
13. Cotner, J. B., A.M. Amado, R.M. Cory, B. Edlund, K. McNeill. (2007) Superior Tales: The effects of microbes and photochemical processes on DOM in the Earth's largest lake. American Society of Limnology & Oceanography (ASLO), Santa Fe, NM.

12. McKnight, D.M., M. Appel, M. Brooks, R.M. Cory. (2007) Photolytic effects on spectral properties and Cu-binding by stream fulvic acids. American Society of Limnology & Oceanography (ASLO), Santa Fe, NM.
11. Fimmen, R.L., R.M. Cory, Y.P. Chin, D.M. McKnight. (2006) Contrasting redox and chemical properties of a microbially and terrestrially derived fulvic acid. American Society of Limnology & Oceanography (ASLO), Victoria, BC, Canada.
10. Geurard, J.J., R.L. Fimmen, P.L. Miller, Y.P. Chin, R.M. Cory, D.M. McKnight, C. Foreman. (2006) Changes in chemical properties and bioavailability during photolysis of Pony Lake dissolved organic matter. American Society of Limnology & Oceanography (ASLO), Victoria, BC, Canada.
9. McKnight, D.M., R.M. Cory, P. Miller, Y.-P. Chin, C. Foreman. (2006) Chemical properties of a microbially-derived fulvic acid from a hypereutrophic coastal pond in Antarctica. Humic Science & Technology Conference IX, Northeastern University, Boston, MA.
8. Cory, R.M., A.M. Grannas, P.L. Miller, D.M. McKnight, Y.P. Chin. (2006) Photochemical reactivity & photosensitizing properties of fulvic acids in Arctic surface waters. Pacificchem Meeting, Honolulu, HI.
7. Cory, R.M., R.L. Fimmen, Y.P. Chin, D.M. McKnight. (2006) Effect of electrochemical reduction on fulvic acid fluorescence spectra. Gordon Research Conference: Environmental Sciences: Water. Plymouth, NH.
6. Cory, R.M., D.M. McKnight, Y. Chin, R. Fimmen, J. Priscu, C. Foreman, J. Mikucki. (2005) Understanding DOM redox reactivity and fluorescence: Lessons from saline lakes in Antarctica. American Society of Limnology & Oceanography (ASLO), Salt Lake City, UT.
5. Knauf, M., M. Williams, F. Lui, R.M. Cory, N. Caine. (2004) Microbial activity and nutrient concentrations from a North American rock glacier: An Antarctic analogue. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
4. Grannas, A.M. P.L. Miller, Y.P. Chin, R.M. Cory, D.M. McKnight. (2003) Selective degradation of persistent organic pollutants by Arctic dissolved organic matter. American Geophysical Union (AGU), Fall Meeting. San Francisco, CA.
3. Cory, R.M., D.M. McKnight, C. Stedmon. (2003) Evidence for microbially mediated ferric iron reduction in an alpine lake. American Geophysical Union (AGU) Fall Meeting. San Francisco, CA.
2. Cory, R.M., S.A. Green, J. Perlinger, K. Pregitzer. (2002) Dissolved organic matter composition in the forests of Olympic National Park, WA. American Society of Limnology & Oceanography (ASLO), Victoria, BC, Canada.

1. Cory, R.M., S.A. Green. (2001) Dissolved organic matter export and composition throughout the forests and streams of Olympic National Park, WA. Gordon Research Conference: Forested Catchments: Hydro/Geo/Bio Processes. Andover, NH.

INVITED TALKS and SEMINARS

- 2025 Toolik All Scientists Meeting
- 2024 Deford Lecture, invited seminar, Department of Geological Sciences | Jackson School of Geosciences | The University of Texas at Austin
- 2022 Department of Geology and Environmental Science, University of Pittsburgh
- 2021 Earth System Science, University of California, Irvine
- 2019 Department of Marine Science, University of Georgia
- 2019 Plenary talk at GRIL (Interuniversity Research Group in Limnology), Quebec, CA
- 2018 Keynote talk at Goldschmidt 2018, Boston, MA
- 2016 Plenary talk at Gordon Conference: Environmental Sciences: Water
American Society of Limnology & Oceanography summer meeting
- 2015 Earth and Environmental Sciences, University of Illinois at Chicago
Kellogg Biological Station, Michigan State University
Civil & Environmental Engineering & Earth Sciences, Notre Dame
- 2014 Chemistry & Geochemistry, Colorado School of Mines
Geological Sciences, Michigan State University
Chemistry, Eastern Michigan University
Civil & Environmental Engineering, University of Michigan
American Geophysical Union fall meeting
- 2013 Earth and Planetary Sciences, Northwestern University
Chemistry, Davidson College
American Geophysical Union fall meeting
- 2012 Institute for Biogeochemistry and Pollutant Dynamics, ETH, Zurich
Environmental Science and Forestry, Chemistry, SUNY
Chemistry, Michigan Technological University
FluoroFest Meeting, Horiba Scientific
- 2011 Environmental, Earth & Geospatial Sciences, North Carolina Central University
- 2010 Nicholas School of the Environment, Duke University
Invited speaker for "*Ice Counterpoint: Encounters in Antarctica and the Arctic Polar exploration*" University of North Carolina, Chapel Hill
- 2009 Environmental Sciences & Engineering, University of North Carolina, Chapel Hill

PROFESSIONAL SERVICE

Chair, User Executive Committee, Environmental Science Molecular Laboratory (EMSL), Pacific Northwest National Laboratory. 2020 - 2021.

Vice-Chair, User Executive Committee, Environmental Science Molecular Laboratory (EMSL), Pacific Northwest National Laboratory. 2019 - 2020.

Member, User Executive Committee, Environmental Science Molecular Laboratory (EMSL), Pacific Northwest National Laboratory. 2018 to 2019.

Co-author, United Nations Environmental Programme, Environmental Effects Assessment Panel. 2016 – 2018.

Proposal review panels

NSF Panelist, 2022

DOE Office of Biological and Environmental Research, Terrestrial Ecosystem Science proposal review panel, 2020

NSF Panelist, 2018

NSF Panelist (participated in two panels), EMSL Panelist, 2017

German Academic Exchange Service, Estonian, 2016

Research Council, Minnesota Environment and Natural Resources Trust Fund, North Carolina Sea Grant, 2016

EMSL/DOE Panelist, 2015

NASA/DOE Panelist, 2013

NSF Panelist (participated in 2 panels), 2011

Manuscript and proposal review

Science, PNAS, Nature Communications, Nature Geoscience, Nature Scientific Reports, Biogeochemistry, Environmental Science & Technology, JGR: Biogeosciences, EGU: Biogeosciences, Geophysical Research Letters, Global Biogeochemical Cycles, Limnology & Oceanography, Limnology & Oceanography: Methods, DOE, EMSL (Environmental Molecular Science Laboratory/DOE), NSF (ANS, DEB, EAR, OCE, EASPI), German Academic Exchange Service, North Carolina Sea Grant, Ohio Sea Grant, Swiss National Science Foundation, French National Agency of Research, Organic Geochemistry, Applied Microbial Ecology, Applied Geochemistry, Aquatic Sciences, Arctic & Alpine Research, Journal of Great Lakes Research, Journal of Physical Chemistry, Marine Chemistry, Marine Science Pollution Bulletin, Microbial Ecology, Aquatic Geochemistry, Water Research, Water Resources Research, Science of the Total Environment, Soil Science Society of America Journal, EPA, US-Israel Binational Agricultural Research & Development Fund, Water Resources Center, St. Paul MN, Chemosphere, European Journal of Soil Science, Geomicrobiology.

Professional affiliations

American Geophysical Union; American Society for Limnology and Oceanography

WORKSHOPS

LTER Science Council attendee. Madison, WI, 2018

Biogeochemical Cycling of Metals, Radionuclides, and Associated Colloids within Earth's Critical Zone. *Co-chair and session organizer*, Goldschmidt, Boston, MA. 2018.

THAW Thermokarst Aquatic Ecosystems Workshop: Freshwater ecosystems in changing permafrost landscapes. *Invitee*. Quebec, Canada, 2014

Dissolved Organic Matter Symposium for the Finland Distinguished Professor Programme, Tvärminne Zoological Station. *Invitee*. Hanko, Finland, 2013.

Participant, Belowground Carbon Cycling Processes at the Molecular Scale. *Invitee*. Pacific Northwest National Laboratory, Richland, WA, 2013

New developments in fluorescence spectroscopy to characterize dissolved organic matter. *Organizer*. Geological Society of America Meeting, Charlotte, NC. 2012

Frontiers in analytical chemistry as applied to natural organic matter. *Organizer*, ACS National Meeting, San Francisco, CA. 2010.

TEACHING

University of Michigan (2013 – present)

Research Ethics, Winter 2023 – present

Introduction to Aquatic Geochemistry, Fall 2014 – present

Ecosystem Science, Summer 2022 – present

Earth and Environmental Chemistry, Fall 2020 – Winter 2022

Introduction to Environmental Science, Winter 2019

Introduction to Environmental Geology, Winter 2014 – 2017

University of North Carolina Chapel Hill (2009 – 2013)

Environmental Physical Organic Chemistry, Winter 2011 – 2013

Chemical Equilibria in Natural Waters, Fall 2011 – 2012

Chemistry of Natural Organic Matter, Fall 2010

Post-doctoral advisees

Dr. Collin Ward (2015 – 2016) Associate Scientist, Woods Hole Oceanographic Institution

Dr. Sarah Page (2013 – 2014) Drinking water treatment specialist, State of Utah

Ph.D. students

Emma Johnson (2023 – present)

Emma Reib (2019 – 2024) Geologist, MI Department of Environment, Great Lakes, and Energy

Dhurba Pandey (2018 – 2022; withdrew from program)

Jennifer Bowen (2021) Assistant Professor, Georgia Institute of Technology

Adrianna Trusiak (2020) Assistant Director for Proposal Management, Office of the Vice President for Research, University of Michigan

Collin P. Ward (2015) Associate Scientist, Woods Hole Oceanographic Institution

M.S. students

Nathan Laframboise (2022-2024) AECOM

Aislinn Deely (2018, University of Michigan) MI Department of Environmental Quality

Carrie Doyle (2013, University of North Carolina, Chapel Hill)

Katherine H. Harrold (2013, University of North Carolina, Chapel Hill) OWASA Drinking Water Quality Lab Manager

George T. Dang (2011, University of North Carolina, Chapel Hill)

Angela Wang (MSPH, 2011, University of North Carolina, Chapel Hill)

Rory A. Polera (MSEE, 2010, University of North Carolina, Chapel Hill), Tagup

Graduate student committee member

Laura Rietz (PhD 2025 University of Michigan)

Alice Zhou (PhD 2024 University of Michigan)

Yifan Guan (PhD 2023 University of Michigan)

Madelyn Cook (PhD 2023 University of Michigan)
Elizabeth Crowther (PhD 2023 University of Michigan)
Derek Smith (PhD 2021 University of Michigan)
Aaron Kurz (PhD 2021 University of Michigan)
Katy Rico (PhD 2019 University of Michigan)
Laura Motta (PhD 2019 University of Michigan)
Will Bender (PhD 2018 University of Michigan)
Nicolas Walpen (PhD 2018 ETH Zurich)
Ben Gebarski (PhD 2018 University of Michigan)
Spencer Washburn (PhD 2018, University of Michigan)
Zhong Qiao (PhD 2018, University of Michigan)
Sara Nedrich (PhD 2017, University of Michigan)
Panitan Jutaporn (PhD 2017, University of North Carolina, Chapel Hill)
Sarah Aarons (2016 University of Michigan)
Meghan Taylor (PhD 2015, University of Michigan)
Sandra Taylor (PhD 2015, University of Michigan)
Nicole Hagan (PhD 2014, University of North Carolina, Chapel Hill)
Anne Gaylean (PhD 2015, University of North Carolina, Chapel Hill)
Alex Gorzalski (MSEE 2013, University of North Carolina, Chapel Hill)
Britt Peterson (PhD 2012, ETH Zurich)
Abhinav Komandur (MSPH 2012, University of North Carolina, Chapel Hill)
Alyson Malone (MSPH 2012, University of North Carolina, Chapel Hill)
Bonnie Lyons (PhD 2012, University of North Carolina, Chapel Hill)
Kristen Bretz (MS 2012, University of North Carolina, Chapel Hill)
Gabe McGowan (MS 2012, University of North Carolina, Chapel Hill)
Riley Flowers (PhD 2012, University of North Carolina, Chapel Hill)
Ryan Gustafson (MSEE 2011, University of North Carolina, Chapel Hill)
Kevin Myers (MSPH 2011, University of North Carolina, Chapel Hill)
Jakob Rowny (MS 2011, University of North Carolina, Chapel Hill)
Ryan Kingsbury (MSEE 2010, University of North Carolina, Chapel Hill)

Undergraduate student advisees

Connor Casey 2024 - 2025
Nya Mays 2024 - 2025
Kit Bellovin 2024 - 2025
Ella Deegan 2024 - 2025
Makayla Ward 2023
Teige O'Brien 2022
Cody Quiroz 2022-2023
Payton Aper 2021-2022
Nathan Laframboise 2021
Caleb Jelsma-Cale 2021
Liam Pendleton 2020
Kate Yuhas 2013-2016

Noah Attal 2014 – 2015
 Antonia Deller 2014
 Oliver Harfield 2013 – 2014
 Erin Eberhard 2014 – 2015
 Grace Hilbert 2014 – 2015
 Brittany Papworth 2009 – 2012
 Yvonne Nguyen 2012
 Kevin Chu 2011– 2012
 Amanda Lucier 2011
 Lauren Visser 2010
 Ashley Mui 2010
 Jaleesa Powell 2010 – 2011

TEACHING WORKSHOPS and LECTURES

2020	Attendee, Inclusive Teaching in Remote Settings
2015	Attendee, LectureTools help session
2015	Attendee, “Rule the Room” lecture by Jason Tetak
2014	Attendee, “The Craft of the Lecture” by LS&A
2014	Lecturer, “Ethics in Research” Undergraduate Research Opportunities Program (UROP) in LS&A
2013	Attendee, New Faculty Teaching Academy, LS&A

SERVICE (University of Michigan)

Department

2023	Member, PitE natural science and water curriculum committees
2022	Member, PitE lecturer review committee
2021 –	Associate Chair for Curriculum and Undergraduate Studies
2021 –	Chair, EES curriculum committee
2019 – 2021	Mentor, Presidential Postdoctoral Fellow (PPFP)
2020 – 2022	Member, PiTE executive committee
2020	Member, promotion committee
2018 – 2019	Member, EES executive committee
2018 – present	Undergraduate adviser
2018	Chair, promotion committee
2017	Member, faculty search committee
2015 – 2018	Chair, Smith Lecture (seminar) committee
2015	Member, PiTE faculty search committee
2015	Member, PiTE science curriculum committee
2013 – 2016	Member, graduate admissions committee

University

2021	Member, carbon neutrality in research and education working group
2021	Member, promotion committee in SEAS
2020	Member, PPFP mentoring committee in Civil & Environmental Engineering
2017 -2019	Faculty advisor, Michigan Earth Science Women’s Network

SELECTED SCIENTIFIC OUTREACH, PRESS COVERAGE

- 2013 to 2020 Participated in NSF's PolarTREC Teacher award to bring a K-12 teacher to conduct field work in the Alaskan Arctic and develop K-12 through undergraduate curriculum.
- 2013 – 2014 Radio broadcast interviews (*CBC*, *Ecoshock Radio*), and 48+ articles in magazines and newspapers (*Science NOW*, *Scientific American*, *Climate Central*, *Climate Wire*, *New Scientist*, *Latinos Post*, *Neue Zürcher Zeitung*).
- 2011 – 2012 Climate Leadership and Energy Awareness Program for high school students, Environmental Resource Program, University of North Carolina, Chapel Hill
- 2011 NC Climate Fellows Program, NASA's Innovation in Climate Education Program for K-12 Teacher Development in Climate Change
- 2011 Neuse and Tar-Pamlico River Research Water Quality Institute, K-12 Teacher Development, University of North Carolina, Chapel Hill

EXPERT CONSULTATION

- 2012 Provided expert consultation to Raleigh-based FBSciences on analytical detection of natural plant growth modifiers.
- 2010 Provided expert consultation to Hazen and Sawyer, P.C. on applications of fluorescence to monitor drinking water quality.