

Erin E. Black (she/her)

Assistant Professor

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APPOINTMENTS

- 2021 – Assistant Professor: Department of Earth and Environmental Sciences, University of Rochester (start date July 2021)
- 2021 – Adjunct Scholar: Faculty of Graduate Studies, Dalhousie University
- 2021 – 2023 Adjunct Associate Research Scientist: Lamont-Doherty Earth Observatory (LDEO)
- 2020 – 2021 Research Assistant: Department of Earth and Environmental Sciences, University of Rochester
- 2020 – 2021 Postdoctoral Research Scientist: Department of Geochemistry, LDEO
- 2018 – 2020 Ocean Frontier Institute Postdoctoral Fellow: Department of Oceanography, Dalhousie University and LDEO
- 2012 – 2017 Ph.D. Candidate and Research Assistant: Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution (WHOI)
- 2006 – 2008 Research and Teaching Assistant: Department of Earth Sciences, Dartmouth College

EDUCATION

- 2018 Ph.D. Chemical Oceanography: Massachusetts Institute of Technology (MIT) and Woods Hole Oceanographic Institution (WHOI) Joint Program
- 2008 M.S. Earth Sciences: Dartmouth College
- 2006 B.A. Geology, Summa Cum Laude: Skidmore College

FELLOWSHIPS, HONORS, AND GRANTS

- 2020 – 2021 Lamont-Doherty Earth Observatory Climate Center Grant (\$10K)
- 2018 – 2019 Ocean Frontier Institute Seed Fund Grant (\$20K)
- 2018 Dissertations Symposium in Chemical Oceanography Selectee (accepted)
- 2018 – 2020 Ocean Frontier Institute Postdoctoral Fellowship (\$150K over 2 years; accepted)
- 2018 John A. Knauss Marine Policy Fellowship Finalist (declined)
- 2013 – 2016 NASA Earth and Space Science Fellowship (\$30K/year; accepted)
- 2006 Dartmouth College President's Scholarship (\$2K)

SUBMITTED MANUSCRIPTS FOR PEER REVIEW

1. **Black, E.E.**, Algar, C.K., Armstrong, M., and Kienast, S.S., Advances in constraining coastal carbon export: A study of Bedford Basin, Nova Scotia, *Submitted July 2022 (2nd review) to Limnology and Oceanography*.
2. Buckley, N.R., **Black, E.E.**, Conway, T.M., Fitzsimmons, J.N., Kenyon, J., Lanning, N.T., Sieber, M., and Cutter, G.A., Role of hydrogen sulfide in the removal of cadmium and zinc in the oxic to suboxic water column of the Pacific Ocean, *In rewrite for submission to Nature August 2022*.
3. Hawco, N.J., Yang, S.-C., Pinedo-Gonzalez, P., **Black, E.E.**, Kenyon, J., Ferron, S., Bian, X., and John, S.G., Recycling of dissolved iron in the North Pacific Subtropical Gyre, *Accepted August 2022 Limnology and Oceanography*.
4. Kemnitz, N., Hammond, D., Henderson, P. Le Roy, E., Charette, M., Moore, W., Anderson, R.F., Fleisher, M., Leal, A., **Black, E.E.**, Hayes, C., Adkins, J., Berelson, W., Actinium and radium fluxes from the seabed in the northeast Pacific Basin, *Submitted to Marine Chemistry July 2022*

PEER REVIEWED PUBLICATIONS

12. **Black, E.E.**, Kienast, S.S., Lemaitre, N., Lam, P.J., Anderson, R.F., Planquette, H., Planchon, F., and Buesseler, K.O., 2020, Ironing out Fe residence time in the dynamic upper ocean, *Global Biogeochemical Cycles*, 34: 9, e2020GB006592, doi: 10.1029/2020GB006592
11. Tesán Onrubia, J.A., Petrova, M.V., Puigcorbé, V., **Black, E.E.**, Valk, O., Dufour, A., Hamelin, B., Buesseler, K.O., Masqué, P., Le Moigne, F.A.C., Sonke, J.E., Rutgers van der Loeff, M., and Heimbürger-Boavida, L.-E., 2020, Mercury export flux in the Arctic Ocean estimated from ^{234}Th : ^{238}U disequilibrium, *ACS Earth and Space Chemistry*, 4: 795-801, doi: 10.1021/acsearthspacechem.0c00055.
10. Buesseler, K.O., Boyd, P.W., **Black, E.E.**, and Siegel, D.A., 2020, Metrics that matter for assessing the ocean biological carbon pump, *Proceedings of the National Academy of Sciences*, 117(18): 9679-9687, doi: 10.1073/pnas.1918114117.
9. **Black, E.E.**, Lam, P.J., Lee, J.-M., and Buesseler, K.O., 2019, Insights from the ^{238}U – ^{234}Th Method into the Coupling of Biological Export and the Cycling of Cadmium, Cobalt, and Manganese in the Southeast Pacific Ocean, *Global Biogeochemical Cycles*, 33: 15-36, doi:10.1029/2018GB005985.
8. Pavia, F., Anderson, R.F., **Black, E.E.**, Kipp, L.E., Vivancos, S., Fleisher, M.Q., Charette, M.A., Sanial, V., Moore, W.S., Hult, M., Lu, Y., Cheng, H., Zhang, P., and Edwards, L.R., 2019, Timescales of hydrothermal scavenging in the South Pacific Ocean from ^{234}Th , ^{230}Th , and ^{228}Th , *Earth and Planetary Science Letters*, 506: 146–156, doi:10.1016/j.epsl.2018.10.038.
7. Hayes, C.T., **Black, E.E.**, Anderson, R.F., Baskaran, M., Buesseler, K.O., Charette, M.A., Cheng, H., Cochran, J.K., Edwards, L. R., Fitzgerald, P., Lam, P.J., Lu, Y., Morris, S.O., Ohnemus, D.O., Pavia, F.J., Stewart, G., and Tang, Y., 2018, Flux of particulate elements in the North Atlantic Ocean constrained by multiple radionuclides, *Global Biogeochemical Cycles*, 32: 1738-1758, doi:10.1029/2018GB005994.
6. Schlitzer et. al. (>300 coauthors including **E.E. Black**), 2018, The GEOTRACES Intermediate Data Product 2017, *Chemical Geology*, 493: 210–223, doi:10.1016/j.chemgeo.2018.05.040.
5. Rutgers van der Loeff, M., Kipp, L., Charette, M., **Black, E.**, Stimac, I., Charkin, A., Bauch, D., Valk, O., Karcher, M., Krumpfen, T., Casacuberta, N., Smethie, W., and Rember, R., 2018, Radium isotopes across the Arctic Ocean show time scales of water mass ventilation and increasing shelf inputs, *Journal of Geophysical Research: Oceans*, 123: 4853-4873, doi:10.1029/2018JC013888.

4. **Black, E.E.**, Buesseler, K.O, Pike, S.M., and Lam, P.J., 2018, ^{234}Th as a tracer of particulate export and remineralization in the Southeastern Tropical Pacific, *Marine Chemistry*, 201: 35–50, doi: 10.1016/j.marchem.2017.06.009.
3. Buesseler, K.O, German, C.R., Honda, M.C., Otosaka, S., **Black, E.E.**, Kawakami, H., Manganini, S.J., and Pike, S.M., 2015, Tracking the Fate of Particle Associated Fukushima Daiichi Cesium in the Ocean off Japan, *Environmental Science and Technology*, 49(16): 9807–9816, doi:10.1021/acs.est.5b02635.
2. **Black, E.E.** and Buesseler, K.O., 2014, Spatial Variability and the Fate of Cesium in Coastal Sediments near Fukushima, Japan, *Biogeosciences*, 11: 5123–5137, doi:10.5194/bg-11-5123-2014.
1. **Black, E.**, Renshaw, C.E., Magilligan, F.J., Kaste, J., Dade, W.B. and Landis, J., 2010, Determining Lateral Migration Rates in Meandering Rivers Using Fallout Radionuclides, *Geomorphology*, 123(3-4): 364–369, doi:10.1016/j.geomorph.2010.08.004.

NON-REFEREED PUBLICATIONS

3. **Black, E.E.**, 2018, An investigation of basin-scale controls on upper ocean export and remineralization, Doctoral Thesis, MIT–WHOI Joint Program, Woods Hole, MA.
2. **Black, E.E.**, 2008, Dating fluvial floodplains and quantifying channel migration rates using short-lived radionuclides, Master’s Thesis, Dartmouth College, Hanover, NH.
1. **Black, E.E.**, 2006, ‘Turbid’ waters of the Kayaderosseras: human caused or glacially influenced?, Undergraduate Honors Thesis, Skidmore College, Saratoga Springs, NY.

ACADEMIC TALKS AND SEMINARS

28. Redmond, N.*, Hayes, C.T., Davis, J, and **Black, E.E.**, A Friend to Help Show Little Air Rocks in Big Water, Talk to be presented Dec 12-16 at AGU, Chicago, USA.
27. Redmond, N.*, Hayes, C.T., Anderson, R.F., Leal, A., **Black, E.E.**, Fleisher, M.Q., Edwards, R.L., Li, X., and Lam, P.J., 2022, Exploring the Relative Roles of Biogenic and Hydrothermal Particles as Drivers of Metal Scavenging in the Equatorial Pacific, Talk to be presented Dec 12-16 at AGU, Chicago, USA.
26. Leal, A., Anderson, R.F., Fleisher, M.Q., **Black, E.E.**, Hayes, C.T., Redmond, N., Schroedl, P., Li, X., and Edwards, R.L., 2022, Inconsistencies in Thorium-Derived Dust Fluxes in the Pacific Ocean, Talk to be presented Dec 12-16 at AGU, Chicago, USA.
25. **Black, E.E.**, Hayes, C.T.*, Redmond, N.R., Anderson, R.F., Fleisher, M.Q., Edwards, R.L., Li, X., and Leal, A.L., 2022, Thorium-based Estimates of Atmospheric Dust-Derived Iron Delivery to High-Nitrate Low-Chlorophyll Regions in the Pacific Ocean, Talk to be presented Dec 12-16 at AGU, Chicago, USA.
24. Hayes, C.T.*, Redmond, N.R., Leal, A.L., Anderson, R.F., **Black, E.E.**, Fleisher, M.Q., Edwards, R.L., Li, X., Schroedl, P., and Lam, P.J., 2022, The Cycling of ^{231}Pa in the Pacific Ocean and Implications for its Use as a Paleoceanographic Proxy, Talk to be presented Dec 12-16 at AGU, Chicago, USA.
23. Kemnitz, N.*, Hammond, D., Hautala, S., Charette, M., Moore, W., Henderson, P., Le Roy, E., Anderson, R.F., Fleisher, M.Q., and **Black, E.E.**, 2022, ^{227}Ac distribution along the GEOTRACES Meridional Transect as an indicator of solute transport, Talk presented Feb 27-Mar 4 at Ocean Sciences, virtual meeting.
22. Hayes, C.K.*, Fleisher, M.Q., Anderson, R.F., **Black, E.E.**, Carracino, N., Edwards, R.L., Lam, P.J., Li, X., Redmond, N.A., Rojas, S., and Schroedl, P., 2022, Size-fractionated particulate organic carbon

fluxes throughout the water column of the Pacific basin (GEOTRACES section GP15), Talk presented Feb 27-Mar 4 at Ocean Sciences, virtual meeting.

21. Hawco, N.J.*, Yang, S.-C., Pinedo-Gonzalez, P., **Black, E.E.**, Kenyon, J., Ferron, S., and John, S.G., 2022, Quantifying Ecosystem Iron Recycling in the North Pacific Subtropical Gyre, Talk presented Feb 27-Mar 4 at Ocean Sciences, virtual meeting.
20. Redmond, N.* , Hayes, C.T., Anderson, R.F., **Black, E.E.**, Fleisher, M.Q., Edwards, R.L., Li, X., and Schroedl, P., 2021, Quantifying Meridional Transport of Scavenged Radionuclides over Pacific Biogeochemical Provinces, Talk presented 13-17 December at *AGU*, New Orleans, LA.
19. **Black, E.E.***, Anderson, R.F., Edwards, R.L., Hayes, C.T., Li, X., Fleisher, M.Q., Pavia, F.J., Redmond, N., and Schroedl, P., 2021, Thorium-derived dust fluxes in the Pacific: examining seawater, particle and sediment-based estimates. Session 13aO2. Talk presented 7 Jul at *Goldschmidt*, Lyon, France.
18. **Black, E.E.***, 2020, Constraining the Arctic biological carbon pump. Invited talk presented 31 Jan at Dartmouth College, NH.
17. **Black, E.E.***, 2019, Constraining the Arctic biological carbon pump. Geochemistry Seminar Series talk presented 16 Oct at Lamont Doherty Earth Observatory, Palisades, NY.
16. **Black, E.E.***, 2019, A changing Arctic: insights from radioisotopes. Invited talk presented 29 Mar at University of Rochester, Rochester, NY.
15. **Black, E.E.***, 2019, New estimates of iron residence time in the surface ocean: Implications for the marine carbon cycle. Invited talk presented 28 Mar at University of Rochester, Rochester, NY.
14. **Black, E.E.***, 2019, New insights into the biogeochemical cycling of carbon and iron from radioisotopes. Invited talk presented 22 Mar at Bedford Institute of Oceanography, Dartmouth, NS.
13. **Black, E.E.***, Kienast, S.S., Lam, P.J., and Buesseler, K.O., 2019, Upper ocean iron residence times across a wide range of ocean regimes. Session SS051, Abstract ID 12012. Talk presented 23 Feb – 2 Mar at *Aquatic Sciences*, San Juan, PR.
12. **Black, E.E.***, 2018, An investigation of basin-scale controls on upper ocean export and remineralization. Invited talk presented 21–25 Oct at *Dissertations Symposium in Chemical Oceanography*, Kailua-Kona, HI.
11. **Black, E.E.***, Charette, M.A., Lam, P.J., Anderson, R.F., Kipp, L.E., Xiang, Y., Vivancos, S.M., and Buesseler, K.O., 2018, Thorium isotopes as tracers of the biological carbon pump in the Arctic. Session 07L, Abstract ID 3743. Talk presented 1–17 Aug at *Goldschmidt*, Boston, MA.
10. **Black, E.E.***, 2018, Insights into upper ocean fluxes and residence times of elements from radioisotope methods. Ocean Sciences Seminar Series talk presented 10 Apr at Dalhousie University, Halifax, NS.
9. **Black, E.E.***, Lam, P.J., Lee, J.-M., and Buesseler, K.O., 2018, Particulate export and upper ocean residence times of trace metals in the southeastern tropical Pacific. Abstract ID CT21A–02. Talk presented 12–16 Feb at *Ocean Sciences*, Portland, OR.
8. Buesseler, K.* , and **Black, E.E.**, 2018, Quantifying particle flux attenuation using thorium-234 through the upper twilight zone by the gatekeepers of export, Abstract ID ME43A–07. Talk presented 12–16 Feb at *Ocean Sciences*, Portland, OR.
7. Hayes, C.T.* , **Black, E.E.**, Pavia, F.J., Anderson, R.F., Baskaran, M.M., Buesseler, K., Charette, M.A., Fitzgerald, P., and Cochran, J.K., 2018, Sinking flux profiles of carbon and trace elements in the North Atlantic Ocean constrained by multiple radionuclide systems, Abstract ID CT13A–07. Talk presented 12–16 Feb at *Ocean Sciences*, Portland, OR.

6. **Black, E.E.***, Buesseler, K.O., Pike, S.M., Lam, P.J., and Charette, M.A., 2017, Thorium isotopes as tracers of particulate export and remineralization in the Arctic Ocean. Abstract ID 28685, Session 004. Talk presented 26 Feb–3 Mar at *Aquatic Sciences*, Honolulu, HI.
5. **Black, E.E.***, 2016, ^{234}Th as a tracer of particulate export and remineralization. Department seminar presented 18 Oct at WHOI, Woods Hole, MA.
4. Buesseler, K.O.* and **Black, E.E.**, 2016, Observational strategies to quantify export and remineralization, including transfer of carbon cycle applications to trace elements and their isotopes. Invited talk presented 1–4 Aug at Biogeochemical cycling of trace elements within the ocean: *GTC-OCB Synthesis Meeting*, Lamont-Doherty Earth Observatory, Palisades, NY.
3. Honda, M.C.*, Buesseler, K., German, C.R., Ootosaka, S., **Black, E.E.**, Kawakami, H., Manganini, S.J., and Pike, S., 2016, Resuspension and lateral transport of radiologically-contaminated seafloor sediment of Fukushima Daiichi Nuclear Power Plant, Abstract ID 1150, Session 15b. Talk presented 26 Jun–1 Jul at *Goldschmidt*, Yokohama, Japan.
2. Buesseler, K. *, **Black, E.**, Pike, S., Kenna, T., and Masque, P., 2014, Plutonium isotopes in the ocean off Japan after Fukushima, Abstract ID 300 O–019. Talk presented 7–12 Sep at *International Conference on Radioecology and Environmental Radioactivity*, Barcelona, Spain.
1. Ennis-McMillan, M.*, Kellogg, K., Stafford, A., and **Black, E.**, 2008, Blessed with Water: Drinking Water Politics in Upstate New York. Talk presented 19–23 Nov at *American Anthropological Association Annual Conference*, San Francisco, CA.

*presenting author

POSTER PRESENTATIONS

15. Leal, A.*, Anderson, R.F., Fleisher, M.Q., **Black, E.E.**, Hayes, C.T., Redmond, N., Edwards, R.L., and Li, X., Comparison of water column and core top thorium-232 fluxes in the Pacific basin (GEOTRACES section GP15), poster to be presented Feb 27-Mar 4 at Ocean Sciences, virtual meeting.
14. Healey, M. *, Kienast, S.S., **Black, E.E.**, Algar, C.K., Armstrong, M., deGelleke, L., 2022, Improving estimates of the biological carbon pump in coastal regions: Quantifying particulate organic carbon fluxes using ^{234}Th in the Bedford Basin, Nova Scotia, poster to be presented Feb 27-Mar 4 at Ocean Sciences, virtual meeting.
13. Fleisher, M.Q., Anderson, R.F., Black, E.E., Carracino, N., Edwards, R.L., Hayes, C.T.*, Lam, P.J., Li, X., Redmond, N., Rojas, S., and Schroedl, P., 2021, Particle dynamics in the central Pacific Ocean: Insights from Th and Pa isotopes, Session 13aO2. Talk presented 7 Jul at *Goldschmidt*, Lyon, France.
12. Black, E.E. *, Charette, M.A., Lam, P.J., Anderson, R.F., Kipp, L.E., Xiang, Y., Vivancos, S.M., Kienast, S.S., and Buesseler, K.O., 2020, Carbon export and particulate trace metal cycling across the Western Arctic Ocean. Session CT14C-0870, Abstract ID 650959. Presented 16 – 21 Feb at *Ocean Sciences*, San Diego, CA.
11. Kienast, S.S., Black, E.E., and Algar, C.K., 2020, Towards a Better Understanding of Coastal Carbon Cycling and Sequestration: Quantifying Sinking Carbon in the Bedford Basin and Beyond. Session OB44F-0752, Abstract ID 646996. Talk presented 16 – 21 Feb at *Ocean Sciences*, San Diego, CA.

10. **Black, E.E.*** Anderson, R.F., Buesseler, K.O., Charette, M.A., Lam, P.J., Kipp, L.E., Vivancos, S.M., Xiang, Y., and Kienast, S.S., 2019, Tracking the Biological Carbon Pump in the Arctic Ocean. Poster presented 11 Sep at *Lamont Postdoctoral Symposium*, Lamont Doherty Earth Observatory, Palisades, NY.
9. **Black, E.E.***, Anderson, R.F., Buesseler, K.O., Charette, M.A., Lam, P.J., Kipp, L.E., Vivancos, S.M., Xiang, Y., and Kienast, S.S., 2018, Thorium Isotopes as Tracers of Particulate Export and Remineralization in the Arctic Ocean. Poster presented 19–21 Sep at *Research Alumni Conference: 'Frontiers in Ocean Sustainability: Co-Designing Research and Solutions'*, Halifax, NS.
8. **Black, E.**, Buesseler, K.*, Pike, S., Lam, P., and Charette, M., 2016, Thorium-234 distribution along the Eastern Pacific GEOTRACES transect and implications for export and remineralization of carbon and trace metals, Poster No. 218, Session 12d. Poster presented 26 Jun–1 Jul at *Goldschmidt*, Yokohama, Japan.
7. **Black, E.E.***, Buesseler, K.O., Pike, S.M., Lam, P.J., and Charette, M.A., 2016, ²³⁴Th distribution along the Eastern Pacific GEOTRACES transect and implications for export and remineralization fluxes of carbon and TEIs, Abstract ID CT24A–0140. Poster presented 21–26 Feb at *Ocean Sciences*, New Orleans, LA.
6. **Black, E.***, Buesseler, K., Pike, S., Nishikawa, J., and Kanda, J., 2014, Spatial variability and the fate of cesium in coastal sediments near Fukushima, Japan, Poster No. 595, Session 114. Poster presented 23–28 Feb at *Ocean Sciences*, Honolulu, HI.
5. Renshaw, C.E.*, **Black, E.E.**, Dade, W.B., Magilligan, F.J., and Landis, J.D., 2009, Quantifying lateral migration rates using fallout radionuclides, Poster No. H41B–0894. Poster presented 14–18 Dec at *AGU Fall Meeting*, San Francisco, CA.
4. **Black, E.E.***, Renshaw, C., Magilligan, F., Kaste, J., and Dade, W.B., 2008, Determining channel migration rates using short-lived radioisotopes, Abstracts with Programs ID vol. 40 no. 2 p. 66, Session 30. Poster presented 27–29 Mar at *Geological Society of America Northeastern Section Meeting*, Buffalo, NY.
3. **Black, E.E.***, Renshaw, C.E., Kaste, J.M., Magilligan, F.J., and Dade, W.B., 2007, Dating fluvial floodplains and quantifying channel migration rates using short-lived radionuclides, Abstract ID H51E–0815. Poster Presented 10–14 Dec at *AGU*, San Francisco, CA.
2. **Black, E.E.*** and Nichols, K.K., 2006, 'Turbid' waters of the Kayaderosseras: human caused or glacially influenced?, Abstracts with Programs ID vol. 38 no 2. P. 12, Session 7. Poster presented 20–22 Mar at *Geological Society of America Northeastern Section Meeting*, Camp Hill/Harrisburg, PA.
1. Cleveland, M.*, **Black, E.**, D'Esopo, C., Donovan, D., and Nichols, K., 2006, In depth knowledge (based on 378 well logs) of Kayaderosseras Creek surficial sediments, Abstracts with Programs ID vol. 38 no 2. P. 12, Session 7. Poster presented 20–22 Mar at *Geological Society of America Northeastern Section Meeting*, Camp Hill/Harrisburg, PA.

*presenting author

CRUISE PARTICIPATION

2021	EN665 Carbon and Carbonate Alkalinity Cruise, Gulf of Maine, RV Endeavor (Apr)
2019	NSF-UNOLS Chief Scientist Training Cruise: Co-Team Leader, RV Kilo Moana (Jun)
2019	Bedford Basin Coring and Water Column Sampling, East Com (daytrips, Feb–May)
2015	U.S. GEOTRACES Arctic Ocean, USCGC Healy (Aug–Oct)

- 2014 Fukushima Japan Coastal Monitoring, Shinsei Maru (Oct)
- 2013 U.S. GEOTRACES Eastern Pacific, RV Thomas G Thompson (Oct–Dec)
- 2012 BATS/BVAL Bermuda Atlantic Time-series Study, RV Atlantic Explorer (Oct)
- 2012 SEA Jake Peirson Summer Cruise, SSV Corwith Cramer (Jun–Jul)

FIELD EXPERIENCE

- 2007 – 2008 Floodplain sediment coring and topographic measurements: Winooski River, VT; Connecticut River, VT; and Genesee River, NY
 - 2008 Glacial sediment coring and snow/ice collection: Banff National Park, Canada
 - 2007 Collecting gravimetric measurements: Death Valley, CA/NV
 - 2007 Structural mapping and sample collection of serpentines: Sierra Nevada Mountains, CA
 - 2005 – 2006 Water sampling (turbidity, flow rate, etc.): Kayaderosseras Creek and tributaries, NY
 - 2005 Mapping of surficial deposits and sample collection: Saratoga county, NY
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UR TEACHING EXPERIENCE

- 2022 Instructor for undergraduate EESC105 Introduction to Climate Change: Taught lecture and lab course, 40 students
- 2022 Instructor for undergraduate EESC216(W) and graduate EESC416 level Environmental Geochemistry: Designed lecture and lab course with a writing requirement option, 17 students

ADDITIONAL TEACHING EXPERIENCE AND CERTIFICATES

- 2018 – 2022 Dalhousie University Faculty Certification Program in Teaching and Learning: core course, studio courses, peer observations, teaching dossier, and reflections (<https://www.dal.ca/dept/clt/programs/FCTL.html>)
- 2021 Workshop on Inclusive and Culturally Competent Teaching in the Earth Sciences (LDEO)
- 2019 Guest Instructor in Geological Oceanography OCEA4110: Designed and taught two lecture and activity periods (40- and 80-minutes), Dalhousie University, NS (~15 students)
- 2018 Guest Instructor in Chemical Oceanography OCEA4130: Designed and taught three, 80-minute lecture and activity periods, Dalhousie University, NS (~20 students)
- 2018 Workshop Instructor: Designed and taught 45-min workshop on climate change communication for the Dalhousie Oceanography Student Association science retreat ‘Emerging Tools, Techniques, and Technology: Tackling Climate Change with a Multidisciplinary Approach’, South Alton, NS (~10 attendees)
- 2018 Guest Instructor in Global Biogeochemical Cycles GE320: Lectured and led discussion on oceanographic tracers and radiochemistry, Skidmore College, NY (~20 students)
- 2018 Guest Instructor in Climate Change: Designed and taught a 1-hr class on oceanography and science in today’s society for 9th–12th graders, Dublin School, NH (~15 students)
- 2016 MIT Kaufman Certification: 9-week course for the development of teaching skills

- 2016 Guest Instructor in Chemistry: Co-designed and taught activity series on applications of isotopes for 8th graders, Lawrence Middle School, MA (~100 students)
- 2008 – 2009 Adult Education Instructor in English: Designed and taught three, 1-hour night school classes per week, Priego de Cordoba, Spain (15–20 students per class, 1 academic year)
- 2008 – 2009 K–6 Teacher in Bilingual Science and Physical Education: Co-taught 2–4 classes daily at Cristóbal Luque Onieva, Córdoba, Spain (10–20 students per class, 1 academic year)
- 2008 Teaching Assistant: Courses included Earth Resources (Winter), Hydrogeology (Spring), Earth Materials and Mineralogy (Summer), Dartmouth College, NH
- 2007 Lab Lecturer and Teaching Assistant in Igneous/Metamorphic Petrology: Taught weekly 3-hour laboratory class and assisted primary lecturer with classroom and field-based teaching duties, Dartmouth College, NH (Spring Semester)
- 2007 Teaching Assistant: Courses included Natural Disasters (Winter) and the Earth Sciences Field Program ‘The Stretch’ (Fall), Dartmouth College, NH
- 2006 Lab Lecturer and Teaching Assistant in Introduction to Earth Sciences: Taught weekly 3-hour laboratory class and assisted primary lecturer with classroom and field-based teaching duties, Dartmouth College, NH (Fall Semester)
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ADDITIONAL RELEVANT EXPERIENCE

- 2013 Student Participant: NASA-Sponsored Ocean Optics Summer Course, Walpole, ME
- 2009 – 2012 Geologist: Arcadis-US/Malcolm Pirnie, Inc., Fair Lawn, NJ
- 2006 Environmental Consultant: GeoQuest Environmental, Rochester, NY (Jun–Aug)
- 2006 Paid Geology Tutor: Skidmore College, NY (Jan–May)
- 2005 Student Investigator: Environmental studies internship to perform stakeholder analysis of those impacted by the changing water sources in Saratoga Springs, NY (Jun–Aug)
- 2004 Summer Intern: Department of Environmental Conservation, Office of Mineral Resources, Avon, NY
- 2003 Environmental Consultant: GeoQuest Environmental, Rochester, NY (Jun–Aug)
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PROFESSIONAL SERVICE

- 2022 Session convener: *Temporal Variability of Bioactive Trace Elements in the Upper Ocean: Towards Constraining Drivers, Mechanisms and Timescales*, Ocean Sciences, Hawaii, USA.
- 2021 Volunteer: UR representative for the Department of Energy virtual student fair
- 2021 Session convener: *Particle fluxes in the oceans: biogeochemical cycles from source to sink*, Goldschmidt, France (due to covid the conference was conducted virtually).
- 2018 - Present Proposal Reviewer: National Science Foundation
- 2015 – Present Manuscript Reviewer: Journal of Geophysical Research: Oceans, Global Biogeochemical Cycles, G³, Deep-Sea Research Part I, Marine Chemistry, Limnology and Oceanography, Progress in Oceanography, Earth System Science Data, Continental Shelf Research, Limnology and Oceanography: Methods

- 2019 Session Co-chair: *Radionuclides in aqueous systems*, Aquatic Sciences, PR
2007 NEGSA Meeting Volunteer: Durham, NH (2007)
2007 NEGSA Meeting Volunteer: Saratoga Springs, NY (2005)
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OUTREACH, VOLUNTEERING, DIVERSITY TRAINING AND INCLUSIVITY EFFORTS

- 2021 University of Rochester Safe Space Certification and Training
2021 Participant: URGE – Unlearning Racism in Geoscience (LDEO pod), 16 weeks,
<https://urgeoscience.org/>
2019 Lamont-Doherty Earth Observatory Open House Volunteer
2018 Judge: Professional and Research Education Program Graduate Student Research Day,
Dalhousie University, NS
2017 Member of Broader Impacts Group, WHOI, MA
2017 National Network for Ocean and Climate Change Interpretation Science Fellow: Acted as
a science expert for informal science educators in a program aimed at improving public
communication of climate change and its impacts on marine life and systems
2016 – 2017 Women’s Committee Chair and Acting Chair, WHOI, MA
2016 Judge: Bourne Schools Science and Engineering Expo, MA
2015 Judge: Falmouth Academy Science Fair, MA
2002 – 2005 Web Coordinator: Environmental Action Committee, Skidmore College, NY

MENTORING

- 2022 – Present Ph.D. Advisor: Karine Holmes (UR)
2022 – Present Ph.D. Advisor: Mariya Cyriac (UR)
2021 – Present MSc Thesis Committee Member: Madeline Healey (Dalhousie University)
2020 – Present Student Mentor: Society for Women in Marine Science (1 mentee – ongoing)
2020 Student Mentor: Ocean Sciences Meeting Mentoring Program (2 mentees)
2015 Science Fair Workshop Mentor: Bourne High School, MA
2015 Undergraduate Student Mentor: WHOI, MA