

CURRICULUM VITAE

MATTHEW A. CHARETTE

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Senior Scientist

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Education:

B.Sc. Chemical Oceanography, Florida Institute of Technology, Melbourne, FL, 1994.

Ph.D. Chemical Oceanography, Graduate School of Oceanography, University of Rhode Island, Kingston, RI, Thorium-234 as a Tracer of the Oceanic Export of Particulate Organic Carbon, 1998; Advisor, Dr. S. Bradley Moran.

Professional Experience:

- Director, Woods Hole Sea Grant, Woods Hole, MA, April 2017 to present.
- Senior Scientist, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA, October 2011 to present.
- Director, Coastal Ocean Institute, Woods Hole Oceanographic Institution, Woods Hole, MA, March 2015 to December 2016.
- Associate Scientist (tenured), Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA, October 2007 to October 2011.
- Associate Scientist, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA, May 2004 to October 2007.
- Assistant Scientist, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA, May 2000 to May 2004.
- Fellow of the Coastal Ocean Institute, Woods Hole Oceanographic Institution, Woods Hole, MA, June 2001 to June 2004.
- Postdoctoral Investigator, Department of Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA, October 1999 to April 2000.
- Postdoctoral Fellow in Marine Chemistry and Geochemistry, Woods Hole Oceanographic Institution, Woods Hole, MA, October 1998 to September 1999; Advisor, Dr. Ken O. Buesseler.
- Research and Teaching Assistant, Graduate School of Oceanography, University of Rhode Island, September 1994 to September 1998.

Honors and Awards:

- Peer Reviewer of Distinction, *Estuaries and Coasts*, for the period 2017-2019.
- John H. Martin Award, Presented by ASLO for a paper that has led to “fundamental shifts in research focus and interpretation of a large body of previous observations” [Boyd et al. (2000) A mesoscale phytoplankton bloom in the polar Southern Ocean stimulated by iron fertilization. *Nature*, 407, 698-702], 2019.
- Charles F. Adams Jr. Senior Scientist Chair, Woods Hole Oceanographic Institution, 2018.
- Distinguished Visiting Scholar, State Key Laboratory of Marine Environmental Science, Xiamen University, 2011.

- Outstanding Reviewer, *Limnology and Oceanography*, 2007.
- Coastal Ocean Institute Fellowship, Woods Hole Oceanographic Institution, 2001.
- Woods Hole Oceanographic Institution Postdoctoral Fellowship, 1998
- Corless Prize for Outstanding Seminar of the Year, University of Rhode Island, 1996.
- Colicci Award for Achievement in Ocean Engineering Design, University of Rhode Island, 1996.
- Outstanding Student in Oceanography, Florida Institute of Technology, 1994.
- Outstanding Student in Oceanography, Florida Institute of Technology, 1993.
- American Chemical Society's Outstanding Student in Analytical Chemistry, Florida Institute of Technology, 1993.

Professional Affiliations:

American Geophysical Union
 American Society of Limnology and Oceanography
 Estuarine Research Federation
 Geochemical Society

Research Interests:

- The impact of groundwater-seawater interaction in coastal aquifers on geochemical cycles in the coastal ocean.
- Radionuclides as tracers of marine processes such as sediment-water exchange, submarine groundwater discharge, glacial meltwater, water mass transport, and oceanic particle cycling.

Professional Activities:

WHOI (Non Education Related)

Committees

- Information Technology Review Committee, 2014.
- Center for Marine and Environmental Radioactivity Advisory Committee, 2013-present.
- Chair, Scientific Staff Executive Committee, 2012.
- Scientific Staff Executive Committee, 2011-2013.
- Chair, Radiation Safety Committee, 2005-present.
- Coastal Ocean Institute Advisory Committee, 2012-present.
- Vice President for Finance Search Committee, 2012.
- Retirement Investment Committee, 2010-2012.
- co-Chair, Retirement Task Force, 2009.
- Executive Committee of the Retirement Task Force, 2008-2009.
- Office of Applied Oceanography Steering Committee, 2006-2007.
- Retirement Task Force, 2005; 2007-2009.
- Radiation Safety Committee, 2003-2015.

Proposal Reviewer

WHOI Green Technology Awards
 Ocean Climate Change Institute

Other

- Organized a special seminar series “*Challenges in Coastal Groundwater Research*” at Woods Hole Oceanographic Institution. Spring 2000.
- Tuesday Noontime Seminar Coordinator, Department of Marine Chemistry and Geochemistry, 2001-2002; 2008-2009.
- Mentorship committee member: Liz Kujawinski (chair), Deirdre Toole, John (Chip) Breier, Alec Wang, Amanda Spivak (chair).
- Promotion committee chair: Rich Camilli, Irina Rypina

Outside WHOI (Other than Attendance at Society/National Meetings):

Committees

- Member, IAPSO-IAHS Joint Commission on Groundwater-Seawater Interactions, May 2003-present.
- Representative/Board Member, Consortium of Universities for the Advancement of Hydrologic Science (CUAHSI), December 2003-September 2015.
- Member, Antarctic Research Vessel Oversight Committee (ARVOC), August 2008-present.
- Review Panel, Korea Institute for Basic Science, August 2013.

Thesis/dissertation committees

- Andrew Miller, Ph.D. (2022-present), University of Wyoming
- Cansu Demir, Ph.D. candidate, (2018-present), University of Texas
- Abraham Role, M.S. (2017), University of Wyoming
- Joe Tamborski, Ph.D. (2016), SUNY-Stony Brook
- Luo Xin, Ph.D. (2015), University of Hong Kong
- Maximilian Mandl, M.S. Candidate (DNF), University of Wyoming
- Qian Liu, Ph.D. (2012), Xiamen University
- Tim Moloney, M.S. (2011), University of Wyoming
- Rebecca Hays, Ph.D. (2010), University of Delaware
- Gabrielle Tomasky, Ph.D. (2007), Boston University Marine Program
- Claudette Spiteri, Ph.D. (2007), University of Utrecht
- Kanchan Maiti, Ph.D. (2007) University of South Carolina
- Aaron Beck, Ph.D. (2007) SUNY-Stony Brook
- Alicia Loveless, Ph.D. (2006) University of Western Australia
- Marci Cole, Ph.D. (2003) Boston University Marine Program

Journal Reviewer

Journal of Marine Systems, Deep-Sea Research I, Marine Chemistry, Geochimica et Cosmochimica Acta, Journal of Coastal Research, Biological Bulletin, Deep-Sea Research II, Arctic, Ground Water, Hydrogeology Journal, Reviews in Mineralogy and Geochemistry, Limnology and Oceanography, Geophysical Research Letters, Estuarine Coastal and Shelf Science, Continental Shelf Research, Journal of Environmental Radioactivity, Journal of Environmental Chemistry, Limnology and Oceanography: Methods, Earth and Planetary Science Letters, Journal of Geophysical Research, Chemical Geology, Groundwater Monitoring and Remediation, Applied Geochemistry, Environmental Science and Technology, Water Research, Journal of Hydrology, Progress in Oceanography, Nature Geoscience

Proposal Reviewer

National Science Foundation (CO, MG&G, CCSP, OPP, Hydrologic Sciences, Int'l Programs, Water Cycle Research, Carbon Cycle), NOAA-CICEET, Rhode Island Sea Grant, Florida Sea Grant, Delaware Sea Grant, Texas Sea Grant, US-Israel Bi-national Science Foundation

Panelist

National Science Foundation-Chemical Oceanography Program
NOAA-Sea Grant-New Hampshire Sea Grant
EPA-STAR Graduate Research Fellowship
NASA-Earth Sciences Program

Leadership and Outreach

- Lawrence Jr. High School Career Day, Falmouth, MA, May 2015.
- Chaired a special session on “*Application of natural and anthropogenic radionuclides to the study of ocean processes*”, 2014 Ocean Sciences Meeting, Honolulu, HI.
- Chaired a special session on “*Constraining Rates of Ocean Processes*”, Goldschmidt 2013, Florence, Italy.
- Guest Editor, *Deep-Sea Research II*, Special issue on “*Synthesis and Modeling of Southern Ocean Natural Iron Fertilization*”, June 2013.
- Chair and Organizer, International Symposium on “*Synthesis and Modeling of Southern Ocean Natural Iron Fertilization*”, Woods Hole Oceanographic Institution, June 2011.
- Guest Editor, *Marine Chemistry*, special issue on “*Radium Isotopic Tracers in Marine Systems*”, April 2008.
- Chaired a special session on “*Biogeochemistry*”, ASLO 2007, Santa Fe, NM.
- Organized and chaired a special session on “*Radionuclides as Tracers of Geochemical Processes From Blue Water to the Land/Ocean Interface*”, AGU/ASLO 2006 Ocean Sciences Meeting, Honolulu, HI.
- Vice-Chair: Gordon Research Conference on *Permeable Sediments* (June 2006)
- Workshop Moderator, “*Application of Sensor Technology to Assessing Groundwater-Surface Water Interactions in the Coastal Zone*”, Sponsored by NOAA-Alliance for Coastal Technology, Savannah, GA, March 2005.
- Directed a three-day field program at Waquoit Bay for Bowdoin College undergraduates (10 students); Course Title: *Coastal Oceanography*. Conducted a follow up visit to Bowdoin College in to discuss data interpretation with the class, April 2003.
- Organized and chaired a special session on “*Groundwater-Surface Water Interactions*”, ASLO 2003, Salt Lake City, UT.
- Invited Workshop Participant: “*Nitrogen Loading in the Gulf of Maine*”. Portsmouth, NH, November 2001.
- Invited Workshop Participant: SCOR Working Group 112 on Submarine Groundwater Discharge, University of Catania, Catania, Sicily, Italy, June, 2001.
- Workshop Participant: Symposium on *Nutrient Overenrichment of Coastal Waters: Global Patterns of Cause and Effect*, National Academy of Sciences, Washington D.C., October 2000.

Participation in MIT/WHOI Joint Program:

- Instructor (with Mark Kurz and Bernhard Peucker-Ehrenbrink), “Marine Isotope Geochemistry”, MIT/WHOI Joint Program, Spring 2002.
- Instructor (with Karen Casciotti), “Seminar in Chemical Oceanography”, MIT/WHOI Joint Program, Spring 2005.
- Instructor (with Bill Martin, Karen Casciotti, and Bernhard Peucker-Ehrenbrink), “Marine Isotope Geochemistry”, MIT/WHOI Joint Program, Fall 2010.
- Instructor, “Introduction to Chemical Oceanography”, BP Short Course on Oceanography, Fall 2011, 2012; Summer 2014.

Thesis/Dissertation Committees

- Luka Catipovic, Ph.D. candidate (2021-present)
- Rebecca Chimel, Ph.D. candidate (2022)
- Erin Black, Ph.D. (2018)
- Maya Bhatia, Ph.D. (2012)
- Dan Rogers, Ph.D. (2010)
- Sheri Simmons, Ph.D. (2006)
- Carolyn Gramling, Ph.D. (2003)
- Linda Rasmussen, Ph.D. (2003)

Other

- WHOI Postdoctoral Scholar Selection Committee, Department of Marine Chemistry and Geochemistry Representative, 2006-2008.
- Joint Program Student Advising Committee, Department of Marine Chemistry and Geochemistry, 2001-2003; 2013-2015; 2019-2021.
- MIT/WHOI Joint Program Admissions Committee, Department of Marine Chemistry and Geochemistry Representative, 2002-2003.
- Chair of Thesis Proposal Defense: Rachel Wisenewski, Evan Howard, Paul Lerner, Rebecca Chmiel, Ph.D. candidates, MIT/WHOI Joint Program
- Chair of Ph.D. Dissertation Defense, Paul Lerner, MIT/WHOI Joint Program
- Joint Committee for Chemical Oceanography, member, 2009-2012.

Supervision at WHOI:

Undergraduate Students

- Carrie Wicklund, Harvey Mudd College (NSF-REU, Summer 1996)
- Stephanie Walsh, Maine Maritime Academy (undergraduate, Fall 1996)
- Danielle Alfano, N. Kingstown H.S. (high school intern, Spring 1998)
- Richard Splivalo, Ohio State University (WHOI Summer Student Fellow, Summer 1999)
- Liam Bossi, Massachusetts Institute of Technology (Guest student, Summer 2000)
- Marcie Workman, University of Missouri (WHOI Summer Student Fellow, Summer 2001)
- Jeremy Testa, State University of New York at Syracuse (NSF-REU, Summer 2002)
- Jennifer Talbot, Boston University (NSF-REU, Summer 2003)
- Daniel Abraham, Bowdoin College (NSF-REU, Summer 2003)
- Linnah Neidel, University of New Mexico (NSF-REU, Summer 2004)
- Kayla Halloran, Bucknell University (Woods Hole Mar. Sci. Consortium Intern, Summer 2004)
- Sharon Bone, Vassar College (NSF-REU, Summer 2005)

- Ratsirin Supcharoen, Bowdoin College (NSF-REU, Summer 2005)
- Deanna McCadney, Western Kentucky University (WHOI Minority Fellow, Summer 2006-7)
- Elena Chung, University of Maryland (NSF-REU, Summer 2007)
- Jessica Fitzsimmons, Boston University (NSF-REU, Summer 2007)
- Katherine French, Yale University (NSF-REU, Summer 2007)
- Rachel Allen, Williams College (NSF-REU, Summer 2008)
- Joe Murray, Arizona State University (NSF-REU, Summer 2009)
- Isaiah Bolden, Bowdoin College, (WHOI Minority Fellow, Summer 2012)
- Megan Behnke, St. Olaf College, (WHOI-SAW Program, Fall Semester 2015)
- William Nguyen, University of Maryland (NSF-REU, Summer 2019)
- Connor Downing, Lehigh University (WHOI-SAW Program, Fall Semester 2019)
- Maya McWilliams, Jackson State University (Woods Hole PEP Program, Summer 2021)
- Carolyn King, Bridgewater State University (Sea Grant CEI Intern, Summer 2022)

Guest Students

- Claudette Spiteri, University of Utrecht, Netherlands (Fall 2004)
- Ester Garcia, University of Barcelona, Spain (Fall 2005)
- John Rapaglia, SUNY-Stony Brook (Fall 2005)
- Paul Morris, Southampton Oceanography Centre, UK (Summer 2004, Summer 2006)
- Michael Bourquin, Laboratoire d'Etudes en Geophysique et Oceanographie Spatiales, France (Summer 2008)
- Qian Liu, Xaimen University, China (February 2009 to September 2010, February-March 2012)
- Joe Murray, Arizona State University (August 2010 to December 2010)
- Virginie Sanial, LEGOS/CNRS, Toulouse, France (September-December 2013, October-December 2014)
- Guillaume Le Gland, University of Brest, France (September-October 2015)
- Emilie Le Roy, LEGOS/CNRS, Toulouse, France (April-June 2016)
- Gabriel Duran, U. Maryland-Baltimore County (June-August 2019)
- Margot Debyser, U. Edinburgh (September 2022-January 2023)

Graduate Students

- Richard (Hunter) Oates, MIT-WHOI Joint Program Ph.D. candidate, (pre-generals research advisor, Jul. 2006 to Dec. 2006)
- Rastirin (Prae) Supcharoen, MIT-WHOI Joint Program Ph.D. candidate, (pre-generals research advisor, Jun. 2006 to Oct. 2009)
- Qian Liu, Xiamen University, China, Ph.D. (co-advisor w/ Dr. Minhan Dai, Sept. 2007 to Oct. 2012)
- Meagan Gonnee, MIT-WHOI Joint Program Ph.D. 2014, (Jul. 2008 to Oct. 2013)
- Benjamin Linhoff, MIT-WHOI Joint Program Ph.D. 2016, (Jun. 2010 to Oct. 2015)
- Lauren Kipp, MIT-WHOI Joint Program Ph.D. candidate, (Jun. 2013 to Aug. 2018)
- Jessica Dabrowski, MIT-WHOI Joint Program M.S. 2020, (Jun. 2017 to Aug. 2020)
- Sheron Luk, MIT-WHOI Joint Program Ph.D. 2022, (co-advisor w/ Dr. Amanda Spivak, Jan. 2019 to Jan. 2022)
- Emma Bullock, MIT-WHOI Joint Program Ph.D. candidate, (Jun. 2020 to present)
- Isabel Schaal, MIT-WHOI Joint Program Ph.D. candidate, (Jun. 2021 to present)

Postdoctoral

- Kevin Kroeger, Postdoctoral Scholar, (Dec. 2002 to Aug. 2004)
- Henrieta Dulaiova, Postdoctoral Scholar, (Nov. 2005 to Nov. 2008)
- Alexandra Rao, Postdoctoral Investigator, (Jan. 2007 to Jul. 2008)
- Kanchan Maiti, Postdoctoral Investigator, (Mar. 2009 to May 2010)
- Paul Morris, Postdoctoral Investigator, (Feb. 2010 to Sept. 2012)
- Matt Long, Postdoctoral Scholar, (Jun. 2013 to Aug. 2016)
- Virginie Sanial, Postdoctoral Scholar, (Sept. 2015 to Aug. 2017)
- Joe Tamborski, Postdoctoral Fellow, (Oct. 2018 to Jul. 2020)
- Emilie Le Roy, Postdoctoral Scholar/Investigator, (May 2019 to December 2021)
- Robert Scharping, Postdoctoral Scholar, (August 2020 to August 2021)
- Margot Debyser, Postdoctoral Investigator (January 2023 to present)

Employees

- Paul Henderson, Research Associate III (Jun. 2004 to present)
- Meagan Eagle Gonnea, Research Associate II (Jun. 2004 to Jul. 2008)
- Sharon Bone, Research Assistant II (Aug. 2005 to Dec. 2005)
- Matthew Allen, Research Assistant III (Jun. 2002 to Aug. 2004)
- Craig Herbold, Research Assistant III (Dec. 2000 to Aug. 2003)
- Adam Rago, Research Assistant I (Jun. 2001 to Jan. 2007)
- Kathleen Kucharski, High School Helper (Nov. 1999 to May 2001)
- Gillian Smith, Laboratory Assistant I (Jun. 2005 to Aug. 2006)
- Kathleen Stone, High School Helper (Jun. 2002 to Jun. 2003)
- Megan Soderstrom, Laboratory Assistant I (Jan. 2007 to Jun. 2007)
- Dan Moakley, High School Helper (Jul. 2008 to May. 2009)
- Grace Rago, High School Helper (Jan. 2006 to Sept. 2010)
- Crystal Brier, Research Associate II (Jan. 2009 to Sept. 2012)
- Elliot Chavez, High School Helper (Jul. 2018 to Aug. 2018)
- Grace Simpkins, Sea Grant Marine Education Specialist (Jan. 2018 to present)
- Jeffrey Brodeur, Sea Grant Communications Specialist (Apr. 2017 to Feb. 2022)
- Stephanie Murphy, Sea Grant Communications Specialist (Oct. 2018 to present)
- Linda Cannata, Administrative Associate, Sea Grant Fiscal Officer (Apr. 2017 to May 2021)
- Jennie Rheuban, Sea Grant Research Coordinator (Jan. 2019 to present)
- Leslie Jonas, Administrative Associate, Sea Grant Fiscal Officer (May 2021 to present)

Cruise and Field Experience:

Cruises

- Marshall Islands, Western Pacific Ocean. 2015. 11 days aboard the *R/V Alucia*. Radium isotopes and radon-222 as tracers of the input of anthropogenic radionuclides from submarine groundwater discharge.
- Northwest Pacific Ocean. 2013. 9 days aboard the *R/V Umitaka Maru*. Measured radium isotope distributions in surface waters surrounding the Fukushima Nuclear Power Plant.
- Sargasso Sea/Mid Atlantic Bight. 2008. 12 days aboard the *R/V Knorr*. Intercalibration exercise for radium isotopes in seawater—GEOTRACES program.

- Gulf of Maine. 2003. 10 days aboard the *R/V Oceanus*. Measured radium isotope distributions in surface waters for the purpose of calculating groundwater discharge and water mass mixing rates.
- Black Sea. 2001. 10 days aboard the *R/V Knorr*. Measured radium isotope distributions in surface waters for the purpose of calculating water mass mixing rates.
- Southern Ocean: Pacific Sector. 1999. 30 days aboard the *R/V Tangaroa*. Measured particulate organic carbon export fluxes during a mesoscale, unenclosed iron fertilization experiment using the natural tracer ^{234}Th as well as free-drifting sediment traps.
- Gulf of Maine and Scotian Shelf. 1997. 20 days aboard the *CCGS Parizeau*. Contaminant and carbon budget on the continental shelf. Collected water column and sediment samples for ^{234}Th , DOC, and trace metals at over 50 stations.
- Southern and equatorial Atlantic Ocean. 1996. 35 days aboard the *R/V Knorr*. Collected samples for ^{234}Th , DOC, and the trace-radionuclides ^{230}Th and ^{231}Pa .
- Sargasso Sea. 1995. 5 days aboard the *R/V Weatherbird*. Radionuclide chemistry and sampling for colloids.
- Central Gulf of Maine. 1995-1996. 5 cruises totaling 24 days at sea. *R/V Hatteras*, *R/V Argo Maine*. Sampled for trace metals and radionuclides; assisted in sediment trap deployment and retrieval.
- Florida Current/Gulf Stream. 1993. 4 days aboard the *R/V Delphinus*. Studied physical and biological characteristics of the Gulf Stream.

Field Work

- Day trips on small boats or land-based sampling: Waquoit Bay, MA; West Falmouth Harbor, MA; Boston Harbor, MA; Pamet River, MA; Cape Cod Bay, MA; Norfolk Harbor, VA; Quonnochoaug Pond, RI; Sippewisset Marsh, MA; Shelter Island, NY; Wilmington, NC; Gulf of Roses, NE Spain; Florida Everglades; Ubatuba, Brazil; SE Sicily, Italy; W. Panama, Mauritius, Venice, Italy; Southwest Florida, Yucatan, Mexico, Kuwait Bay, Kuwait, Western Greenland, Magellan Strait, Chile/Argentina, Guam, Galway Bay, W. Ireland, Yellowstone National Park, WY, Marshall Islands, Fukushima, Japan, Deadhorse, Alaska.

Publications (in review):

*indicates graduate student lead or co-author advisee

#indicates undergraduate lead or co-author advisee

†indicates postdoctoral lead or co-author advisee

156. Le Roy[†], E., M.A. Charette, P.B. Henderson, A. Shiller, W.S. Moore, N. Kemnitz, D.E. Hammond, and T.J. Horner. (2023) Controls on dissolved barium and radium-226 distributions in the Pacific Ocean (GEOTRACES GP15), *Global Biogeochemical Cycles*, submitted.
155. Moore, W.S., M.A. Charette, P.B. Henderson, D.E. Hammond, N. Kemnitz, E.Y. Kwon, and M. Hult. (2023) Enriched Regions of ^{228}Ra along the U.S. GEOTRACES Pacific Meridional Transect (GP15), *Journal of Geophysical Research-Oceans*, submitted.
154. Bullock*, E.J., I. Schaal, M. Cardenas, J. McClelland, P. Henderson, and M.A. Charette. (2023) Seasonality of submarine groundwater discharge to an Arctic coastal lagoon assessed with radium isotopes. *Limnology and Oceanography*, submitted.

153. Demir, C., J.W. McClelland, E. Bristol, M.A. Charette, and M.B. Cardenas. (2023) Supra-permafrost aquifers of the Arctic coast and their significant groundwater, carbon and nitrogen fluxes, *Science Advances*, submitted.
152. Whitmore, L.M., L.T. Jensen, J. Granger, Y. Xiang, L.E. Kipp, A. Pasqualini, R. Newton, A.M. Agather, R.F. Anderson, E.E. Black, K.L. Bowman, A. Bourbonnais, M.A. Brzezinski, R.M. Bundy, M.A. Charette et al. (2023) A U.S. GEOTRACES synthesis of the Arctic Ocean Upper Halocline: multielemental tracers in the Amerasian Basin reveal interlinked biogeochemical and physical processes, *Progress in Oceanography*, submitted.
151. Kemnitz, N., D.E. Hammond, P. Henderson, E. Le Roy, M. Charette, W. Moore, R.F. Anderson, M.Q. Fleisher, E. Black, C.T. Hayes, and S. Hautala. (2023) ^{227}Ac distribution in the Pacific Ocean along the GEOTRACES Meridional Transect GP15 as an indicator of solute transport. *Journal of Geophysical Research-Oceans*, submitted.
150. Leon, M., P. van Beek, V. Sanial, C. Baudet, M.A. Charette, M. Souhaut, F. Vivier, E. Kestenare, C. Jeandel, and H. Planquette. (2023) Investigation of hydrothermal activity in the South West Indian Ridge region using Ra isotopes and ^{227}Ac as tracers, *Progress in Oceanography*, submitted.
149. Wilson, S., A. Moody, T. McKenzie, M.B. Cardenas, E. Luijendijk, A. Sawyer, A. Wilson, H. Michael, B. Xu, K. Knee, H. Cho, Y. Weinstein, A. Paytan, N. Moosdorf, C.A. Chen, M. Beck, C. Lopez, D. Murgulet, G. Kim, M. Charette et al. (2023) Global subterranean estuaries control groundwater nutrient loading to the ocean. *Limnology & Oceanography Letters*, submitted.

Publications (peer reviewed):

148. Kipp, L.E., M.A. Charette, A. Robbins, A. Pnyushkov, I. Polyakov, and L. Whitmore. (2023) Radium isotopes as tracers of shelf-basin exchange processes in the Eastern Arctic Ocean, *Journal of Geophysical Research-Oceans*, accepted.
147. Leon, M., P. van Beek, V. Sanial, M. Souhaut, P. Henderson, and M.A. Charette. (2024) Comparison of methods to determine extraction efficiencies of Ra isotopes and ^{227}Ac from large volume seawater samples, *Marine Chemistry*, **258**, 104328.
146. Sims, K.W.W., C.M. Mesa, S.R. Scott, A.D. Parsekian, A. Miller, A.L. Role, T.P. Moloney, E.L. Shock, J.B. Lowenstern, R.B. McCleskey, M.A. Charette, B.J. Carr, S. Pasquet, H. Heasler, C. Jaworowski, W.S. Holbrook, M.R. Lindsay, D.R. Colman, and E.S. Boyd. (2023) The dynamic influence of subsurface geological processes on the assembly and diversification of thermophilic microbial communities in continental hydrothermal systems. *Geochimica Cosmochimica et Acta*, **362**, 77-103.
145. Le Roy[†], E., P. van Beek, F. Lacan, M. Souhaut, V. Sanial, M.A. Charette, P.B. Henderson, and F. Deng. (2023) The distribution of ^{227}Ac along the GA01 section in the North Atlantic. *Marine Chemistry*, 104207.
144. Kemnitz, N. D.E. Hammond, P. Henderson, E. Le Roy, M. Charette, W. Moore, R.F. Anderson, M.Q. Fleisher, A. Leal, E. Black, C.T. Hayes, J. Adkins, W. Berelson, and X. Bian. (2022) Actinium and radium fluxes from the seabed in the northeast Pacific Basin. *Marine Chemistry*, 104180.
143. Bullock*, E.J., L. Kipp, W. Moore, K. Brown, P.J. Mann, J.E. Vonk, N. Zimov, and M.A. Charette. (2022) Radium inputs into the Arctic Ocean from rivers: a basin-wide estimate. *Journal of Geophysical Research-Oceans*, **127**, e2022JC018964.

142. Tamborski[†], J.J., P. Cai, M. Eagle, P. Henderson, and M.A. Charette. (2022) Revisiting ²²⁸Th as a tool for determining sedimentation and mass accumulation rates. *Chemical Geology*, **607**, 121006.
141. van Beek, P., R. Francois, M. Honda, M.A. Charette, J-L. Reyss, R. Ganeshram, C. Monnin, and S. Honjo. (2022) Fractionation of ²²⁶Ra and Ba in the upper North Pacific Ocean. *Frontiers in Marine Science*, **9**, 10.3389/fmars.2022.859117.
140. Xu, Bochao, M.B. Cardenas, I.R. Santos, W.C. Burnett, M.A. Charette, V. Rodellas, S. Li, E. Lian, and Z. Yu. (2022) Closing the global marine ²²⁶Ra budget reveals biological pump as a dominant removal flux. *Geophysical Research Letters*, **49**, e2022GL098087.
139. Rahman, S. A.M. Shiller, R.F. Anderson, M.A. Charette, C.T. Hayes, M. Gilbert, K.R. Grissom, P.J. Lam, D.C. Ohnemus, F.J. Pavia, B.S. Twining, and S.M. Vivancos. (2022) Inter-basin comparison of the biogeochemical processes controlling the marine Ba cycle: Dissolved and particulate barium distributions along the US GEOTRACES North Atlantic and East Pacific Zonal Transects (GA03 and GP16). *Global Biogeochemical Cycles*, **36**, e2022GB007330.
138. Kipp, L., and M. Charette. (2022) The Arctic Radium Isotope Observing Network (ARION): Tracking climate-driven changes in Arctic ocean chemistry. *Oceanography*, <https://doi.org/10.5670/oceanog.2022.105>.
137. Dabrowski*, J.S., R.S. Pickart, D.A. Stockwell, P. Lin, and M.A. Charette. (2022) Physical drivers of sediment-water interaction on the Beaufort Sea Shelf. *Deep-Sea Research I*, **181**, 103700.
136. Garcia-Orellana, J., V. Rodellas, J. Tamborski, M. Diego-Feliu, P. van Beek, Y. Weinstein, M. Charette, A. Alorada-Kleinglass, H.A. Michael, T. Stieglitz, and J. Scholten. (2021) Radium isotopes as submarine groundwater discharge (SGD) tracers: review and recommendations. *Earth-Science Reviews*, **220**, 103681.
135. Zhao, S., B. Xu, Q. Yao, W.C. Burnett, M.A. Charette, R. Su, E. Lian, and Z. Yu. (2021) Nutrient-rich submarine groundwater discharge fuels the largest green tide in the world. *Science of the Total Environment*, **770**, 144845.
134. Tamborski[†], J.J., M.E. Gonnee, B. Kurylyk, K. Kroeger, Z.A. Wang, P.B. Henderson, and M.A. Charette. (2021) Porewater exchange driven inorganic carbon export from intertidal salt marshes. *Limnology and Oceanography*, **66**, 1774-1792.
133. Tréguer, P.J., J.N. Sutton, M. Brzezinski, M.A. Charette, T. Devries, S. Dutkiewicz, C. Ehlert, J. Hawkings, A. Leynaert, S.M. Liu, M. López-Acosta, N. Llopis-Monferrer, M. Maldonado, S. Rahman, L. Ran, and O. Rouxel. (2021) The silica cycle in the modern ocean. *Biogeosciences*, **18**, 1269-1289.
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Patents:

- Charette, M.A. Seepage meter for measuring submarine groundwater discharge. U.S. Patent 20080196509, August 21, 2008.

WHOI Presentations:

- Marine Chemistry and Geochemistry Seminar Series, Woods Hole Oceanographic Institution, Woods Hole, MA, February 1997, October 1999, January 2002, December 2003, May 2005, October 2006, March 2008, July 2010, October 2014; July 2019.
- Summer Student Fellow Lecture Series, Woods Hole Oceanographic Institution, Woods Hole, MA, July 2005, August 2006, July 2010, July 2019.
- In situ Sensors Seminar Series, Woods Hole Oceanographic Institution, Woods Hole, MA, November, 2005.
- Applied Ocean Physics and Engineering Department Seminar Series, Woods Hole Oceanographic Institution, Woods Hole, MA, June 2010.

Invited Presentations:

- Dissertation Symposium on Chemical Oceanography (DISCO), Honolulu, Hawaii, October 1997.
- Seminar in Chemical Oceanography, University of Rhode Island, Narragansett, RI, December 1998.
- Southcoast Learning Network, Woods Hole, MA, September 2000.
- Seminar in Chemical Oceanography, University of Rhode Island, Narragansett, RI, November 2000.
- University of Delaware, Lewes, DE, November 2000.
- Ecosystems Center Seminar Series, Marine Biological Laboratory, Woods Hole, MA, February 2001.
- Massachusetts Institute of Technology, Cambridge, MA, February 2001.
- University of Massachusetts, Boston, MA, April 2001.
- SCOR Working Group 112 on Submarine Groundwater Discharge, Catania, Italy, June 2001.
- U.S. Naval College visit to Woods Hole Oceanographic Institution, October 2001.
- University of Barcelona, Spain. September 2003.
- IAEA/IOC Working Group on SGD, Monte Carlo, Monaco, June 2004.
- Stony Brook University, Stony Brook, NY, October 2004.
- Utrecht University, Utrecht, The Netherlands, January 2005.
- University of South Carolina, Columbia, SC, February 2005.

- NOAA Alliance for Coastal Technology Workshop on Application of Sensor Technology to Assessing Groundwater-Surface Water Interactions in the Coastal Zone, Skidaway Institute of Oceanography, Savannah, GA, March 2005.
- Florida State University, Tallahassee, FL, April 2005.
- International Symposia for Subsurface Microbiology and Environmental Biogeochemistry, Jackson Hole, Wyoming, August 2005.
- 75th Anniversary Open House Symposium, Woods Hole Oceanographic Institution, Woods Hole, MA, September 2005.
- Geosciences/Marine Chemistry and Geochemistry Seminar Series, Scripps Institution of Oceanography, La Jolla, CA, October 2005.
- National Oceanography Center, Southampton, UK, March 2006.
- LEGOS Seminar Series, Laboratoire d'Etudes en Geophysique et Oceanographie Spatiales, Toulouse, France, May 2006.
- AmeriCorps Water Resources Training Session, Harwich, MA, September 2006.
- Oceans Seminar Series, Stanford University, Stanford, CA, November 2006.
- University of Delaware, Lewes, DE, May 2007.
- AmeriCorps Water Resources Training Session, Eastham, MA, September 2007.
- Utrecht University, Utrecht, The Netherlands, September 2007.
- Dauphin Island Sea Lab (U. South Alabama), Dauphin Island, AL, January 2008.
- University of Miami (RSMAS), Key Biscayne, FL, January 2008.
- University of Guam, POETS Seminar Series, Mangilao, Guam, November 2008.
- GLOBE Teacher Workshop, Woods Hole Oceanographic Institution, Woods Hole, MA, March 2009.
- Paul M. Fye Society Lecture, Woods Hole Oceanographic Institution, August 2009.
- International Atomic Energy Association Marine Environment Lab, Monte Carlo, Monaco, September 2009.
- Earth and Ocean Sciences, University of Southern California, Los Angeles, CA, November 2010.
- Environmental, Earth and Ocean Sciences, University of Massachusetts, Boston, MA, March 2011.
- State Key Lab of Marine Environmental Science, East China Normal University, Shanghai, China, April 2011.
- State Key Lab of Marine Environmental Science, Xiamen University, Xiamen, China, April 2011.
- Sea Grant College, Massachusetts Institute of Technology, Cambridge, MA, June 2011.
- Distinguished Lecturer Series, Department of Geology, University of Wyoming, Laramie, WY, September 2011.
- Marine Sciences Seminar Series, University of Connecticut, Groton, CT, March 2012.
- European Union Sponsored Workshop on Land-Ocean Connectivity - from Hydrological to Ecological Understanding of Groundwater Effects in the Coastal Zone, Brittany, France, September 2012.
- State Key Lab of Marine Environmental Science, Xiamen University, Xiamen, China, October 2012.
- Korean Institute for Basic Science International Symposium on Global and Regional Environmental Changes, Seoul, Korea, August 2013.
- Department of Geology and Geophysics, University of Hawaii-Manoa, February 2014.

- Massachusetts Institute of Technology, Cambridge, MA, March 2014.
- Bridgewater State University, Bridgewater, MA, March 2014.
- Sea Grant College, Massachusetts Institute of Technology, Cambridge, MA, May 2014.
- University of Brest, Brest, France, October 2014.
- Waquoit Bay National Estuarine Research Reserve, Coffee House Series, April 2015.
- Kanazawa University, March 2016
- NOAA Science Days, Silver Spring, MD, June 2017.
- Ocean University of China, Qingdao, China, November 2017.
- Institute of Oceanology, Chinese Academy of Sciences, Qingdao, China, November 2017.
- First Institute of Oceanography, State Oceanic Administration, Qingdao, China, November 2017.
- European Commission Joint Research Centre-Geel, Geel, Belgium, December, 2017.
- Marine Biological Laboratory, Woods Hole, MA, August 2018.
- University of Massachusetts-Dartmouth, New Bedford, MA, March 2019.
- University of Connecticut, Avery Point, CT, January 2020.
- Boston Society of Civil Engineers, virtual, July 2020.
- University of New England, virtual, October 2021.