



## Karen Casciotti

Associate Dean for Facilities and Shared Labs, Professor of Oceans, of Earth System Science and Senior Fellow at the Woods Institute for the Environment

 Curriculum Vitae available Online

### Bio

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#### ACADEMIC APPOINTMENTS

- Professor, Oceans
- Senior Fellow, Stanford Woods Institute for the Environment
- Professor, Earth System Science
- Member, Bio-X

#### ADMINISTRATIVE APPOINTMENTS

- Professor, Oceans Department, Stanford University, (2022- present)
- Professor, ESS Department, Stanford University, (2020- present)
- Victoria and Roger Sant Director, Earth Systems Program, Stanford University, (2019-2023)
- Associate Professor, ESS Department, Stanford University, (2015-2020)
- Assistant Professor, EESS Department, Stanford University, (2011-2015)
- Associate Scientist, MC&G Department, Woods Hole Oceanographic Institution, (2008-2010)
- Assistant Scientist, MC&G Department, Woods Hole Oceanographic Institution, (2004-2008)
- NRC Postdoctoral Fellow, US Geological Survey, Reston VA, (2002-2004)

#### HONORS AND AWARDS

- John Hayes Award, Geochemical Society (2020)
- Terman Fellow, Stanford University (2011)
- WHOI Coastal Ocean Institute Fellow, Woods Hole Oceanographic Institute (WHOI ) (2008-2011)
- NRC Postdoctoral Research Associateship, National Research Council (2002)
- Harold W. Dodds Honorary Fellowship, Princeton University (2001)

#### BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Co-Chair, GEOTRACES Scientific Steering Committee, GEOTRACES (2020 - present)
- Chair, Gordon Research Conference in Chemical Oceanography (2017), GRC (2015 - 2017)
- Standards and Intercalibration Committee member, GEOTRACES (2014 - present)
- Ocean Sciences Meeting Program Committee Co-Chair (2016), American Geophysical Union (2014 - 2016)
- Executive Committee, Ocean Sciences Section, American Geophysical Union (2013 - 2016)
- Ocean Sciences Meeting Program Committee Member (2014), American Geophysical Union (2013 - 2016)

- Vice-Chair, Gordon Research Conference in Chemical Oceanography (2015), GRC (2013 - 2015)
- GEOTRACES Steering Committee member, US GEOTRACES (2012 - 2017)
- Associate Editor, Marine Chemistry (2009 - 2020)
- Intercalibration coordinator for GEOTRACES nitrate isotope measurements, GEOTRACES (2007 - present)
- Associate Editor, Limnology and Oceanography Methods (2006 - 2016)

## PROFESSIONAL EDUCATION

- Ph.D., Princeton University , Geosciences (2002)
- M.S., Princeton University , Geosciences (1999)
- M.S., UCSD Scripps Institution of Oceanography , Oceanography (1998)
- B.S., California Institute of Technology , Environmental Engineering Science (1995)

## LINKS

- Lab Website: <http://nitrogen.stanford.edu>

## Research & Scholarship

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### CURRENT RESEARCH AND SCHOLARLY INTERESTS

#### Research

My research focuses on nitrogen cycle biogeochemistry, including how nitrate, nitrite, and nitrous oxide (N<sub>2</sub>O) are produced and consumed in ocean waters. Nitrate and nitrite are important nutrients for marine photosynthesis, and N<sub>2</sub>O is a climatically important trace gas. I take an interdisciplinary approach to these questions, applying tools from stable isotope geochemistry, geochemical modeling, microbiology and molecular biology.

#### Teaching

I teach Marine Chemistry (EESS 152/252), Marine Stable Isotopes (EESS 249), and co-teach Measurements in Earth Systems (EESS 212)

#### Professional Activities

Executive Committee AGU/Ocean Sciences Section 2013-present; Program Committee for the Ocean Sciences Meeting in 2014 and Co-Chair in 2016; US GEOTRACES Steering Committee January 2012-present; Associate Editor, Limnology and Oceanography: Methods, 2006-present; Associate Editor, Marine Chemistry, 2009-present; Intercalibration coordinator for GEOTRACES nitrate isotope measurements, 2007-present.

Attended GEOTRACES scoping workshops for the Pacific Ocean (June 25-30, 2007) and Indian Ocean (October 24-26, 2007), implementation workshops for the Atlantic Ocean (September 22-24, 2008) and Pacific Ocean (October 1-3, 2008), intercalibration workshops (December 8-9, 2007 and December 13-14, 2008), North Atlantic Section data workshop (March 11-15, 2013), Pacific Section cruise planning meeting (April 24-26, 2013).

Reviewer for NSF (OCE CO and BO, MIP/MO, ETBC, Ecosystems, Chemistry, PIRE), as well as the following journals: Science, Nature, Nature Geoscience, ISME Journal, Environmental Microbiology, PLOS Biology, Limnology and Oceanography, Limnology and Oceanography: Methods, Global Biogeochemical Cycles, Marine Chemistry, Deep Sea Research, Applied and Environmental Microbiology, Analytical Chemistry, Progress in Oceanography, Journal of Geophysical Research, Geophysical Research Letters, Rapid Communications in Mass Spectrometry, Geochimica et Cosmochimica Acta, and two chapters for the new edition of Nitrogen in the Marine Environment.

## Teaching

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### COURSES

#### 2025-26

- Current Topics in Chemical Oceanography: OCEANS 115, OCEANS 215 (Win)
- Marine Chemistry: EARTHSYS 152, EARTHSYS 252, ESS 152, ESS 252, OCEANS 152, OCEANS 252 (Aut)
- Quals Prep Workshop: OCEANS 304 (Win)
- Quals Prep Writing Workshop: OCEANS 303 (Aut)
- Tinkering in Marine Science: OCEANS 165, OCEANS 265 (Spr)

#### 2024-25

- Managing Your PhD: OCEANS 301 (Aut)
- Marine Chemistry: EARTHSYS 152, EARTHSYS 252, ESS 152, ESS 252, OCEANS 152, OCEANS 252 (Aut)
- Marine Stable Isotopes: ESS 249, OCEANS 249 (Win)
- Quals Prep Workshop: OCEANS 304 (Win)
- Quals Prep Writing Workshop: OCEANS 303 (Aut)
- Scientific Communications: An Introduction: OCEANS 305 (Spr)
- Tinkering in Marine Science: OCEANS 165, OCEANS 265 (Spr)

#### 2023-24

- Get to Know Your Oceans: OCEANS 300A (Aut)
- Nitrogen in the Marine Environment: ESS 275, OCEANS 275 (Aut)

#### 2022-23

- Biology and Global Change: BIO 117, EARTHSYS 111, EARTHSYS 217, ESS 111 (Win)
- Marine Chemistry: EARTHSYS 152, EARTHSYS 252, ESS 152, ESS 252 (Spr)

### STANFORD ADVISEES

#### Doctoral Dissertation Reader (AC)

Jessica Bullington, Matthew Illing, Alexy Khrizman, Emily Paris, Claudette Proctor, Rebecca Salcedo, Benjamin Shapero

#### Doctoral Dissertation Advisor (AC)

Luke Calderaro, Lev Romashkov, Lucy Webb

#### Doctoral (Program)

Melea Emunah, Hanif Sulaiman

## Publications

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### PUBLICATIONS

- **Distinguishing the Isotopic Signals of Nitrate Assimilation and Denitrification Along the GEOTRACES GP15 Pacific Meridional Transect** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*  
Marconi, D., Sigman, D. M., Casciotti, K. L., Lawrence, R. M., Wang, W., Oleynik, S., Martinez-Garcia, A.  
2025; 130 (6)
- **The Effects of Biogeochemistry and Water Mass Mixing on the Distribution of Nitrous Oxide in the Tropical South Pacific** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Gluschankoff, N., McGoran, H. J., Casciotti, K. L.

2025; 39 (6)

- **Urea assimilation and oxidation support activity of phylogenetically diverse microbial communities of the dark ocean.** *The ISME journal*  
Arandia-Gorostidi, N., Jaffe, A. L., Parada, A. E., Kapili, B. J., Casciotti, K. L., Salcedo, R. S., Baumas, C. M., Dekas, A. E.  
2024
- **Isotopomer labeling and oxygen dependence of hybrid nitrous oxide production** *BIOGEOSCIENCES*  
Kelly, C. L., Travis, N. M., Baya, P., Frey, C., Sun, X., Ward, B. B., Casciotti, K. L.  
2024; 21 (14): 3215-3238
- **ADVANCES IN UNDERSTANDING THE MARINE NITROGEN CYCLE IN THE GEOTRACES ERA** *OCEANOGRAPHY*  
Casciotti, K. L., Marshall, T. A., Fawcett, S. E., Knapp, A. N.  
2024; 37 (2): 85-101
- **Testing the influence of light on nitrite cycling in the eastern tropical North Pacific** *BIOGEOSCIENCES*  
Travis, N. M., Kelly, C. L., Casciotti, K. L.  
2024; 21 (8): 1985-2004
- **Shifts in the Isotopic Composition of Nitrous Oxide Between El Nino and La Nina in the Eastern Tropical South Pacific** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Gluschankoff, N., Santoro, A. E., Buchwald, C., Casciotti, K. L.  
2023; 37 (10)
- **Mixed Archaeal Production and Nitrifier Denitrification Dominate  $N_2O$  Production in the East China Sea: Insights From Isotopocule and Hydroxylamine Analyses** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*  
Gu, X., Wang, L., Casciotti, K. L., Xin, Y., Liu, S., Zhang, G.  
2023; 128 (8)
- **Light, ammonium, pH, and phytoplankton competition as environmental factors controlling nitrification** *LIMNOLOGY AND OCEANOGRAPHY*  
Proctor, C., Coupel, P., Casciotti, K., Tremblay, J., Zakem, E., Arrigo, K. R., Mills, M. M.  
2023
- **pyisotopomer: A Python package for obtaining intramolecular isotope ratio differences from mass spectrometric analysis of nitrous oxide isotopocules.** *Rapid communications in mass spectrometry : RCM*  
Kelly, C. L., Manning, C., Frey, C., Kaiser, J., Gluschankoff, N., Casciotti, K. L.  
2023: e9513
- **Nitrite cycling in the primary nitrite maxima of the eastern tropical North Pacific** *BIOGEOSCIENCES*  
Travis, N. M. M., Kelly, C. L. L., Mulholland, M. R. R., Casciotti, K. L. L.  
2023; 20 (2): 325-347
- **Epipelagic nitrous oxide production offsets carbon sequestration by the biological pump** *NATURE GEOSCIENCE*  
Wan, X. S. S., Sheng, H., Dai, M., Casciotti, K. L. L., Church, M. J. J., Zou, W., Liu, L., Shen, H., Zhou, K., Ward, B. B. B., Kao, S.  
2022
- **Kinetics of nitrous oxide production from ammonia oxidation in the Eastern Tropical North Pacific** *LIMNOLOGY AND OCEANOGRAPHY*  
Frey, C., Sun, X., Szemlerski, L., Casciotti, K. L., Garcia-Robledo, E., Jayakumar, A., Kelly, C. L., Lehmann, M. F., Ward, B. B.  
2022
- **Coincident Biogenic Nitrite and pH Maxima Arise in the Upper Anoxic Layer in the Eastern Tropical North Pacific** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Cinay, T., Dumit, D., Woosley, R. J., Boles, E. L., Kwiecinski, J., Mullen, S., Tamasi, T. J., Wolf, M. J., Kelly, C. L., Travis, N. M., Casciotti, K. L., Babbitt, A. R.  
2022; 36 (12)
- **The Angola Gyre is a hotspot of dinitrogen fixation in the South Atlantic Ocean** *COMMUNICATIONS EARTH & ENVIRONMENT*  
Marshall, T., Granger, J., Casciotti, K. L., Dahnke, K., Emeis, K., Marconi, D., McIlvin, M. R., Noble, A. E., Saito, M. A., Sigman, D. M., Fawcett, S. E.  
2022; 3 (1)
- **Identifying the Sources and Drivers of Nitrous Oxide Accumulation in the Eddy-Influenced Eastern Tropical North Pacific Oxygen-Deficient Zone** *GLOBAL BIOGEOCHEMICAL CYCLES*

- Monreal, P. J., Kelly, C. L., Travis, N. M., Casciotti, K. L.  
2022; 36 (6)
- **Abiotic Nitrous Oxide Production From Sediments and Brine of Don Juan Pond, Wright Valley Antarctica, at Mars Analog Temperatures (-40 degrees C)** *GEOPHYSICAL RESEARCH LETTERS*  
Schutte, C. A., Samarkin, V. A., Bowles, M. W., Peters, B., Casciotti, K. L., Madigan, M. T., Joye, S. B.  
2022; 49 (3)
  - **Protocols for Assessing Transformation Rates of Nitrous Oxide in the Water Column** *FRONTIERS IN MARINE SCIENCE*  
Bourbonnais, A., Frey, C., Sun, X., Bristow, L. A., Jayakumar, A., Ostrom, N. E., Casciotti, K. L., Ward, B. B.  
2021; 8
  - **Nitrification and Nitrous Oxide Production in the Offshore Waters of the Eastern Tropical South Pacific** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Santoro, A. E., Buchwald, C., Knapp, A. N., Berelson, W. M., Capone, D. G., Casciotti, K. L.  
2021; 35 (2)
  - **Quantifying Nitrous Oxide Cycling Regimes in the Eastern Tropical North Pacific Ocean With Isotopomer Analysis** *Global Biogeochemical Cycles*  
Kelly, C. L., Travis, N. M., Baya, P. A., Casciotti, K. L.  
2021; 35 (2): e2020GB006637
  - **Microbial N<sub>2</sub>O consumption in and above marine N<sub>2</sub>O production hotspots.** *The ISME journal*  
Sun, X., Jayakumar, A., Tracey, J. C., Wallace, E., Kelly, C. L., Casciotti, K. L., Ward, B. B.  
2020
  - **Vertical stratification and stability of biogeochemical processes in the deep saline waters of Lake Vanda, Antarctica** *LIMNOLOGY AND OCEANOGRAPHY*  
Schutte, C. A., Samarkin, V. A., Peters, B., Madigan, M. T., Bowles, M., Morgan-Kiss, R., Casciotti, K., Joye, S.  
2020; 65 (3): 569–81
  - **Amperometric sensor for nanomolar nitrous oxide analysis.** *Analytica chimica acta*  
Damgaard, L. R., Kelly, C. n., Casciotti, K. n., Ward, B. B., Revsbech, N. P.  
2020; 1101: 135–40
  - **Distribution of Concentration and Stable Isotopic Composition of N<sub>2</sub>O in the Shelf and Slope of the Northern South China Sea: Implications for Production and Emission** *JOURNAL OF GEOPHYSICAL RESEARCH-OCEANS*  
Zhang, G., Liu, S., Casciotti, K. L., Forbes, M. S., Gu, X., Ren, Y., Zheng, W.  
2019; 124 (8): 6218–34
  - **Evidence for Microbial Mediated NO<sub>3</sub>- Cycling Within Floodplain Sediments During Groundwater Fluctuations** *FRONTIERS IN EARTH SCIENCE*  
Bouskill, N. J., Conrad, M. E., Bill, M., Brodie, E. L., Cheng, Y., Hobson, C., Forbes, M., Casciotti, K. L., Williams, K. H.  
2019; 7
  - **Dual nitrogen and oxygen isotope fractionation during anaerobic ammonium oxidation by anammox bacteria.** *The ISME journal*  
Kobayashi, K., Makabe, A., Yano, M., Oshiki, M., Kindaichi, T., Casciotti, K. L., Okabe, S.  
2019
  - **Modeling oceanic nitrate and nitrite concentrations and isotopes using a 3-D inverse N cycle model** *BIOGEOSCIENCES*  
Martin, T. S., Primeau, F., Casciotti, K. L.  
2019; 16 (2): 347–67
  - **An N isotopic mass balance of the Eastern Tropical North Pacific oxygen deficient zone**  
Fuchsman, C. A., Devol, A. H., Casciotti, K. L., Buchwald, C., Chang, B. X., Horak, R. E. A.  
PERGAMON-ELSEVIER SCIENCE LTD.2018: 137–47
  - **Estimating fixed nitrogen loss and associated isotope effects using concentration and isotope measurements of NO<sub>3</sub>-, NO<sub>2</sub>-, and N<sub>2</sub> from the Eastern Tropical South Pacific oxygen deficient zone**  
Peters, B., Horak, R., Devol, A., Fuchsman, C., Forbes, M., Mordy, C. W., Casciotti, K. L.  
PERGAMON-ELSEVIER SCIENCE LTD.2018: 121–36

- **The GEOTRACES Intermediate Data Product 2017** *CHEMICAL GEOLOGY*  
Schlitzer, R., Anderson, R. F., Dodas, E., Lohan, M., Geibere, W., Tagliabue, A., Bowie, A., Jeandel, C., Maldonado, M. T., Landing, W. M., Cockwell, D., Abadie, C., Abouchami, et al  
2018; 493: 210–23
- **Preliminary assessment of stable nitrogen and oxygen isotopic composition of USGS51 and USGS52 nitrous oxide reference gases and perspectives on calibration needs** *RAPID COMMUNICATIONS IN MASS SPECTROMETRY*  
Ostrom, N. E., Gandhi, H., Coplen, T. B., Toyoda, S., Bohlke, J. K., Brand, W. A., Casciotti, K. L., Dyckmans, J., Giesemann, A., Mohn, J., Well, R., Yu, L., Yoshida, et al  
2018; 32 (15): 1207–14
- **Ammonia-oxidizing bacteria are the primary N<sub>2</sub>O producers in an ammonia-oxidizing archaea dominated alkaline agricultural soil** *ENVIRONMENTAL MICROBIOLOGY*  
Meinhardt, K. A., Stopnisek, N., Pannu, M. W., Strand, S. E., Fransen, S. C., Casciotti, K. L., Stahl, D. A.  
2018; 20 (6): 2195–2206
- **Nitrogen and oxygen isotope measurements of nitrate along the US GEOTRACES Eastern Pacific Zonal Transect (GP16) yield insights into nitrate supply, remineralization, and water mass transport**  
Peters, B. D., Lam, P. J., Casciotti, K. L.  
ELSEVIER SCIENCE BV.2018: 137–50
- **Water mass analysis of the 2013 US GEOTRACES eastern Pacific zonal transect (GP16)**  
Peters, B. D., Jenkins, W. J., Swift, J. H., German, C. R., Moffett, J. W., Cutter, G. A., Brzezinski, M. A., Casciotti, K. L.  
ELSEVIER SCIENCE BV.2018: 6–19
- **Tropical Dominance of N-2 Fixation in the North Atlantic Ocean** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Marconi, D., Sigman, D. M., Casciotti, K. L., Campbell, E. C., Weigand, M., Fawcett, S. E., Knapp, A. N., Rafter, P. A., Ward, B. B., Haug, G. H.  
2017; 31 (10): 1608–23
- **Paired N and O isotopic analysis of nitrate and nitrite in the Arabian Sea oxygen deficient zone** *DEEP-SEA RESEARCH PART I-OCEANOGRAPHIC RESEARCH PAPERS*  
Martin, T. S., Casciotti, K. L.  
2017; 121: 121-131
- **Multiple metabolisms constrain the anaerobic nitrite budget in the Eastern Tropical South Pacific** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Babbin, A. R., Peters, B. D., Mordy, C. W., Widner, B., Casciotti, K. L., Ward, B. B.  
2017; 31 (2): 258-271
- **Controls of nitrogen cycling evaluated along a well-characterized climate gradient.** *Ecology*  
von Sperber, C., Chadwick, O. A., Casciotti, K. L., Peay, K. G., Francis, C. A., Kim, A. E., Vitousek, P. M.  
2017
- **Hydrothermal impacts on trace element and isotope ocean biogeochemistry** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES*  
German, C. R., Casciotti, K. A., Dutay, J., Heimburger, L. E., Jenkins, W. J., Measures, C. I., Mills, R. A., Obata, H., Schlitzer, R., Tagliabue, A., Turner, D. R., Whitby, H.  
2016; 374 (2081)
- **Nitrite isotopes as tracers of marine N cycle processes.** *Philosophical transactions. Series A, Mathematical, physical, and engineering sciences*  
Casciotti, K. L.  
2016; 374 (2081)
- **Nitrite isotopes as tracers of marine N cycle processes** *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY A-MATHEMATICAL PHYSICAL AND ENGINEERING SCIENCES*  
Casciotti, K. L.  
2016; 374 (2081)
- **Vertical modeling of the nitrogen cycle in the eastern tropical South Pacific oxygen deficient zone using high-resolution concentration and isotope measurements** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Peters, B. D., Babbin, A. R., Lettmann, K. A., Mordy, C. W., Ulloa, O., Ward, B. B., Casciotti, K. L.  
2016; 30 (11): 1661-1681

- **Differential N<sub>2</sub>O dynamics in two oxygen-deficient lake basins revealed by stable isotope and isotopomer distributions** *LIMNOLOGY AND OCEANOGRAPHY*  
Wenk, C. B., Frame, C. H., Koba, K., Casciotti, K. L., Veronesi, M., Niemann, H., Schubert, C. J., Yoshida, N., Toyoda, S., Makabe, A., Zopfi, J., Lehmann, M. F.  
2016; 61 (5): 1735-1749
- **Variable Nitrification Rates Across Environmental Gradients in Turbid, Nutrient-Rich Estuary Waters of San Francisco Bay** *ESTUARIES AND COASTS*  
Damashek, J., Casciotti, K. L., Francis, C. A.  
2016; 39 (4): 1050-1071
- **Nitrogen and oxygen isotopic fractionation during microbial nitrite reduction** *LIMNOLOGY AND OCEANOGRAPHY*  
Martin, T. S., Casciotti, K. L.  
2016; 61 (3): 1134-1143
- **Low rates of nitrogen fixation in eastern tropical South Pacific surface waters** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*  
Knapp, A. N., Casciotti, K. L., Berelson, W. M., Prokopenko, M. G., Capone, D. G.  
2016; 113 (16): 4398-4403
- **Nitrogen and Oxygen Isotopic Studies of the Marine Nitrogen Cycle.** *Annual review of marine science*  
Casciotti, K. L.  
2016; 8: 379-407
- **Nitrogen and Oxygen Isotopic Studies of the Marine Nitrogen Cycle** *ANNUAL REVIEW OF MARINE SCIENCE, VOL 8*  
Casciotti, K. L.  
2016; 8: 379-407
- **Nitrate isotope distributions on the US GEOTRACES North Atlantic cross-basin section: Signals of polar nitrate sources and low latitude nitrogen cycling** *MARINE CHEMISTRY*  
Marconi, D., Weigand, M. A., Rafter, P. A., McIlvin, M. R., Forbes, M., Casciotti, K. L., Sigman, D. M.  
2015; 177: 143-156
- **Nitrogen cycling in the secondary nitrite maximum of the eastern tropical North Pacific off Costa Rica** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Buchwald, C., Santoro, A. E., Stanley, R. H., Casciotti, K. L.  
2015; 29 (12): 2061-2081
- **Intense nitrogen cycling in permeable intertidal sediment revealed by a nitrous oxide hot spot** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Schutte, C. A., Joye, S. B., Wilson, A. M., Evans, T., Moore, W. S., Casciotti, K.  
2015; 29 (10): 1584-1598
- **Aspects of the marine nitrogen cycle of the Chukchi Sea shelf and Canada Basin** *DEEP-SEA RESEARCH PART II-TOPICAL STUDIES IN OCEANOGRAPHY*  
Brown, Z. W., Casciotti, K. L., Pickart, R. S., Swift, J. H., Arrigo, K. R.  
2015; 118: 73-87
- **Stable Isotopes and Iron Oxide Mineral Products as Markers of Chemodenitrification** *ENVIRONMENTAL SCIENCE & TECHNOLOGY*  
Jones, L. C., Peters, B., Pacheco, J. S., Casciotti, K. L., Fendorf, S.  
2015; 49 (6): 3444-3452
- **N<sub>2</sub>O production in the eastern South Atlantic: Analysis of N<sub>2</sub>O stable isotopic and concentration data** *GLOBAL BIOGEOCHEMICAL CYCLES*  
Frame, C. H., Deal, E., Nevison, C. D., Casciotti, K. L.  
2014; 28 (11): 1262-1278
- **Interlaboratory assessment of nitrous oxide isotopomer analysis by isotope ratio mass spectrometry and laser spectroscopy: current status and perspectives** *RAPID COMMUNICATIONS IN MASS SPECTROMETRY*  
Mohn, J., Wolf, B., Toyoda, S., Lin, C., Liang, M., Brueggemann, N., Wissel, H., Steiker, A. E., Dyckmans, J., Szewc, L., Ostrom, N. E., Casciotti, K. L., Forbes, et al  
2014; 28 (18): 1995-2007

- **Placing an upper limit on cryptic marine sulphur cycling** *NATURE*  
Johnston, D. T., Gill, B. C., Masterson, A., Beirne, E., Casciotti, K. L., Knapp, A. N., Berelson, W.  
2014; 513 (7519): 530-?
- **Differential contributions of archaeal ammonia oxidizer ecotypes to nitrification in coastal surface waters.** *ISME journal*  
Smith, J. M., Casciotti, K. L., Chavez, F. P., Francis, C. A.  
2014; 8 (8): 1704-1714
- **Stable isotope analyses of NO<sub>2</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup>, and N<sub>2</sub>O in the hypersaline ponds and soils of the McMurdo Dry Valleys, Antarctica** *GEOCHIMICA ET COSMOCHIMICA ACTA*  
Peters, B., Casciotti, K. L., Samarkin, V. A., Madigan, M. T., Schutte, C. A., Joye, S. B.  
2014; 135: 87-101
- **Stable isotopic analyses of NO<sub>2</sub><sup>-</sup>, NO<sub>3</sub><sup>-</sup>, and N<sub>2</sub>O in hypersaline ponds and soils of the McMurdo Dry Valleys, Antarctica** *Geochimica et Cosmochimica Acta*  
Peters, B., Casciotti, K. L., Samarkin, V. A., Madigan, M. T., Schutte, C. A., Joye, S. B.  
2014
- **Differential contributions of archaeal ammonia oxidizer ecotypes to nitrification in coastal surface waters** *ISME Journal*  
Smith, J. M., Casciotti, K. L., Chavez, F. P., Francis, C. A.  
2014
- **Aspects of the marine nitrogen cycle on the Chukchi Sea shelf and Canada Basin** *Deep Sea Research II*  
Browh, Z. W., Casciotti, K. L., Pickart, R. L., Swift, J. H., Arrigo, K. R.  
2014
- **Implications of nitrate and nitrite isotopic measurements for the mechanisms of nitrogen cycling in the Peru oxygen deficient zone** *DEEP-SEA RESEARCH PART I-OCEANOGRAPHIC RESEARCH PAPERS*  
Casciotti, K. L., Buchwald, C., McIlvin, M.  
2013; 80: 78-93
- **Stable Isotopes as Tracers of Anthropogenic Nitrogen Sources, Deposition, and Impacts** *ELEMENTS*  
Hastings, M. G., Casciotti, K. L., Elliott, E. M.  
2013; 9 (5): 339-344
- **Excess nitrate loads to coastal waters reduces nitrate removal efficiency: mechanism and implications for coastal eutrophication** *ENVIRONMENTAL MICROBIOLOGY*  
Lunau, M., Voss, M., Erickson, M., Dziallas, C., Casciotti, K., Ducklow, H.  
2013; 15 (5): 1492-1504
- **Isotopic ratios of nitrite as tracers of the sources and age of oceanic nitrite** *NATURE GEOSCIENCE*  
Buchwald, C., Casciotti, K. L.  
2013; 6 (4): 308-313
- **Measurements of nitrite production in and around the primary nitrite maximum in the central California Current** *BIOGEOSCIENCES*  
Santoro, A. E., Sakamoto, C. M., Smith, J. M., Plant, J. N., Gehman, A. L., Worden, A. Z., Johnson, K. S., Francis, C. A., Casciotti, K. L.  
2013; 10 (11): 7395-7410
- **Insights on the marine microbial nitrogen cycle from isotopic approaches to nitrification.** *Frontiers in microbiology*  
Casciotti, K. L., Buchwald, C.  
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