

Laura A. Bristow

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Education and Employment

From 2017 **Assistant Professor**, Nordcee, University of Southern Denmark, Denmark
2015 – 2017 **Research Scientist**, MPI for Marine Microbiology, Bremen, Germany
2011 – 2015 **Postdoctoral Researcher**, Nordcee, University of Southern Denmark, Denmark
2009 – 2011 **Postdoctoral Researcher**, SMAST, University of Massachusetts Dartmouth, USA
2010 **PhD**, School of Environmental Sciences, University of East Anglia, Norwich, UK
2005 **Master of Oceanography** (First Class), University of Southampton, UK

Teaching, Supervision and Leadership

2018 – 2019 Lecturer Training Programme, University of Southern Denmark
From 2018 Course leader, Field Course in Marine Biology, University of Southern Denmark
2016 – 2017 Lecturer in Biogeochemistry, MPI for Marine Microbiology, Bremen, Germany
2012 – 2015 Lab leader, Toxicology, University of Southern Denmark, Denmark

Supervision: PhD (co-supervisor) Herdís Steinsdóttir (University of Southern Denmark, 2018 –21), Clarissa Karthäuser (MPI Bremen, 2016-20), Katharina Kitzinger (MPI Bremen, 2015-19) Masters / Research Projects Anders Barnewitz (University of Southern Denmark, 2019 –20), Chawalit Charoenpong (MSc; University of Massachusetts Dartmouth 2013), Elizabeth Lee (BSc; University of Massachusetts Dartmouth 2011)

Principal Investigator: DFF RP1 Recycling versus loss in the marine nitrogen cycle: the pivotal role of nitrite (2019 to 2022; 2,789,280 kr)

Professional Activities

Associate Editor of Marine Biogeochemistry; specialty section of Frontiers in Marine Science, Frontiers in Earth Science and Frontiers in Chemistry; August 2017 – present

Peer-Reviewing Activities: Journals Aquatic Microbial Ecology, Biogeosciences, Geophysical Research Letters, Global Biogeochemical Cycles, Journal of Geophysical Research, Limnology and Oceanography; Marine Chemistry, Marine Ecology Progress Series, Nature Geoscience, PNAS and Science Funding Agencies DFG (Germany), NERC (UK), NSF (USA)

- Awarded 2016 Editors' Citation for Excellence in Refereeing, Geophysical Research Letters

Committees: ASLO Early Career Committee; 2012–2018; ASLO Early Career Awards Committee; 2014-2018

Conferences: 1 keynote, 9 other invited Talks, 12 oral conference presentations, 5 session chairs, 16 conferences

Research Areas

Special Fields of Expertise: Marine biogeochemistry, marine nitrogen cycle and its interactions with other element cycles, oxygen regulation and kinetics of nitrogen transformations, isotope systematics, oxygen minimum zones

Additional Fields of Interest: Microbial gene abundance and expression – metagenomics and metatranscriptomics, aggregates as highly active microenvironments, use of single cell techniques to identify & quantify activity in nitrogen cycling microorganisms

Collaborators: Niels-Peter Revsbech (Aarhus University), Frank Stewart (Georgia Tech, USA), Eric Achterberg (GEOMAR; Kiel, Germany), Marcel Kuypers, Gaute Lavik & Hannah Marchant (MPI Bremen, Germany), Bonnie Chang (NOAA, USA), Osvaldo Ulloa (U. Concepcion, Chile), Eddy Gomez Ramirez (U. Costa Rica), Mark Altabet & Annie Bourbonnais (UMass Dartmouth, USA), Virginia Edgcomb & Maria Pachiadaki (WHOI, USA)

Selected Peer-reviewed Publications (of 20 career publications)

Kitzinger K, Marchant HK, **Bristow LA**, Herbold CW, Padilla CC, Kidane AT, Littmann S, Daims H, Pjevac P, Stewart FJ, Wagner W and Kuypers MMM. 2020. Single cell analyses reveal contrasting life strategies of the two main nitrifiers in the ocean. Nature Communications 11, 767

Thamdrup B, Steinsdóttir HGR, Bertagnolli AD, Padilla CC, Patin NV, Garcia-Robledo E, **Bristow LA**, Stewart FJ. 2019. Anaerobic methane oxidation is an important sink for methane in the ocean's largest oxygen minimum zone. Limnology

and Oceanography doi: 10.1002/lno.11235

Kitzinger K, Padilla CC, Marchant HK, Hach P, Herbold CW, Kidane A, Konneke M, Littmann S, Mooshammer M, Niggemann J, Petrov S, Richter A, Stewart FJ, Wagner M, Kuypers MMM and **Bristow LA**. 2019. Cyanate and urea are substrates for nitrification by Thaumarchaeota in the marine environment. *Nature Microbiology* 4: 234-243 doi: 10.1038/s41564-018-0316-2

Ganesh S, Bertagnolli AB, **Bristow LA**, Padilla CC, Blackwood N, Aldunate M, Bourbonnais A, Altabet MA, Malmstrom RR, Woyke T, Ulloa O, Konstantinidis KT, Thamdrup B and Stewart FJ. 2018. Single cell genomic and transcriptomic evidence for the use of alternative nitrogen substrates by anammox bacteria. *The ISME Journal* 12: 2706-2722 doi: 10.1038/s41396-018-0223-9

Padilla CC, Bertagnolli AD, **Bristow LA**, Sarode N, Glass JB, Thamdrup B and Stewart FJ. 2017. Metagenomic binning recovers a transcriptionally active Gammaproteobacterium linking methanotrophy to partial denitrification in an anoxic oxygen minimum zone. *Frontiers in Marine Science* 4:23 doi: 10.3389/fmars.2017.00023

Bristow LA, Callbeck CM, Larsen M, Altabet MA, Dekaezemacker J, Forth M, Glud RN, Kuypers MMM, Lavik G, Mangesh G, Milucka J, Naqvi SWA, Pratihary A, Revsbech NP, Thamdrup B, Treusch A and Canfield DE. 2017. N₂ production rates limited by nitrite availability in the Bay of Bengal Oxygen Minimum Zone. *Nature Geoscience* 10: 24-29; doi:10.1038/ngeo2847.

Bristow LA, Dalsgaard T, Tiano L, Mills D, Bertagnolli A, Wright JJ, Hallam SJ, Ulloa O, Revsbech NP, Canfield D and Thamdrup B. 2016. Ammonium and nitrite oxidation at nanomolar oxygen concentrations in oxygen minimum zone waters. *Proceedings of the National Academy of Sciences* 113(38): 10601-10606; doi: 10.1073/pnas.1600359113

Tsementzi D, Wu J, Deutsch S, Nath S, Rodriguez R, Burns AS, Ranjan P, Sarode N, Malmstrom RR, Padilla CC, Stone BK, **Bristow LA**, Larsen M, Glass JB, Thamdrup B, Woyke T, Konstantinidis KT and Stewart FJ. 2016. SAR11 bacteria linked to ocean anoxia and nitrogen loss. *Nature* doi:10.1038/nature19068.

Padilla C, **Bristow LA**, Sarode N, Garcia-Robledo E, Gomez Ramirez E, Benson C, Bourbonnais A, Altabet MA, Girguis PR, Thamdrup B and Stewart FJ. 2016. NC10 bacteria in marine oxygen minimum zones. *The ISME Journal* 10: 2067-2071; doi:10.1038/ismej.2015.262.

Bristow LA, Sarode N, Cartee J, Caro-Quintero A, Thamdrup B and Stewart FJ. 2015. Biogeochemical and metagenomic analysis of nitrite accumulation in the Gulf of Mexico hypoxic zone. *Limnology and Oceanography* 60(5): 1733-1750; doi: 10.1002/lno.10130.

Ganesh S, **Bristow LA**, Larsen M, Sarode N, Thamdrup B and Stewart FJ. 2015. Size-fraction partitioning of community gene transcription and rates of nitrogen metabolism in a marine oxygen minimum zone. *The ISME Journal* 9: 2682-2696; doi: 10.1038/ismej.2015.44.