

## Julia Kurth, PhD

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### Qualifications and career

**Since September 2022:** Head of 'Microbial Physiology' research group, Microcosm Earth Center, Philipps-Universität Marburg & Max Planck Institute for Terrestrial Microbiology, Marburg, DE

**April 2022 – August 2022:** Postdoctoral researcher at the Laboratory of Microbiology with Prof. Diana Sousa, Topic: Physiology of marine methylotrophic methanogens, Wageningen University & Research, Wageningen, NL

**April 2017 – March 2022:** Postdoctoral researcher at the Department of Microbiology with Prof. Cornelia Welte & Prof. Mike Jetten, Topic: Investigation of novel archaeal metabolisms, Radboud University, Nijmegen, NL  
Including research stays at the Max Planck Institute in Bremen, DE (6 weeks), at Aalborg University, DK (3 weeks) and at the Royal Netherlands Institute for Sea Research on Texel, NL (6 weeks)

**October 2013 – March 2017:** PhD in Microbiology, Mentor: PD Christiane Dahl, Research area: Physiology of sulfur-cycling bacteria & mechanistics of the involved enzymes, Grade: Summa cum laude, University of Bonn, DE  
Including research stays at the University of East Anglia in Norwich, U.K. (12 weeks) and at the University of Sheffield, U.K. (4 weeks)

**October 2011 - August 2013:** MSc in Microbiology, Grade: 1.0, University of Bonn, DE

**October 2008 – September 2011:** BSc in Biology, Grade 1.3, University of Bonn, DE

### Awards, Grants & Fellowships

2024-2027	DFG research grant 'Sachbeihilfe Einzelantrag'
2022	Offer of a Junior Professorship at the University of Freiburg, declined
2022	Van Leeuwenhoek Award
2020 - 2019	2 x SIAM talent grant
2018 - 2020	DFG Research Fellowship by the German research foundation; primary applicant
2014 - 2016	Hoechst PhD fellowship of the Aventis Foundation awarded by the Stiftung Stipendienfonds des Verbandes der Chemischen Industrie e.V (VCI); primary applicant
2015	2 x FEMS Young Scientists Meeting Grant
2013 - 2014	Personal fellowship by the Maria von Linden women support program of the University of Bonn
2013	Excellence fellowship 'Biology' of the University of Bonn

### Conferences & Presentations

2022, 2018	Oral presentation at the Gordon Research Conference on Molecular Basis of Microbial One-Carbon Metabolism in Southbridge, MA, United State ( <b>invited speaker</b> ) in 2022 and poster presentation in 2018
2021-22, 2018-19	Oral presentation at the Annual Meeting of the Dutch Association for Microbiology (KNVM) ( <b>in 2021 invited speaker</b> )
2018-21, 2016	Oral presentation at the Annual Meeting of the Association of General and Applied Microbiology (VAAM)
2015	Attendance at the Lindau Nobel Laureate Meeting in Germany
2015	Poster presentation at the Microbial Sulfur Metabolism Meeting in Helsingør, Denmark
2015	Oral presentation at the Bacterial Electron Transfer Processes Meeting in Vimeiro, Portugal

## Supervision

- Since 2023 Supervision of three PhD students at the University of Marburg, DE  
Since 2020 Co-supervision of one PhD student at Radboud University, NL  
Since 2013 Supervision of 3 Bachelor students and 4 Master students

## Community services

- Since 2022 Mentor in the VAAMentoring program  
Since 2021 Editorial Board for 'Frontiers in Microbiology' and Frontiers 'Microbial Physiology and Metabolism'  
2018 Co-organizer of the European one carbon meeting in Nijmegen (NL)  
Since 2018 Reviewer for ISME J, Journal of the American Chemical Society, Environmental Science and Technology, Scientific Reports, Antonie van Leeuwenhoek.

## Teaching activities (selection)

- Since 2023 Lecturer of the MSc course 'Microbial Ecology' at the University of Marburg  
2018-2021 Coordinator and lecturer of the MSc course 'Microbial Physiology and Metabolism' at Radboud University, NL  
2019-2020 Lecturing and practicum coordination/supervisor of the BSc course 'Physiology of Microorganisms' at Radboud University, NL  
2013-2017 Supervision of two MSc courses and one BSc course at the University of Bonn, DE

## Publications (selection; \*corresponding)

- 1) HT Ouboter, A Arshad, S Berger, JG Saucedo Sanchez, HJM Op den Camp, MSM Jetten, CU Welte, **JM Kurth\*** (2023): Acetate and acetyl-CoA metabolism of ANME-2 anaerobic archaeal methanotrophs. *Appl Environ Microbiol* 89: e00367-23. doi.org/10.1128/aem.00367-23.
- 2) M Glodowska, CU Welte, **JM Kurth** (2022): Metabolic potential of anaerobic methane oxidizing archaea for a broad spectrum of electron acceptors. *Adv Microb Physiol*: 80:157-201. doi: 10.1016/bs.ampbs.2022.01.003.
- 3) **JM Kurth**, MK Nobu, H Tamaki, N de Jonge, S Berger, MSM Jetten, K Yamamoto, D Mayumi, S Sakata, L Bai, L Cheng, JL Nielsen, Y Kamagata, T Wagner, CU Welte (2021): Methanogenic archaea use a bacteria-like methyltransferase system to demethoxylate aromatic compounds. *ISME J*: 15: 3549–3565. doi: 10.1038/s41396-021-01025-6.
- 4) CU Welte, R de Graaf, P Dalcin Martins, RS Jansen, MSM Jetten, **JM Kurth\*** (2021): A novel methoxydotrophic metabolism discovered in the hyperthermophilic archaeon *Archaeoglobus fulgidus*. *Environ Microbiol* 23: 4017-4033. doi: 10.1111/1462-2920.15546.
- 5) **JM Kurth**, M-C Müller, CU Welte, T Wagner (2021): Structural insights of the methane-generating enzyme in methoxydotrophic methanogenic archaea reveals a restraint gallery of post-translational modifications. *Microorganisms* 9: 837. doi: 10.3390/microorganisms9040837.
- 6) **JM Kurth**, HJM Op den Camp, CU Welte (2020): Several ways one goal —methanogenesis from unconventional substrates. *Appl Microbiol Biotechnol* 104: 6839-6854. doi: 10.1007/s00253-020-10724-7.
- 7) **JM Kurth\***, NT Smit, S Berger, S Schouten, MSM Jetten, CU Welte (2019): Anaerobic methanotrophic archaea of the ANME-2d clade feature lipid composition that differs from other ANME archaea. *FEMS Microbiol Ecol* 95: fiz082. doi: 10.1093/femsec/fiz082.
- 8) **JM Kurth**, JA Brito, J Reuter, A Flegler, T Koch, T Franke, E-M Klein, SF Rowe, JN Butt, K Denkmann, IAC Pereira, M Archer, C Dahl (2016): Electron accepting units of the diheme cytochrome c TsdA, a bifunctional thiosulfate dehydrogenase/tetrathionate reductase. *J Biol Chem* 291: 24804–24818. doi: 10.1074/jbc.M116.753863.
- 9) **JM Kurth**, JN Butt, DJ Kelly, C Dahl (2016): Influence of haem environment on the catalytic properties of the tetrathionate reductase TsdA from *Campylobacter jejuni*. *Biosci Rep* 36: e00422. doi: 10.1042/BSR20160457.
- 10) **JM Kurth\***, C Dahl, JN Butt (2015): Catalytic protein film electrochemistry provides a direct measure of the tetrathionate/thiosulfate reduction potential. *J Am Chem Soc* 137: 13232–13235. doi: 10.1021/jacs.5b08291.

**Non peer-reviewed:** M Preiner, JM Klatt, **JM Kurth** (2023): Neue Forschungsansätze der Umwelt- und Klimamikrobiologie. *BIOspektrum* 29: 101-102.