Curriculum vitae

Julia Kurth

www.linkedin.com/in/julia-kurth-80911692 Orcid: 0000-0002-1221-1230 Twitter: KurthJu1

Academic positions

From 09/2022	Group leader of the Microbial Physiology group at the Future Center Microcosm Earth, University of Marburg, Germany
04/2022-08/2022	Postdoctoral researcher at the Laboratory of Microbiology, Wageningen University & Research, Wageningen, The Netherlands
04/2017-03/2022	Postdoctoral researcher at the Department of Microbiology, Radboud University, Nijmegen, The Netherlands
09/2018-03/2022	Project 2: Investigating novel archaeal metabolisms
04/2017-08/2018	Project 1: Generation of lipid biomarkers for anaerobic methane oxidizers

Academic education

10/2013-03/2017	PhD thesis in Microbiology in the group of PD Dr. Christiane Dahl at the Institute for Microbiology & Biotechnology, University of Bonn
	Topic: The TsdA family of thiosulfate dehydrogenases/tetrathionate reductases
	Grade: Summa cum laude
10/2011-08/2013	Master of Science in Microbiology at the University of Bonn
	Master thesis: Cytochrome <i>bd</i> oxidases in strictly anaerobic bacteria and archaea
	Grade: 1.0, with honors
10/2008-09/2011	Bachelor of Science in Biology at the University of Bonn Bachelor thesis: Studies on the promoter of the ectoin biosynthesis gene cluster Grade: 1.3

Awards, Grants and Fellowships

04/2022	Van Leeuwenhoek Award; 500 €
07/2020 & 11/2019	SIAM talent grant; 2 x 800 €
09/2018-10/2020	DFG Research Fellowship by the German research foundation; primary applicant; 65.000 \in
04/2014-03/2016	Hoechst PhD fellowship of the Aventis Foundation awarded by the Stiftung Stipendienfonds des Verbandes der Chemischen Industrie e.V (VCI); primary applicant; 44.000 €
04/2015 & 03/2015	FEMS Young Scientists Meeting Grant, 2 x 300 €
10/2013-03/2014	Personal fellowship by the Maria von Linden women support program of the University of Bonn, 3.900 \in
01/2013-09/2013	Excellence fellowship "Biology" of the University of Bonn, 2.700 \in

International research experience

08/2020 & 11/2019	Max Planck Institute in Bremen, Germany. Protein crystallization project together with Dr. Tristan Wagner (6 weeks).
06/2018 & 11/2018	Royal Netherlands Institute for Sea Research on Texel, The Netherlands. Lipid analysis project together with Prof. Stefan Schouten (6 weeks).
02/2018-03/2018	Faculty of Engineering and Science at Aalborg University, Denmark. Proteomics project with Prof. Jeppe Lund Nielsen (3 weeks).
11/2015-12/2015	Department of Molecular Biology and Biotechnology at University of Sheffield, U.K. <i>Campylobacter jejuni</i> growth experiments in the group of Prof. David Kelly (4 weeks).
07/2014-08/2014 & 04/2015-06.2015	School of Chemistry at University of East Anglia in Norwich, U.K. Electrochemistry project together with Prof. Julea Butt (12 weeks).

Teaching

10-11/2021, 09- 10/2020, 09- 10/2019, 09-10/2018	Coordinator and lecturer of the MSc course "Microbial Physiology and Metabolism" at Radboud University (highly evaluated with 8.6- 8.9/10 (course) and 8.2-9.2/10 (lecturers performance))
01-03/2020, 01- 03/2019	Lecturing and practicum coordination/supervisor of the BSc course "Physiology of Microorganisms" at Radboud University (evaluated with 7.2/10 (course) and 7.9-8.0/10 (lecturers performance))
11/2017-12/2017	Co-coordinator and supervisor of BSc "Physiology of Microorganisms" practicum at Radboud University (highly evaluated course with 8.2/10)
10/2013-03/2017	Supervision of two master courses ("General and Molecular Microbiology" and "Phototrophic Prokaryotes"; three times) and one bachelor course ("Applied Microbiology and Physiology of Microorganisms"; three times) at the University of Bonn

10/2013-12/2013 Practicum supervisor of the microbiology basic course at the University of Bonn

Conferences and Presentations

08/2022	Oral presentation at the Gordon Research Conference on Molecular Basis of Microbial One-Carbon Metabolism in Southbridge, MA, United State (invited speaker)
03/2022, 03/2021, 03/2019, 03/2018	Oral presentation at the Annual Meeting of the Dutch Association for Microbiology (KNVM) (in 2021 invited speaker)
03/2021, 03/2020, 03/2019, 03/2018, 03/2016	Oral presentation at the Annual Meeting of the Association of General and Applied Microbiology (VAAM)
08/2018	Poster presentation at the Gordon Research Conference and Seminar on Molecular Basis of Microbial One-Carbon Metabolism in Newry, ME United States
07/2015	Attendance at the Lindau Nobel Laureate Meeting in Germany
04/2015	Poster presentation at the Microbial Sulfur Metabolism Meeting in Helsingør, Denmark
03/2015	Oral presentation at the Bacterial Electron Transfer Processes Meeting in Vimeiro, Portugal

Other academic activities

Since 2021	Editorial Board for "Frontiers in Microbiology"
03/2019	Chair of the session "Microbial electron transfer pathways" at the Annual Meeting of the Dutch Association for Microbiology (KNVM)
05/2018	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; Co-reviewer for Environmental Microbiology, Microbiology and Molecular Biology Reviews.

Publications

PEER REVIEWED ARTICLES

- (12) P Dalcin Martins, MJ Echeveste Medrano, A Arshad, <u>JM Kurth</u>, HT Ouboter, HJM Op den Camp, MSM Jetten and CU Welte_(2022): Unraveling nitrogen, sulfur, and carbon metabolic pathways and microbial community transcriptional responses to substrate deprivation and toxicity stresses in a bioreactor mimicking anoxic brackish coastal sediment conditions. *Front Microbiol*: **13**: 798906.
- (11) M Glodowska, CU Welte, <u>JM Kurth</u> (2022): Metabolic potential of anaerobic methane oxidizing archaea for a broad spectrum of electron acceptors. *Adv Microb Physiol*: doi.org/10.1016/bs.ampbs.2022.01.003.

- (10) <u>JM Kurth</u>, MK Nobu, H Tamaki, N de Jonge, S Berger, MSM Jetten, K Yamamoto, D Mayumi, S Sakata, 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.
- (9) CU Welte, R de Graaf, P Dalcin Martins, RS Jansen, MSM Jetten, <u>JM Kurth</u> (2021): A novel methoxydotrophic metabolism discovered in the hyperthermophilic archaeon *Archaeoglobus fulgidus. Environ Microbiol* 23: 4017-4033.
- (8) <u>JM Kurth</u>, 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.
- (7) <u>JM Kurth</u>, HJM Op den Camp, CU Welte (2020): Several ways one goal methanogenesis from unconventional substrates. *Appl Microbiol Biotechnol* **104**: 6839-6854.
- (6) LP Jenner, JM Kurth, S van Helmont, KP Sokol, E Reisner, C Dahl, JM Bradley, JN Butt, MR Cheesman (2019): Heme ligation and redox chemistry in two bacterial thiosulfate dehydrogenase (TsdA) enzymes. J Biol Chem 294:18002-18014.
- (5) <u>JM Kurth</u>, 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.
- (4) <u>JM Kurth</u>, A Schuster, W Seel, S Herresthal, J Simon, C Dahl (2017): TsdC, a unique lipoprotein from *Wolinella succinogenes* that enhances tetrathionate reductase activity of TsdA. *FEMS Microbiol Lett* **364**: fnx003.
- (3) <u>JM Kurth</u>, 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.
- (2) <u>JM Kurth</u>, 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.
- 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.

NON PEER REVIEWED ARTICLES

(1) <u>JM Kurth</u> and C Dahl (2017): Ein altes Paar in neuem Glanz: Thiosulfat und Tetrathionat. *BIOspektrum* **23**: 25-27.