Personal details

Dr. Daan Rogier Speth
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Education

2016	PhD in Microbiology	Radboud University Nijmegen, the Netherlands
2011	MSc in Microbiology	Radboud University Nijmegen, the Netherlands
2009	BSc in Biology	Radboud University Nijmegen, the Netherlands

Positions

2023 – now	Senior Scientist, Centre for Microbiology and Environmental Systems Science, University of Vienna, Vienna, Austria
2021 – 2023	Postdoctoral Researcher, Department of Biogeochemistry, Max Planck Institute for Marine Microbiology, Bremen, Germany
2016 – 2021	Postdoctoral Researcher, Division of Geological and Planetary Sciences, California Institute of Technology, Pasadena, USA
2011 – 2016	Ph.D. Student, Department of Environmental Microbiology, Radboud University Nijmegen, Nijmegen, the Netherlands

Net research experience

Before completion of the doctoral degree: 4 years, 5 months
After completion of the doctoral degree: 9 years, 8 months

Research interests

My research focuses on the application of genomics and other sequence based bioinformatics approaches to questions in microbiology and microbial ecology. During my PhD research, I used the benchtop sequencer available in our lab to sequence many long term enrichment bioreactors. I was also an early adopter and developer of approaches to retrieve metagenome assembled genomes (MAGs). This combination of skills was key to the discovery of complete ammonia oxidizing bacteria in our group, simultaneously with DoME in Vienna (where I now work). I then applied these methods to a full-scale wastewater treatment plant, leading to the first genomic analysis of a partial-nitritation anammox plant. During my first postdoc, I used genomics and geochemical approaches to provide the first description of the microbial community at a newly

discovered hydrothermal vent site in the Gulf of California. In parallel, I developed methods to build reference protein databases, initially to screen two marine oxygen minimum zone datasets, that I later applied to hunt for novel methanogens in all metagenomes in the NCBI SRA. After the advent of global species-dereplicated microbial genome databases, I further developed protein based analysis approaches to take advantage of this wealth of data, currently being integrated in the amino acid sequence toolkit. I also established an in-house genome database that became the foundation for the recently released GlobDB. My current research goals include increasing the knowledge gained from, and thus value of, the sequence data that continues to be generated at unprecedented scale.

Additional selected research achievements

Research Funding Acquisition: Postdoctoral Fellowships

2015 Rubicon Award, Dutch Research Council (NWO), 2 years, $124,000
https://www.nwo.nl/onderzoeksprogrammas/rubicon/toekenningen/toekenningen-rubicon-2015

2016 Texaco Prize Postdoctoral Fellowship, Caltech GPS, 1 year, $62,000
https://www.gps.caltech.edu/about/positions-available/gps-prize-postdoc-information

Awards

2017 Westerdijk Award for best microbial ecology PhD thesis in the Netherlands
https://www.knvm.org/activities/awards-and-grants/westerdijk-award

Teaching and mentoring

2023 - 2025 Lecturer. MSc courses Molecular Phylogeny and Evolution (5 EC, 3x)

2017 - 2019 Instructor, 5-week International Geobiology summer courses (3x)

2013 - 2025 Supervisor, 6-month MSc thesis projects (6x, 2013-2025)

Open science: Public code and databases

Github code repository: https://github.com/dspeth

GlobDB: Species-dereplicated microbial genome database: https://globdb.org/

Invited Talks

2025 Molybdenum and Tungsten enzyme conference, Los Angeles, CA, USA

2024 International Symposium on Microbial Ecology (ISME19), Cape Town, South Africa

2024 Bacterial Electron transfer conference, Alicante, Spain

2024 Invited seminar, HIFMB, Oldenburg, Germany

2021 Invited department seminar, EAWAG, Zürich, Switzerland