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Division of Microbial Ecology
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Research Interests

- Ecophysiology and evolution of nitrogen-cycling microorganisms
- Microbiology of wastewater treatment
- Molecular and isotope methods for studying uncultured microorganisms
- Digital image analysis in microbial ecology and medical microbiology

Professional Experience

since 10/2017	Full Professor, University of Vienna
8/2012 - 9/2017	Associate Professor, University of Vienna
4/2012	Habilitation (<i>venia docendi</i>) in Microbiology obtained at the University of Vienna
12/2010 - 7/2012	Assistant Professor (tenure track), Department of Microbial Ecology, University of Vienna
2/2003 - 11/2010	Assistant Professor (“Universitätsassistent”), Department of Microbial Ecology, University of Vienna
4/2002 - 6/2002	Research visit at the Department of Microbiology, University of Queensland, Brisbane, Australia
10/2001 - 1/2003	Post-doctoral fellow, Department of Microbiology, Technische Universität München, Germany

Education

18.09.2001	Dissertation (Dr. rer. nat), grade 1.1 (<i>magna cum laude</i>), Technische Universität München, Germany
2/1998 - 9/2001	PhD studies, Department of Microbiology, Technische Universität München, Germany (thesis: “Population structure and functional analyses, by in situ techniques, of nitrifying bacteria in wastewater treatment plants”)
26.09.1997	Diploma in Biology, grade 1.0 (“Mit Auszeichnung”, “with distinction”), University of Technology of the Rhineland, Aachen, Germany
2/1995 - 4/1995	Internship at the Department of Microbiology, University of Hawaii at Manoa, Honolulu, HI, USA
1990 - 1997	Studies in Biology, University of Technology of the Rhineland, Aachen, Germany, and University of Cologne, Germany

Honors and Awards

- 2016 *ISME-IWA Bio Cluster Award*, Grand Prize
- 2016 *Distinguished Track Lecturer*, Ecological and Evolutionary Science Track, ASM Microbe 2016, Boston, USA
- 2009 *Wiener Zukunftspreis (Vienna Future Award)* of the City of Vienna and the *News Magazine*
- 2006 *Focus of Excellence* award of the Faculty of Life Sciences, University of Vienna, Austria
- 1997 *Springorum* medal of the University of Technology of the Rhineland, Aachen

Editorial and Reviewing Activities

since 2019 Topic Editor of *Frontiers in Microbiology*, research topic “Ecology and Physiology of Nitrification”

since 2017 Editorial Board member of *Environmental Microbiology*

2017 - 2019 Editorial Board member of *PeerJ*

2013 - 2016 Editorial Board member of *Applied and Environmental Microbiology*

2007 – 2018 Editorial Board member of *The ISME Journal*

2006 – 2012 Associated Editor of *Microbiology* (SGM)

2006 – 2007 Editorial Board member of *Microbial Ecology*

Ad hoc referee for diverse journals including *Science*, *Nature Microbiology*, *Nature Geosciences*, *Nature Reviews Microbiology*, *PNAS*, *Trends in Microbiology*, *Trends in Biotechnology*, *FEMS Microbiology Ecology*, *Systematic and Applied Microbiology*, *Water Research*

Grant proposal reviewer for funding agencies including *NSF*, *European Research Council (ERC)*, *BSF*, *Human Frontier Science Program*, *NWO Research Council for Earth and Life Sciences*

Selected Professional Activities

since 2018 Head of the “Comammox Research Platform” at the University of Vienna

2017 Member of the Scientific Committee, 5th How Dead is Dead? Conference, Vienna, Austria (September 6-8, 2017)

since 2017 Member of the Board of Experts, Austrian Microbiome Initiative (AMICI)

2016 - 2017 Co-chair and co-organizer (with Christa Schleper and Michael Wagner) of the 5th International Conference on Nitrification (ICoN5), Vienna, Austria (July 23-27, 2017)

2016 Session convener at the 16th International Symposium on Microbial Ecology (ISME-16), Montreal, Canada (August 21-26, 2016)

2014 - 2015 Member of the Scientific Advisory Committee and session convener, 4th International Conference on Nitrification (ICoN4), Edmonton, Canada (June 28-July 1, 2015)

2014 Session convener at the 15th International Symposium on Microbial Ecology (ISME-15), Seoul, South Korea (August 24-29, 2014)

2013 - 2014 Member of the Local Organizing Committee for the Biofilms 6 conference, Vienna, Austria (May 11-13, 2014)

2013 - 2015 Member of the university-wide Curricular Workgroup for Teacher Education (*Curriculare Arbeitsgruppe LehrerInnenbildung Neu*), University of Vienna

2011 - 2013 Member of the Senate of the University of Vienna

2004 - 2006	Member of the Local Organizing Committee for the 11 th Symposium on Microbial Ecology (ISME-11), Vienna, Austria (August 20-25, 2006)
5/2006, 10/2010, 10/2012	Lecturer at the international workshop “Microbial Ecology in Wastewater Treatment”, Aalborg University, Denmark
6/2012	Lecturer at the international “Advanced Course on Environmental Biotechnology”, TU Delft, The Netherlands
6/2011	Lecturer at the “1 st Bremen FISH Camp (international workshop on Fluorescence <i>in situ</i> Hybridization)”, Max-Planck Institute for Marine Microbiology, Bremen, Germany
since 1999	Co-organizer, lecturer, and supervisor at the annual “International FISH Course”, Technische Universität München, Germany, and University of Vienna, Austria
since 1999	Developer of digital image analysis software for fluorescence and confocal microscopy, which has been used by researchers in microbiology, medicine, and other sciences in more than 350 published studies

Teaching Activities and Supervision of Graduate Students

Over 100 courses in bachelor and master curricula at the University of Vienna since 2003.

Lectures: Biodiversity and molecular ecology of microorganisms; Environmental sciences lecture (topic: biological wastewater treatment and nitrification)

Seminars: Current topics in molecular microbial ecology and evolution, Advances in microbial ecology, Field trips in microbiology, Seminar in environmental sciences

Lab courses: Fluorescence *in situ* hybridization, Phylogeny of prokaryotes

Served as **main supervisor and co-supervisor of 11 postdocs, 13 PhD students, and 21 diploma/master students** at the University of Vienna.

Member of PhD thesis committees of Dennis Fink, 2010-2011 (University of Bremen, Germany), Jessika Füssel, 2010-2014 (University of Bremen, Germany), Irene Schaffner, 2013-2017 (University of Natural Resources and Life Sciences, Vienna), Katharina Kitzinger, 2015-2019 (University of Bremen, Germany and University of Vienna, Austria), Franziska Klotz, since 2017 (University of Constance, Germany), Niek Stortenbeker, 2017-2019 (University of Bremen, Germany), Daniel Schmidt, since 2019 (University of Natural Resources and Life Sciences, Vienna), and Cristina Alcaraz, since 2021 (University of Vienna).

External PhD thesis reviewer/opponent of Rheanne Pickering, 2008 (Newcastle University, UK), Cristina Moraru, 2010 (University of Bremen, Germany), Jessika Füssel, 2014 (University of Bremen, Germany), Boris Nowka, 2014 (University of Hamburg, Germany), Alejandro Palomo, 2017 (Technical University of Denmark), Monica Conthe, 2018 (TU Delft, The Netherlands), Lianna Poghosyan, 2020 (Nijmegen University, The Netherlands), and Aniela Mundinger, 2020 (Nijmegen University, The Netherlands).

Publication Output

Author on **87 papers** in peer-reviewed journals (including 4 papers in *Nature*, 2 papers in *Science*, and 5 papers in *PNAS*). Received in total **11,890 citations; h-index 49** (ISI Web of Science) [Google Scholar: **17,181 citations; h-index 57**].

Author of **11 book chapters** and Co-Editor of 1 book.

A list of publications and citation data is available at:

www.microbial-ecology.net/daims and www.researcherid.com/rid/I-8410-2012

Invited Talks

since 2002 **59 invited talks** at international conferences, workshops, and university seminars in 17 countries

A list of oral presentations is available at: www.microbial-ecology.net/daims

Patents

since 2006 1 patent (EP 1903010 A1)

Funding

Projects as principal investigator

- FWF DOC 69-B. Biology of macroscopic bacterial consortia from karst cave streams [2020-2024]. Project in the FWF-funded doctoral school “Microbial symbioses in dynamic environments: Metabolic interplay and novel interactions”
- University of Vienna. The Comammox Research Platform. €548,179 [2018-2021]
- FWF P30570-B21. Physiology and environmental importance of complete ammonia oxidizers (comammox). €390,138 [2017-2021]
- FWF W1257. Post-genomic characterization of *Nitrospina*, a major marine nitrite oxidizer. €196,682 [2016-2020]. Project in the FWF-funded doctoral school “Microbial Nitrogen Cycling – From Single Cells to Ecosystems”
- FWF P27319-B21. Microdiversity of uncultured nitrite-oxidizing bacteria. €424,000 [2015-2019]
- FWF P25231-B21. Illuminating the ecology of nitrite-oxidizing bacteria in soil and aquatic ecosystems. €370,000 [2013-2018]
- WWTF LS09-40. Multiphasic comparative analysis of key nitrite-oxidizing bacteria in wastewater treatment plants. €630,000 [2010-2014]
- FWF/ESF I44. Project in the EuroDiversity consortium “COMIX - Coupling biofilm diversity and ecosystem functioning: The role of communication and mixing in microbial landscapes”. €192,000 [2006-2011]
- FWF S100. Project in the National Research Network (NFN) “MICDIF - Linking microbial diversity and ecosystem functions across scales and interfaces”; project title “Functional diversity of nitrifying and heterotrophic microorganisms”. €299,000 [2007-2010]
- WWTF LS216. Genomics and ecology of novel uncultured nitrite-oxidizing bacteria in natural and engineered surroundings. €460,000 [2004-2008]

Projects as co-PI

- City of Vienna. Nachweis von SARS-CoV-2 Genom im Abwasser der Stadt Wien (detection of SARS-CoV-2 in wastewater of Vienna) (PI Norbert Kreuzinger, Technical University Vienna). €25,000 [2020-2021].
- FWF T 938. Ecology of novel nitrite-oxidizers in the phylum Chloroflexi (PI Anne Daebeler). €230,010 [2017-2020]. Project in the FWF Hertha Firnberg program for female post-docs.
- DOE-JGI CSP1497. Raman-based microcolony genomics and transcriptomics for studying microevolution and ecology of nitrifiers. In-kind contributions (Large scale next generation sequencing) [2013-2015]
- University of Vienna. Graduate school (*Initiativkolleg*) “Symbiotic Interactions”. €64,500 of a total amount of €247,000 allocated to the Division of Microbial Ecology [2007-2010]
- University of Vienna. Project in the University Research Focus “Symbiosis research and principles of molecular recognition”, project title “Molecular Interactions between

intracellular bacteria and their eukaryotic host cells”. €65,000 of a total amount of €450,000 [2006-2009]

Projects as host

- University of Vienna. PhD Completion Grant to Christiane Gruber-Dorninger [2014-2015]
- FWF P24101. Illuminating the Ecophysiology of *Nitrotoga*-like NOB (PI Sebastian Lücker). €181,000 [2012-2014]

Last updated: March 18, 2021