

## Univ.-Prof. Dr. rer. nat. Holger Daims

Division of Microbial Ecology  
Centre for Microbiology and Environmental Systems Science  
University of Vienna  
Djerassiplatz 1, 1030 Vienna, Austria  
Website: <https://dome.csb.univie.ac.at/people/holger-daims>  
ResearcherID: I-8410-2012  
ORCID ID: 0000-0002-4195-0913  
Scopus Author ID: 6602614813

### Research Interests

- Ecophysiology and evolution of nitrogen-cycling microorganisms
- Microbiology of wastewater treatment
- Molecular and isotope methods for studying uncultured microorganisms
- Imaging tools and 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

- 2021                    *Highly Cited Researcher* (Clarivate)
- 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, 5<sup>th</sup> 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 5<sup>th</sup> International Conference on Nitrification (ICoN5), Vienna, Austria (July 23-27, 2017)
- 2016                    Session convener at the 16<sup>th</sup> International Symposium on Microbial Ecology (ISME-16), Montreal, Canada (August 21-26, 2016)
- 2014 - 2015           Member of the Scientific Advisory Committee and session convener, 4<sup>th</sup> International Conference on Nitrification (ICoN4), Edmonton, Canada (June 28-July 1, 2015)
- 2014                    Session convener at the 15<sup>th</sup> 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 <sup>th</sup> 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 <sup>st</sup> 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 **91 papers** in peer-reviewed journals (including 4 papers in *Nature*, 2 papers in *Science*, and 5 papers in *PNAS*). Received in total **13,370 citations; h-index 53** (Clarivate Web of Science) [Google Scholar: **18,986 citations; h-index 59**].

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

### Invited Talks

since 2002            **60 invited talks** at international conferences, workshops, and university seminars in 18 countries

### 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. € 1,035,089.78 [2018-2025]
- FWF P30570-B21. Physiology and environmental importance of complete ammonia oxidizers (comammox). € 390,138 [2017-2022]
- 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: February 14, 2022

## Invited Oral Presentations on Conferences, Workshops, and Seminars

1. **Daims H.** Novel insights into the ecophysiology of nitrifying microorganisms. JAMS 10<sup>th</sup> Annual Symposium, Kuala Lumpur, Malaysia (23.-24. August 2021). Online presentation.
2. **Daims H.** Stickstoff-Eliminierung in der Abwasserreinigung: Überraschungen aus der Mikrobiologie (Nitrogen elimination in wastewater treatment: surprises from microbiology). 40. AssistentInnen treffen der deutschsprachigen siedlungswasserwirtschaftlichen Institute, TU+BOKU Vienna, Austria (4.-7. September 2019).
3. **Daims H.** Metabolic versatility, complete ammonia oxidizers, And more: A new perspective on the nitrifying microorganisms. 8<sup>th</sup> Congress of European Microbiologists (FEMS 2019), Glasgow, UK (7.-11. July 2019)
4. **Daims H.** A new picture of major players in the nitrogen cycle: Genome resolved metagenomics as the key to surprising discoveries. Annual Conference 2019 of the Association for General and Applied Microbiology, Mainz, Germany (17.-20. March 2019).
5. **Daims H.** Metabolic versatility, complete ammonia oxidizers, and more: A new perspective on the nitrifying microorganisms. Seminar at the Dept. of Microbiology, University of Constance, Germany (5. November 2018).
6. **Daims H.** Stickstoffkreisläufe in der Abwasserreinigung – neue und bewährte Wege (Nitrogen cycles in sewage treatment – new and established paths). Seminar Aktuelle biologische Methoden und Verfahren in der Wassergütemirtschaft, TU Vienna, Austria (27.-28. February 2018).
7. **Daims H.** Sleep, stress and the Black Queen: Microbial hidden activities and cooperation. Fifth How Dead is Dead? Conference, Vienna, Austria (6.-8. September 2017).
8. **Daims H.** Complete nitrification by one organism: The discovery and characterization of comammox. IWA World Water Congress, Brisbane, Australia (9.-14. October 2016).
9. **Daims H.** Microcolony mini-metagenomics of active nitrifiers. Seminar at the Australian Centre for Ecogenomics, University of Queensland, Brisbane, Australia (11. October 2016).
10. **Daims H.** Complete nitrification by one organism: The discovery and characterization of comammox. **Session convener.** 16<sup>th</sup> International Symposium on Microbial Ecology (ISME-16), Montreal, Canada (21.-26. August 2016).
11. **Daims H.** Roundtable lecturer on the topic “Ecology-based engineering of natural microbial communities: Nitrification as an example”. 16<sup>th</sup> International Symposium on Microbial Ecology (ISME-16), Montreal, Canada (21.-26. August 2016).
12. **Daims H.** Complete nitrification by one organism: The discovery and characterization of comammox. **Distinguished Track Lecturer, Ecological and Evolutionary Science Track (Keynote lecture).** ASM Microbe 2016, Boston, USA (16.-20. June 2016).
13. **Daims H.** Repainting our picture of nitrite-oxidizing bacteria. Seminar at the Dept. of Chemistry and Bioscience, Aalborg University. Aalborg, Denmark (14. January 2016).
14. **Daims H.** Flexible friends or foes: Recent insights add fresh paint to our picture of nitrite-oxidizing bacteria. **Plenary lecture and session convener.** 4<sup>th</sup> International Conference on Nitrification (ICoN4), Edmonton, Canada (28. June-1. July 2015).
15. **Daims H.** Raman-based sorting of microbes with defined functional properties for single-cell genomics. 3<sup>rd</sup> Microbial Single Cell Genomics Workshop, Boothbay Harbor, USA (14.-18. June 2015).
16. **Daims H.** Tales of partnership and crime: Interactions of autotrophic and heterotrophic microorganisms. **Session convener.** 15<sup>th</sup> International Symposium on Microbial Ecology (ISME-15), Seoul, South Korea (24.-29. August 2014).
17. **Daims H.** Surprising versatility and multiple roots: News on the ecophysiology and evolution of nitrite-oxidizing bacteria. 114<sup>th</sup> ASM General Meeting, Boston, USA (17-20. May 2014).
18. **Daims H.** Surprising versatility and multiple roots: News on the ecophysiology and evolution of nitrite-oxidizing bacteria. Seminar at the Dept. of Microbiology, University of Hamburg, Germany (11. April 2014).
19. **Daims H.** Diversity, ecophysiology, and evolution of nitrite-oxidizing bacteria: A glimpse into a bag of surprises. **Plenary lecture.** 3<sup>rd</sup> International Conference on Nitrification (ICoN3), Tokyo, Japan (2.-5. September 2013).
20. **Daims H.** Ecophysiology and evolution of nitrite-oxidizing bacteria: News on the 'Big Unknown'

- of the nitrogen cycle. Seminar at the 'Microbial Ecology Group', University of Michigan, Ann Arbor, USA (11. July 2013).
21. **Daims H.** Surprising diversity and unexpected functions: Features of nitrite-oxidizing bacteria revealed by "Omics" and in situ tools. **Keynote lecture.** 5<sup>th</sup> International Conference on Microbial Ecology and Water Engineering, Ann Arbor, USA (7.-10. July 2013).
  22. **Daims H.** Ecophysiology and evolution of nitrite-oxidizing bacteria: News on the 'Big Unknown' of the nitrogen cycle. Seminar at the Dept. of Microbiology, University of Constance, Germany (17. June 2013).
  23. **Daims H.** Molecular biology and interactions of nitrite-oxidizing bacteria: A glance on the second step of nitrification. 2<sup>nd</sup> Symposium on Biological Nitrogen Removal Mechanisms and Process Analysis, Hsinchu, Taiwan (14.-15. January 2013).
  24. **Daims, H.** Nitrification: Ammonia- and Nitrite-Oxidizing Bacteria. Ph.D. course on Microbial Ecology in Wastewater Treatment, Aalborg, Denmark (23.-26. October 2012).
  25. **Daims H.** Microbial molecular ecology of nitrification. Advanced Course on Environmental Biotechnology, TU Delft, The Netherlands (20. June 2012).
  26. **Daims H.** Ecophysiology and evolution of nitrite-oxidizing bacteria: News on the *Big Unknown* of the N-cycle. SGM Spring Conference, Dublin, Ireland (26-29. March 2012).
  27. **Daims H.** Digital image analysis of microorganisms: From counting to stereology. First Bremen FISH Camp, Bremen, Germany (14-24. June 2011).
  28. **Daims H.** Ecophysiology and genomics of key nitrite-oxidizing bacteria. Annual Meeting of the Dutch Society for Microbiology, Arnhem, The Netherlands (18.-20. April 2011).
  29. **Daims H.** Novel insights into the ecophysiology and evolution of nitrite-oxidizing bacteria. Seminar at the Eidgenössische Anstalt für Wasserversorgung, Abwasserreinigung und Gewässerschutz (Eawag), Zürich, Switzerland (November 2010).
  30. **Daims H.** Metagenomics illuminate the ecophysiology and evolution of nitrite-oxidizing bacteria. Seminar at the Department of Biological Sciences, Microbiology, University of Aarhus, Denmark (November 2010).
  31. **Daims H.** Nitrification: Physiology, niche differentiation, and interactions of key players. Workshop "Microbial Ecology in Wastewater Treatment", Dept. of Biotechnology, Chemistry and Environmental Engineering, Aalborg University, Denmark (October 2010).
  32. **Daims H.** Quantitative FISH and new variations of (F)ISH. 13<sup>th</sup> International Symposium on Microbial Ecology (ISME-13), Seattle, USA (August 2010).
  33. **Daims H.** Genomics and functional analyses of nitrite-oxidizing bacteria. Seminar at the Max-Planck-Institute for Marine Microbiology, Bremen, Germany (26. May 2010).
  34. **Daims H.** How to apply genomic info to predict the ecological role of nitrifiers. The Water Research Conference, Lisbon, Portugal (April 2010).
  35. **Daims H.** Ecophysiology and genomics of nitrifying microbes in natural and engineered systems. Seminar at the Dept. of Environmental Geosciences, University of Vienna, Austria (8. March 2010).
  36. **Daims H.** Wastewater Treatment: A Useful Model System for Microbial Ecology. European Science Foundation Workshop "EuroMicrobe", Hilversum, The Netherlands (December 2009).
  37. **Daims H.** Single cell tools to investigate microbial physiology. Biofilms 2009 Meeting of the American Society for Microbiology, Cancun, Mexico (November 2009).
  38. **Daims H.** Ecology and evolution of nitrite oxidizers: Insights from *in situ* tools and environmental genomics. Autumn Meeting of the Society for General Microbiology, Edinburgh, United Kingdom (September 2009).
  39. **Daims H.** *In situ* diversity and niche adaptations of nitrite-oxidizing bacteria. 1<sup>st</sup> International Conference on Nitrification (ICoN1), Louisville, Kentucky, USA (July 2009).
  40. **Daims H.** Environmental genomics and in situ physiology of key nitrifying bacteria in engineered systems and hot springs. Seminar at the Department of Microbiology, University Zürich, Switzerland (March 2009).
  41. **Daims H.** Ecophysiology and genomics of *Nitrospira*, the key nitrite oxidizers in natural and engineered ecosystems. **Plenary lecture.** 4<sup>th</sup> Congress of the Slovenian Microbiological Society with International Participation, Portoroz, Slovenia (November 2008).
  42. **Daims H.** Environmental genomics illuminates the biology of key nitrite-oxidizing bacteria.

- Conference opening lecture.** N-Cycle Meeting, Nijmegen, Netherlands (September 2008).
43. **Daims H.** Nitrification in biological wastewater treatment: Insights based on molecular approaches. 162<sup>nd</sup> Meeting of the Society for General Microbiology, Edinburgh, United Kingdom (March 31, 2008).
  44. **Daims H.** Structure-function analysis of microbial biofilms. ESF workshop "Valuing biofilm services: The beauty and the beast", Lunz am See, Austria (September 2007).
  45. **Daims H.** Molecular biological tools for analyzing structure-function relationships in mixed microbial environments. ECOSERV workshop on state-of-the-art in wastewater treatment and environmental impact, University of Newcastle upon Tyne, UK (March 2007).
  46. **Daims H.** Enigmatic uncultured bacteria in nature and biotechnology. Seminar at Genoscope, Evry, France (January 2007).
  47. **Daims H.** Ecology and genomics of key nitrite oxidizers active in natural and engineered habitats. 11<sup>th</sup> International Symposium on Microbial Ecology (ISME-11), Vienna, Austria (August 2006).
  48. **Daims H.** Genomics, ecophysiology and interactions of yet uncultured nitrifying bacteria. Summer conference of the Society for Applied Microbiology, Edinburgh, United Kingdom (July 2006).
  49. **Daims H.** "Nitrification and Anammox" and "Environmental Genomics" (two talks). Dept. of Biotechnology, Chemistry and Environmental Engineering, Aalborg University, Denmark (May 2006).
  50. **Daims H.** "Who you are and what you do": FISH and related methods for characterizing complex microbial communities. Seminar at the Institute of Microbiology and Hygiene, Charité, Berlin, Germany (March 2006).
  51. **Daims H.** Biodiversity and ecophysiology of N-cycle bacteria. COST Action 856 (Ecological Aspects of Denitrification, with Emphasis on Agriculture) management committee meeting & workshop, Nijmegen, the Netherlands (March 2006).
  52. **Daims H.** and Wagner M. The Use of FISH, digital image analysis, and MAR techniques to analyze structure and physiology of biofilm communities. Philips Oral Healthcare biofilm symposium, Los Angeles, USA (October 2005).
  53. **Daims H.** Molekulare Methoden zur Analyse der Biodiversität und Funktion nicht kultivierter Mikroorganismen (Molecular methods for analysing biodiversity and function of uncultured microorganisms). Workshop "Perspektiven molekularer und isotopischer Methoden zum Nachweis des natürlichen Schadstoffabbaus in Böden" organized by the German Federal Ministry of Education and Research and DECHEMA, Braunschweig, Germany (September 2005).
  54. **Daims H.,** Le Paslier D, Spieck E, Wagner M. Ecophysiology and genomics of nitrite-oxidizing bacteria important for wastewater treatment. 12<sup>th</sup> European Congress on Biotechnology, Copenhagen, Denmark (August 2005).
  55. **Daims H.** From biodiversity to environmental genomics: Microbiology of nitrite-oxidizing *Nitrospira*-like bacteria. Seminar at the University of Natural Resources and Applied Life Sciences, Vienna, Austria (March 2005).
  56. **Daims H.** Biodiversity and ecophysiology of *Nitrospira*-like bacteria. Seminar at the Austrian Research Centers, Seibersdorf, Austria (January 2005).
  57. **Daims H.** From 16S rRNA to environmental genomics: microbiology of *Nitrospira*-like bacteria. Seminar at the Environmental Engineering group intramural meeting, University of Newcastle upon Tyne, UK (November 2004).
  58. **Daims H.** Ecology and genomics of uncultured autotrophic nitrite-oxidizers and anaerobic ammonium oxidizers. Gordon Research Conference on the Molecular Basis of Microbial One-Carbon Metabolism, Mt. Holyoke College, Massachusetts, USA (August 2004).
  59. **Daims H,** Wagner M. Microbial Structure and Community Structure of Flocs. Workshop on Flocculation in Natural and Engineered Systems, Burlington, Ontario, Canada (September 2003).
  60. **Daims H.** Population structure and functional analyses, by *in situ* techniques, of nitrifying bacteria in wastewater treatment plants. Seminar at the Advanced Wastewater Management Centre, University of Queensland, Brisbane, Australia (May 2002).

## Publication List

Total number of citations according to Web of Science (as of February 2022): 13,370

h-Index: 53

### Publications in Peer-Reviewed Journals

(\* indicates corresponding authorship)

1. Liu S, Jung MY, Zhang S, Wagner M, **Daims H\***, Wanek W (2021). Nitrogen kinetic isotope effects of nitrification by the complete ammonia oxidizer *Nitrospira inopinata*. *mSphere* 6:e0063421.
2. Gottshall EY\*, Bryson SJ, Cogert KI, Landreau M, Sedlacek CJ, Stahl DA, **Daims H**, Winkler M (2021). Sustained nitrogen loss in a symbiotic association of Comammox *Nitrospira* and Anammox bacteria. *Water Res.* 202: 117426.
3. Jung MY\*, Sedlacek CJ\*, Kits KD, Mueller AJ, Rhee SK, Lhink L, Nicol GW, Bayer B, Lehtovirta-Morley L, Wright C, De La Torre JR, Herbold CW, Pjevac P, **Daims H**, Wagner M (2021). Ammonia-oxidizing archaea possess a wide range of cellular ammonia affinities. *ISME J.*, in press.
4. De La Fuente MJ, de la Iglesia R, Fariás L, **Daims H**, Lukumbuzya M, Vargas I (2021). Electrochemical enrichment of marine denitrifying bacteria to enhance nitrate metabolization in seawater. *J. Environ. Chem. Eng.* 9: 105604.
5. Mueller AJ, Jung MY, Strachan CR, Herbold CW, Kirkegaard RH, Wagner M, **Daims H\*** (2021). Genomic and kinetic analysis of novel Nitrospinae enriched by cell sorting. *ISME J.* 15: 732–745.
6. Lukumbuzya M, Kristensen JM, Kitzinger K, Pommerening-Roser A, Nielsen PH, Wagner M, **Daims H\***, Pjevac P (2020). A refined set of rRNA-targeted oligonucleotide probes for in situ detection and quantification of ammonia-oxidizing bacteria. *Water Res.* 186: 116372.
7. Daebeler A, Kitzinger K, Koch H, Herbold CW, Steinfeder M, Schwarz J, Zechmeister T, Karst SM, Albertsen M, Nielsen PH, Wagner M, **Daims H\*** (2020). Exploring the upper pH limits of nitrite oxidation: diversity, ecophysiology, and adaptive traits of haloalkalitolerant *Nitrospira*. *ISME J.* 12: 2967-2979.
8. Yang Y, **Daims H**, Liu Y, Herbold CW, Pjevac P, Lin JG, Li M\*, Gu JD\* (2020). Activity and metabolic versatility of complete ammonia oxidizers in full-scale wastewater treatment systems. *mBio* 11: e03175-19.
9. Kitzinger K\*, Marchant HK\*, Bristow LA, Herbold CW, Padilla CC, Kidane AT, Littmann S, **Daims H**, Pjevac P, Stewart FJ, Wagner M, Kuypers MMM (2020). Single cell analyses reveal contrasting life strategies of the two main nitrifiers in the ocean. *Nat. Commun.* 11: 767.
10. Sedlacek CJ\*, Giguere AT, Dobie MD, Mellbye BL, Ferrell RV, Woebken D, Sayavedra-Soto LA, Bottomley PJ, **Daims H**, Wagner M, Pjevac P (2020). Transcriptomic response of *Nitrosomonas europaea* transitioned from ammonia- to oxygen-limited steady-state growth. *mSystems* 5: e00562-19.
11. Riva A, Kuzyk O, Forsberg E, Siuzdak G, Pfann C, Herbold C, **Daims H**, Loy A, Warth B, Berry D\* (2019). A fiber-deprived diet disturbs the fine-scale spatial architecture of the murine colon microbiome. *Nat. Commun.* 10: 4366.
12. Lukumbuzya M, Schmid M, Pjevac P\*, **Daims H** (2019). A multicolor fluorescence *in situ* hybridization approach using an extended set of fluorophores to visualize microorganisms. *Front. Microbiol.* 10: 1383.
13. Kits KD, Jung M-Y, Vierheilig J, Pjevac P, Sedlacek CJ, Liu S, Herbold CW, Stein LY, Richter A, Wissel H, Brüggemann N, Wagner M\*, **Daims H** (2019). Low yield and abiotic origin of N<sub>2</sub>O formed by the complete nitrifier *Nitrospira inopinata*. *Nat. Commun.* 10:1836.

14. Lee KS, Palatinszky M, Pereira FC, Nguyen J, Fernandez VI, Mueller AJ, Menolascina F, **Daims H**, Berry D, Wagner M, Stocker R\* (2019). An automated Raman-based platform for the sorting of live cells by functional properties. *Nat. Microbiol.* 4: 1035-1048.
15. Sakoula D, Nowka B, Spieck E, **Daims H**, Lücker S\* (2018). The draft genome sequence of “*Nitrospira lenta*” strain BS10, a nitrite oxidizing bacterium isolated from activated sludge. *Stand. Genomic Sci.* 13: 32.
16. Kitzinger K, Koch H, Lücker S, Sedlacek CJ, Herbold C, Schwarz J, Daebeler A, Mueller AJ, Lukumbuzya M, Romano S, Leisch N, Karst SM, Kirkegaard R, Albertsen M, Nielsen PH, Wagner M, **Daims H\*** (2018). Characterization of the first “*Candidatus Nitrotoga*” isolate reveals metabolic versatility and separate evolution of widespread nitrite-oxidizing bacteria. *mBio* 9: e01186-18.
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#### Book Chapters and Other Publications

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