

# CURRICULUM VITAE - ANNE DAEBELER

## RESEARCH INTERESTS

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As a microbial ecologist I analyze the composition, diversity, and function of microbial communities with the objective to elucidate ecological relations between microorganisms and their role in biogeochemical cycles. Of particular interest in my previous and current research projects are nitrifying and methane-cycling prokaryotes. By studying these organisms in their natural habitats, in controlled microcosm experiments as well as in culture I focus on their importance for ecosystem functioning, their ecophysiology and metabolic potentials. Furthermore, I combine lab and field experiments with modeling of microbial processes in order to provide a mechanistic and predictive understanding of microbial responses to global change. Recently, I have started to analyse the genomes of novel nitrifiers which I enriched from saline lakes and hot springs with focus on understanding the adaptive mechanisms to extreme environmental conditions such as elevated pH and temperature.

## PROFESSIONAL EXPERIENCE

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| 08/ 2016 - current  | 'Back to Research' stipend of the University of Vienna, AU  |
| 02/ 2016 - 07/2016  | PostDoc at the Department of Microbiology and Ecosystem Science<br>Division of Microbial Ecology<br>University of Vienna, AU <ul style="list-style-type: none"><li>◦ Continuation of my research project: <i>Illuminating the Ecology of Nitrite-oxidizing bacteria</i></li></ul>   |
| 03/ 2015 - 01/2016  | Parental leave  |
| 12/ 2013 - 10/2015  | PostDoc at the Department of Microbiology and Ecosystem Science<br>Division of Microbial Ecology<br>University of Vienna, AU <ul style="list-style-type: none"><li>◦ Title of research project: <i>Illuminating the Ecology of Nitrite-oxidizing bacteria</i></li></ul>   |
| 10/ 2010 - 07/2013  | Editor-in-chief of the NIOOcoop, Magazine for the employees of the Netherlands Institute for Ecology (NIOO-KNAW)<br>Wageningen, NL <ul style="list-style-type: none"><li>◦ Managing editorial contents, guidance and leadership of the editorial board, organisation of lectures and workshops to improve writing skills amongst NIOO employees</li></ul> |
| 05/ 2009 - 07/2013  | Ph.D. student at the Netherlands Institute of Ecology (NIOO-KNAW)<br>Department of Microbial Ecology<br>Wageningen, NL <ul style="list-style-type: none"><li>◦ Title of research project: <i>Archaeal ammonia oxidation in volcanic grassland soils of Iceland - Effects of temperature and N availability</i></li></ul>                                  |
| 04/ 2009 - 07/ 2009 | Research assistant at the Max Planck Institute for Terrestrial Microbiology<br>Marburg, GER <ul style="list-style-type: none"><li>◦ Molecular and analytical research work at the department of biogeochemistry</li></ul>   |
| 09/ 2007 - 12/ 2007 | Internship at the Netherlands Institute of Ecology, Centre for Limnology<br>Department for Microbial Wetland Ecology<br>Nieuwersluis, NL <ul style="list-style-type: none"><li>◦ Title of research project: <i>"Effect of grazing waterfowl and physico-chemistry on methanotrophic communities in fresh water sediments"</i></li></ul>                   |

## EDUCATION

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- 05/ 2008 - 04/ 2009     Diploma thesis at the  
Max Planck Institute for Terrestrial Microbiology  
Department of Biogeochemistry; Workgroup of Prof. Dr. Peter Frenzel  
Marburg, GER
- Title of Diploma thesis: “*Methanogenesis and methanogenic populations in Chinese rice field soils. Activity, structure and dynamics of methanogenic archaea*”
- 10/ 2002 - 04/ 2009     Technical University of Dresden, Germany  
"Diplom" student of Biology, Modules of intense studies: Microbiology, Ecology and Botany
- Final grade on "Diplom Biologin" degree: 1.2 (excellent)
- 02/ 2005 - 08/ 2007     Technical University of Dresden, Germany  
Second major in communication science (extra credit seminars, workshops and lectures)
- Final grade: 1.3 (excellent)

## PUBLICATIONS

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P. Pjevac, C. Schauburger, L. Poghosyan, C.W. Herbold, M.A.H.J. van Kessel, **A. Daebeler**, M. Steinberger, M.S.M. Jetten, S. Lückner, M. Wagner, H. Daims (submitted; available at bioRxiv: <http://biorxiv.org/content/early/2016/12/27/096891>). *AmoA*-targeted polymerase chain reaction primers for the specific detection and quantification of comammox Nitrospira in the environment.

**Daebeler, A.**, Bodelier, P.L.E., Hefting, M.M., Rütting, T., Jia, Z. and Laanbroek, H.J. Soil warming and fertilization altered rates of nitrogen transformation processes and selected for adapted ammonia-oxidizing archaea in sub-arctic grassland soil. (2017) *Soil Biology and Biochemistry* 107, 114-124.

Ho, A., Angel, R., Veraart, A.J., **Daebeler, A.**, Jia, Z., Sang Yoon, K., Kerckhof, F.M., Boon, N., Bodelier, P.L.E. Biotic Interactions in Microbial Communities as Modulators of Biogeochemical Processes: Methanotrophy as a Model System. (2016) *Frontiers in Microbiology* 7:1285; doi: <http://dx.doi.org/10.3389/fmicb.2016.01285>.

**Daebeler, A.**, Bodelier, P.L.E., Hefting, M.M. and Laanbroek, H.J. (2015). Ammonia-limited conditions cause of Thaumarchaeal dominance in volcanic grassland soil. *FEMS Microbiology Ecology* 91-3; doi: 10.1093/femsec/fiv014.

**Daebeler, A.**, Bodelier, P.L.E., Hefting, M.M., Jia, Z. and Laanbroek, H.J. (2014). Interactions between Thaumarchaea, Nitrospira and methanotrophs modulate autotrophic nitrification in volcanic grassland soil. *The ISME Journal* 8, 2397–2410; doi: 10.1038/ismej.2014.81.

**Daebeler, A.**, Gansen, M. and Frenzel, P. (2013). Methyl fluoride affects methanogenesis rather than community composition of methanogenic archaea in a rice field soil. *PLOS ONE* 8(1): e53656; doi: 10.1371/journal.pone.0053656.

**Daebeler, A.**, Abel, G., Bodelier, P.L.E., Bodrossy, L., Frampton, D., Hefting, M.M. and Laanbroek, H.J. (2012). Archaeal dominated ammonia-oxidizing communities in Icelandic grassland soils are moderately affected by long-term N fertilization and geothermal heating. invited contribution to *Frontiers in Microbiology* 3:352; doi: 10.3389/fmicb.2012.00352.

## PRESENTATIONS/ CONFERENCES

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- 02/ 2013 *ISME 16*, Montreal, CA. Physiological and genomic characterization of alkaliphilic nitrite-oxidizing bacteria from Austrian saline lakes. **Oral** presentation.
- 08/ 2014 *ISME 15*, Seoul, KR. Haloalkaliphilic nitrite-oxidizing bacteria from Austrian soda lakes. **Oral** presentation.
- 02/ 2013 *Netherlands Annual Ecology Days 2013*, Lunteren, NL. Microbial ecology - From species richness to functional biodiversity. **Convener**.
- 12/ 2012 *KNVM Microbial Ecology Fall Meeting*; Wageningen, NL. Nitrifiers in Icelandic grassland soils. **Oral** presentation.
- 08/ 2012 *ISME 14*; Copenhagen, DK. Archaeal dominated ammonia-oxidizing communities in Icelandic grassland soils are moderately affected by long-term N fertilization and geothermal heating. **Oral** presentation.
- 07/ 2011 *International Conference on Nitrification 2 - ICoN2*; Nijmegen, NL. Best on their own turf? Niches for ammonia-oxidizing archaea in soil. **Oral** presentation and **organizer**.
- 04/ 2011 *Ecology of soil microorganisms*; Prague, CZ. That 's NICE: Nitrifying archaea on ICEland. **Poster** presentation.
- 09/ 2010 *Enzymology and Ecology of the Nitrogen cycle*; University of Birmingham, UK. Disentangling the effects of enhanced nitrogen deposition and temperature on community composition of ammonia-oxidizing Archaea? **Oral** presentation.
- 12/ 2009 *EuroMicrobe - Exploring the rationale for conservation of environmental microbial communities and associated habitats*; Hilversum, NL. **Convener**.

## WORKSHOPS AND COURSES

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- 02/2013 *Data Analyses in Life Sciences Using Linear Models with R*; Oikostat GmbH, Willisau, AU
- 08/2012 *STAMPS: Strategies and techniques for analyzing microbial population structures*; Marine Biological Laboratory, Woods Hole, USA
- 06/ 2010 *Soil Ecology: Taking global issues under ground*; Wageningen University, Wageningen, NL
- 02/ 2010 *ARB/ SILVA workshop*; Max Planck Institute for Marine Microbiology, Bremen, GER
- 01/ 2009 *Applied Statistics*; Max Planck Institute for Terrestrial Microbiology, Marburg, GER
- 09/ 2008 *Natural Stable Isotope Analysis*, Max Planck Institute for Terrestrial Microbiology, Marburg, GER
- 06/ 2007 *Statistical Methods in Ecology using R*; Technical University of Dresden, Dresden, GER
- 02/ 2007 *Molecular fingerprinting methods in microbiology*; Technical University of Dresden, Dresden, GER

## TEACHING AND SUPERVISION EXPERIENCE

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- Teaching     Guest lecturer at M.Sc. course “*Ecology and Natural Resource Management 2013*”, University of Utrecht, NL; Guest lecturer at M.Sc. course “*Microbial Ecology 2012*”, Free University of Amsterdam, NL
- Supervision     Laboratory Assistant: Joann van Essen, M.Sc students: Adrian Berger, Anna Wieser, Queralt Güell

## JOURNAL REVIEW AND FUNDING

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- Review     The ISME Journal, Environmental Microbiology, FEMS Microbiology Ecology, frontiers IN MICROBIOLOGY, Applied and Environmental Microbiology, Journal of Ecology, Biogeosciences, Geoderma, Plant and Soil, Biology and Fertility of Soils, Environmental Sciences and Pollution Research
- Funding     *Back to Research Grant* of the University of Vienna. (22.000 € funded in December 2015)
- The *Schure-Beijerinck-Popping fund*. Laboratory visit to the Institute of Soil Science at the Chinese Academy of Sciences in Nanjing. (2.500 € funded in February 2011)
- The *Schure-Beijerinck-Popping fund*. Fieldwork on Iceland for my PhD project. (1.200 € funded in March 2010)
- The *LEONARDO Foundation for European work experiences*. Visiting graduate student at the Netherlands Institute of Ecology, Centre for Limnology, Department for Microbial Wetland Ecology, Nieuwersluis, NL. (1.400 € funded in September 2007)

## SKILLS

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- IT             Microsoft Office, L<sup>A</sup>T<sub>E</sub>X, Graphic programs (Origin, Primer, SigmaPlot), Statistical programs (R, Statistica, SPSS), comparative genomics and sequence analysis (ARB, mothur, QUIME, Prokka, Artemis, MaGe, RAST, Orthofinder)
- Lab.          eg: nucleic acid extraction, (RT)-PCR, Q-PCR, DGGE, t-RFLP, Sanger- and barcoded highthroughput sequencing, microarray, cloning, chromatographic methods (GC, HPLC, IC), IRMS, stable isotope fractionation, stable isotope labeling, (MAR)-FISH, culturing of chemolithoautotrophs

## LANGUAGES

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- German:    native language
- English:    fluent since residency in San Luis Obispo, CA, USA from 1992 - 1995
- Dutch:     basic communication

## EXTRACURRICULAR ACTIVITIES

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- climbing, Yoga and dance