

**Assoz.-Prof. Dr. Alexander Loy**

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**BIOSKETCH**

Alexander Loy is Associate Professor at the Department of Microbiology and Ecosystem Science (University of Vienna, Austria), managing director of the Austrian Microbiome Initiative (AMICI), and faculty member of the Austrian Polar Research Institute (APRI). He received his PhD in Microbiology at the Technical University of Munich in Germany. In 2003, he received a Marie Curie postdoctoral fellowship to join the newly founded Department of Microbial Ecology at the University of Vienna in Austria, where he established his own research group in 2006 based on third-party grants and was Assistant Professor from 2009 to 2013. He obtained his Habilitation (*venia docendi*) and the Young Scientist Award of the City of Vienna in 2012.

Research of the Loy group focuses on (1) **evolution and ecology of sulfur microorganisms**, (2) **the function of the complex symbiotic microbiota of animals and humans**, and (3) **the development of molecular and isotope-labeling methods for studying uncultivated microorganisms in their natural environment**.

Since 2002, he has published 66 papers in peer-reviewed journals (including one paper each in *Nature*, *Science* and *PloS Biology*, and two in *PNAS*) and 9 book chapters, and has edited a book on Geomicrobiology. These publications have a total impact factor of 447 and were cited more than 4.400 times (h-index of 31). He has been invited to 46 presentations at national and international workshops, conferences or institutions. Since 2004, he has obtained ten research grants as PI (total budget >3.3 million €) and four sequencing grants.

## PERSONAL INFORMATION

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Born 1974 in Ceske Budejovice, Czech Republic - German citizenship - Two children (born 2009, 2013)

## RESEARCH INTERESTS

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- Evolution and ecology of sulfur-compound-metabolizing microorganisms, including sulfate reducers
- Function of the complex symbiotic microbiota of animals and humans
- Development of molecular and isotope-labeling methods for studying uncultivated microorganisms in their natural environment.

## CURRENT POSITIONS

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- 2016 Managing director and founding member of the Austrian Microbiome Initiative (AMICI, <http://www.microbiome.at/>)
- 2013 Associate professor, Dept. Microbiology & Ecosystem Science, University of Vienna, Austria
- 2013 Founding and faculty member of the Austrian Polar Research Institute <http://www.polarresearch.at/>
- 2006 Leader of the **sulfur microbes research group** at the Dept. Microbiology & Ecosystem Science, University of Vienna. The group currently consists of 2 Postdocs, 3 PhD students, and 3 master students.

## EDUCATION AND PROFESSIONAL CAREER

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- April 13, 2012 Habilitation (*venia docendi*) in Microbiology, University of Vienna (thesis: *Evolution and ecology of sulfur cycle microorganisms - sulfite reductase genes as molecular markers and novel, sulfur compound-dissimilating microorganisms in the environment*)
- 2009 Assistant professor (tenure track), Department of Microbial Ecology
- 2008 Assistant professor (“Universitätsassistent”), Department of Microbial Ecology
- 2006 Group leader (self-financed by FWF grant), Department of Microbial Ecology
- 2004 Marie Curie postdoctoral fellow, Department of Microbial Ecology
- 2003 Postdoctoral fellow, Department of Microbial Ecology, University of Vienna, Austria
- July 7, 2003 Dissertation (*Dr. rer. nat.*), grade 1.1 “magna cum laude” (thesis: *DNA microarray technology for biodiversity inventories of sulfate-reducing prokaryotes*)
- 2000 Ph.D. student, Department of Microbiology, Technical University of Munich, Germany (supervisors: Dr. Michael Wagner and Prof. Karl-Heinz Schleifer)
- 1999 Research Biologist, Helmholtz Research Center for Environment Health, Munich, Germany
- October 16, 1999 Diploma in Biology (*Univ. Dipl.-Biol.*), grade 1.3 (thesis: *Molecular identification of bacteria in natural mineral water*)
- 1993 Biology student, Technical University of Munich, Germany (microbiology and subsidiary topics on virology, immunology, and clinical chemistry)

## FUNDING

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Since 2004: **10** third-party research grants (total budget € **3.342.028**) and **4** sequencing grants

1. Physiological interactions of *Salmonella* and the intestinal microbiota – Ecological and genetic fitness determinants in colonization resistance and inflammation. **International D-A-CH project with FWF Austrian Science Fund as lead agency** [2016, 3 years] (*principal investigator* Alexander Loy, 449,768 of 703,156€ excluding overheads).
2. Nutrition and the intestinal microbiota-host symbiosis: A holistic stable isotope-labeling approach to decipher key microbial players and quantitatively link single cell activity to system function. **WWTF Vienna Science and Technology Fund** [2013, 3 years] (*principal investigator* Alexander Loy, *Co-PI* David Berry, 335.700 €).
3. The cold microbial majority: Ecophysiology, biogeography, and genomics of psychrophilic sulfate-reducing microorganisms in arctic marine sediments. **FWF Austrian Science Fund project** [2013, 3 years] (*principal investigator* Alexander Loy, 445.757 € excluding overheads).
4. Ecophysiology of a sulfate-reducing rare biosphere member – in situ analysis of a peatland *Desulfosporosinus* sp. on a genomic, transcriptional, and metabolic level. **FWF Austrian Science Fund project** [since 2011/4, 3 years] (*principal investigator* Michael Pester (2011/4-2012/12), Alexander Loy (2013/1-2014/3), 383.103 € excluding overheads).
5. ‘Aqua incognita’ in bottles: Microbial ecology of bottled waters and implications for formation of methylated sulfur and selenium compounds. **Industry funded project** [since 2011/1, 3 years] (*principal investigator* Alexander Loy, 491.692 €)
6. Metagenomics and metatranscriptomics of the Inflammatory Bowel Disease Microbiota. **GEN-AU III joint project - BMWF Austrian Federal Ministry of Science and Research** [2009/5, 3 years] (*subproject leaders* Alexander Loy and Michael Wagner, 367.705 € of 1.540.000 €)
7. Diversity and biogeography of thermophilic sporeforming sulfate-reducing microorganisms in cold marine sediments: Bioindicators for fluid flow from the hot subsurface? **FWF Austrian Science Fund project** [2007/11, 3 years] (*principal investigator* Alexander Loy, 224.564 €).
8. Joint project: Impact of microbial diversity and activity on sustainable land use; Subproject 2: “Nitrifying microorganisms and *Acidobacteria* as bioindicators for soil health”. **BMBF German Federal Ministry of Education and Research** [2007/1, 3 years] (*subproject leaders* Alexander Loy, Wolfgang Ludwig, Michael Wagner, 133.124 € of 325.139 €)
9. Identity, community dynamics, and ecophysiology of novel and uncultured sulfate-reducing prokaryotes in an acidic fen system. **FWF Austrian Science Fund project** [2006/4, 3 years] (*principal investigator* Alexander Loy, 362.353 €).
10. Biodiversity of microbial communities involved in sulfur cycling at a shallow water hydrothermal vent. **Marie Curie Intra-European Fellowship in the EU 6<sup>th</sup> framework programme** [2004-2006] (*Marie Curie fellow* Alexander Loy, 148.262 €).

*Sequencing grants:*

1. Unravelling the metabolic diversity of uncharacterised clades of marine subsurface *Chloroflexi*. CSP-2787. **Joint Genome Institute - Community Sequencing Program**. [2015] (*principal investigator* Kenneth Wasmund, *Co-PIs* Alexander Loy, Lorenz Adrian, Steffen Leth Jorgensen, sequencing of single amplified genomes of 48 *Chloroflexi* cells)
2. Participant in the **MinION Access programme (MAP), Oxford Nanopore** [2014-2015] (*principal investigator* Alexander Loy, recipient of two MAP packages including flow-cells).
3. Targeted metagenomics and metatranscriptomics of a sulfate-reducing rare biosphere member and potentially novel sulfate reducers that impact methane emission from peatlands. CSP-605. **Joint Genome Institute - Community Sequencing Program**. [2011] (*principal investigator* Michael Pester, *Co-PI* Alexander Loy and others, metagenome/metatranscriptome/single cell genome sequencing)
4. Comparative genomics of *Desulfosporosinus* species – Insights into the evolution and genetic blueprints of sulfate-reducing bacteria involved in wetland carbon cycling and heavy metal bioremediation. **Joint Genome Institute - Community Sequencing Program**. [2010] (*principal investigator* Alexander Loy, sequencing of 4 *Desulfosporosinus* genomes)

*Projects as host:*

1. Diversity and ecophysiology of sulfur-compounds-metabolizing microorganisms in the intestinal tract of human and animals. **China Scholarship Council**, PhD fellowship to Huimin Ye [2016, 4 years]
2. Missing links in the marine sulfur cycle – identity and functions of microorganisms utilizing sulfur cycle intermediates and organic sulfur molecules in marine sediments. **FWF Austrian Science Fund project** [2016/07, 3 years] (*principal investigator* Kenneth Wasmund, 305.514,30 € excluding overheads).
3. **Back-to-research grant, University of Vienna**, Dr. Celine Lesaulnier [2014/10, 9 months]
4. **PhD completion grant, University of Vienna**, Albert Müller [2014]
5. Understanding the relationships between polycyclic aromatic hydrocarbon-degrading bacteria and marine eukaryotic phytoplankton. **James Watt PhD Fellowship, Heriot Watt University, Edinburgh**, Haydn Thompson [since 2013, 3 years]. *Supervisors* Tony Gutierrez, Alexander Loy.
6. **ASEA-UNINET Stipend and International Budget of the Universität Wien**, Dr. Pinsurang Deevong [2010/4, 3 months] [2009/3, 3 months]
7. The function of *Acidobacteria* in acidic fen soils. **Feodor Lynen-Forschungsstipendium, Alexander-von-Humboldt Stiftung**, Dr. Michael Pester [since 2007/12, 2 years]

## ACADEMIC HONORS AND AWARDS

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- 2012 Science Award of the City of Vienna for scientists <40 years of age (“Förderungspreis Stadt Wien”)
- 2007 Young Scientist Award “Focus of Excellence” of the Faculty of Life Sciences, University of Vienna
- 2004-2006 Marie Curie fellow (Intra-European Fellowship) in the EU 6th framework programme

## POSITIONS OFFERED

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- December 2008 Associate Professor with Tenure (Molecular Microbial Ecology) at the Biological Institute (Faculty of Science) of the University of Southern Denmark

## REVIEWING ACTIVITIES

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Reviewer stats on Publon <https://publons.com/a/505334/>

### Editorial Board Member

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|------------|---|
| Since 2013 | Frontiers in Microbiology - Microbial Symbiosis               |
| Since 2012 | Applied and Environmental Microbiology                        |
| Since 2011 | Frontiers in Microbiology - Extreme Microbiology              |
| Since 2009 | Environmental Microbiology/Environmental Microbiology Reports |

**Reviewer for diverse journals**, including *Science*, *Nature Microbiology Reviews*, *Nature Communications*, *ISME Journal*, *mBio*, *Nature Protocols*, *Environmental Science & Technology*, *Molecular Ecology*, *Water Research*, *FEMS Microbiology Ecology*, **and funding agencies**, including Agence Nationale de Recherche (France), Natural Environment Research Council (UK), Swiss National Science Foundation, Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek - Vlaanderen, FWO) (Belgium).

## MEMBERSHIPS IN SCIENTIFIC SOCIETIES

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- Since 2015 Austrian Association of Molecular Life Sciences and Biotechnology (ÖGMBT)
- Since 2012 European Society for Neurogastroenterology & Motility (ESNM) – Gut Microbiota & Health Section
- Since 2011 Society for Applied Microbiology (SfAM)
- 2011 Geochemical Society
- Since 2004 International Society for Microbial Ecology (ISME)
- Since 2003 American Society for Microbiology (ASM)
- Since 2001 Association for General and Applied Microbiology (VAAM), Germany

## OTHER PROFESSIONAL ACTIVITIES

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- 2018 Organizing committee member, Workshop on Microbial Sulfur Metabolism, Vienna, Austria

## CURRICULUM VITAE - Alexander Loy

- 2017 Organizing committee member, 1<sup>st</sup> Symposium of the Austrian Microbiome Initiative, Vienna, Austria
- 2015 Managing director and founding member of the Austrian Microbiome Initiative (AMICI, <http://www.microbiome.at/>)
- Since 2015 Consultant for the Nutrition Section at the International Atomic Energy Agency, IAEA
- 2015 Scientific committee member, EMBO Workshop on Microbial Sulfur Metabolism, Copenhagen, Denmark
- 2014 Invited Lecturer at the Graduate course on *The Intestinal Microbiome and Diet in Human and Animal Health*. 1-3 October 2014 Wageningen, The Netherlands. Organised by The Graduate School VLAG, in co-operation with the Laboratory of Microbiology Wageningen University and the Doctoral Programme in Food Chain and Health, the University of Helsinki <http://www.vlaggraduateschool.nl/courses/int-microbiome.htm>
- 2013-2015 Emerging Field “Human and animal microbiome function” of the Faculty of Life Sciences, University of Vienna
- Since 2013 Founding member and faculty member of the Austrian Polar Research Institute (APRI, <http://www.polarresearch.at/>)
- 2012 Member of the search committee for an Assistant Professor position in Molecular Microbiology (University of Vienna)
- 2012-2013 Member of the working group for the new master curriculum “Molecular Microbiology, Microbial Ecology, and Immunobiology” (University of Vienna)
- Since 2007 Co-founder of the online tool probeCheck <http://www.microbial-ecology.net/probecheck/>
- Since 2002 Co-founder of the online probe database probeBase <http://www.microbial-ecology.net/probebase/>; recommended in *Science* 2002, 298, p. 19
- 2004-2007 Invited expert of the COST action 853 “Agricultural Biomarkers for Array Technology”, 31.10.2001 - 06.03.2007
- Since 2002 Organizer, supervisor, and lecturer at the annual “International Course for Fluorescence in situ hybridization”, Technical University of Munich, Germany, and University of Vienna, Austria, <http://www.microbial-ecology.net/international-fish-course>
- Since 2002 Host for 18 national and international guest students and scientists (Kerstin Bischof, Kasper U. Kjeldsen, Dr. Martin Hesselsoe, Susan Schönmann, Sara Tocchetti, Alberto Robador, Dr. Julie Leloup, Dr. Marcus Horn, Alexandra Hamberger, Tanja Kostic, Dr. Safak Yilmaz, Dr. Casey Hubert, Aura Nousiainen, Dr. Verona Vandieken, Dr. Pinsurang Deevong, Dr. Nadezhda Hristova Todorova, Erin McClure, Jesse Colangelo-Lillis)

## PUBLIC OUTREACH

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My research has been covered in over **60 newspapers, magazines or online articles**, among others in the national newspapers *Der Standard*, *Die Presse*, and *Kronenzeitung* (Austria) and the magazine *2012*. I have appeared in several features on Austrian radio Ö1. Since 2007, I am lecturer at the annual children university in Vienna ‘KinderUni’ [www.kinderuni.at](http://www.kinderuni.at)

## SUPERVISION OF GRADUATE STUDENTS AND POSTDOCS

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I have served/ am serving as **main supervisor for 6 postdocs, 6 PhD students, and 31 diploma/master students** at the University of Vienna.

**Member of PhD thesis committees** of Elke Korb, since 2016 (Medical University of Vienna, Austria), Caroline Buckner, since 2015 (Max-Planck-Institute for Marine Microbiology, Bremen, Germany), Lara Jochum, since 2014 (Center for Geomicrobiology, University of Aarhus, Denmark), Luke McKay, 2012-2014 (University of North Carolina, USA), and Julia Rosa de Rezende, 2008-2011 (University of Aarhus, Denmark).

**External PhD thesis reviewer/opponent** of Stefanie Urimare Wetzels, 2016 (University of Veterinary Medicine Vienna, Austria), Lina Russ, 2015 (Radboud University, Nijmegen, The Netherlands), Jing Zhang, 2014 (University of Wageningen, The Netherlands); Luke McKay, 2014 (University of North Carolina, USA); Evelyne Mann, 2014 (University of Veterinary Medicine Vienna, Austria); and Petia Kovatcheva-Datchary, 2010 (University of Wageningen, The Netherlands).

## TEACHING ACTIVITIES

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Over **60 courses in bachelor and master curricula** at the University of Vienna since 2007.

*Lectures:* Biodiversity and molecular ecology of microorganisms (in bachelor and master studies), Evolution and ecology of sulfur-cycle microorganisms

*Seminars:* Current topics in molecular microbial ecology and evolution, Environmental sciences, Proseminar in microbial ecology

*Lab courses:* DNA microarrays, Scientific practice in microbial ecology

Search the university course catalog <http://ufind.univie.ac.at/en/index.html> for details

## INVITED PRESENTATIONS

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I have been **invited to 46 presentations** at national and international workshops, conferences or institutions.

1. [2017] Marine Geomicrobiology Workshop, Sandbjerg, Denmark, 28. August -1. September 2017.
2. [2017] American Society of Microbiology (ASM) Microbe 2017, New Orleans, USA, 1-5 June 2017.
3. [2016] *Modern microbiome methods: Amplicon sequencing, metagenomics, metatranscriptomics, and more.* Summer School 'Nutrition and Animal Gut Health', University of Veterinary Medicine, **Vienna, Austria**, 1-6 August 2016
4. [2015] *The intestinal microbiome in action – revealing the functions of individual members in health and disease by single cell stable isotope probing.* Technical Meeting on Environmental Enteric dysfunction, the Microbiome and Undernutrition. International Atomic Energy Agency. **Vienna, Austria**, 28-30 October 2015

5. [2015] *Sulfate-reducing microorganisms in wetlands - Undervalued players in carbon cycling and climate change*. Department of Microbiology, Radboud University. **Nijmegen, The Netherlands**, 8 July 2015
6. [2015] *Understanding colonization resistance - new tools to analyze in vivo physiology and substrate competition of individual microbial cells in the intestinal tract*. Leibniz Center Infection Symposium 'Emerging Infections 2015'. **Hamburg, Germany**, 29-30 January 2015
7. [2014] *The intestinal microbiome in action – revealing the functions of individual members in health and disease*. Microbiomes in oncology: from basic science to therapeutic visions. **Vienna, Austria**, 14 November 2014
8. [2014] *From functional gene studies to ecosystem functions: a case study of hidden sulfate-reducing microorganisms in wetlands*. Agouron Institute Research Meeting - The sulfur cycle. **Rancho Palos Verdes, USA**, October 26-30, 2014
9. [2014] *Fecal microbiota transplantation for treatment of inflammatory bowel disease – do we have to curb our enthusiasm?* Third International Advanced course on “The Intestinal Microbiome and Diet in Human and Animal Health”. **Wageningen, The Netherlands**, 1-3 October 2014
10. [2014] *New single cell technologies for dietary and physiological studies in mice and men*. Third International Advanced course on “The Intestinal Microbiome and Diet in Human and Animal Health”. **Wageningen, The Netherlands**, 1-3 October 2014
11. [2013] *Go with the flow: Endospores of thermophilic bacteria as tracers of microbial dispersal by ocean currents*. Institute for Chemistry and Biology of the Marine Environment, University of Oldenburg. **Oldenburg, Germany**, 11 December 2013.
12. [2013] *Metabolic individuality in the intestinal wilderness - a novel single-cell approach to study in vivo function of intestinal microbiota members*. Keynote lecture at the 6th Seeon Conference on „Microbiota, Probiota and Host“. **Seeon, Germany**, 28-30 June 2013. (not given due to illness)
13. [2013] *Microbial individuality in the intestinal wilderness of men and mice*. Institute of Specific Prophylaxis and Tropical Medicine, Medical University Vienna. **Vienna, Austria**, 24 April 2013.
14. [2012] *Applied and basic properties of the intestinal microbiota: fecal microbiota transplantation and a new single-cell method for identification of host-compound-foraging microbes*. Keynote lecture at the 2. Symposium of the intra-university research cluster “Animal Gut Health”, University of Veterinary Medicine. **Vienna, Austria**, 12 November 2012. (not given due to illness)
15. [2012] *Individuality matters – of microbes and man*. Cologne Science Center Symposium on “Intestinal Microbiota in Health and Disease - Impact on Personalized Nutrition & Medicine”. **Köln, Germany**, 14 June 2012.
16. [2012] *Ecology of sulfate-reducing microorganisms in wetlands - fame-less actors in carbon cycling and climate change*. EMBO Workshop on Microbial Sulfur Metabolism. **Noordwijkerhout, The Netherlands**, 15-18 April 2012.
17. [2011] *Eating heavy: isotope- labeling approaches for studying the function of uncultivated microorganisms in the environment*. **Keynote lecture** at 1st International Symposium on Microbial Horticulture, SLU, **Alnarp, Sweden**, May 15- 19, 2011



18. [2010] *Molecular biology of sulfate reduction in peatlands – a rare microorganism is involved in a process that mitigates global warming.* Young Group Leader presentation at the 2nd Annual Meeting of the Austrian Association of Molecular Life Sciences and Biotechnology. **Vienna, Austria**, 27-29 September 2010.
19. [2010] *Sulfate reduction in peatlands – Does a rare keystone microorganism drive a process that mitigates global warming? **Keynote lecture*** at the Goldschmidt 2010, Earth, Energy, and the Environment. **Knoxville, USA**, 13-18 June 2010.
20. [2010] *Tracking down sulphate-reducing microorganisms by molecular and isotope-labelling techniques.* European Geosciences Union General Assembly 2010. **Vienna, Austria**, 2–7 May 2010.
21. [2010] *Sulfate reduction in peatlands: Does a ‘rare biosphere’ microorganism do the job!?* Seminar at the Center of Geomicrobiology, University of Aarhus. **Aarhus, Denmark**, 16. March 2010.
22. [2009] *On the opportunities and challenges of diagnosing sulfate-reducing microorganisms. **Opening lecture*** at the 2<sup>nd</sup> International Symposium on Applied Microbiology and Molecular Biology in Oil Systems (ISMOS-2). **Aarhus, Denmark**, 17-19. June 2009.
23. [2008] *Evolution and ecology of sulfur microorganisms: Hidden players in a well known biogeochemical cycle.* Seminar at the University of Southern Denmark. **Odense, Denmark**, 26. November 2008.
24. [2008] *Evolution and ecology of sulfur cycle microorganisms.* Seminar at the Masaryk University. **Brno, Czech Republic**, 30. October 2008.
25. [2008] *Molecular evolution of dissimilatory sulfite reductases revisited: News on sulfur oxidation.* Seminar at the University of Aarhus. **Aarhus, Denmark**, 13 October 2008.
26. [2008] *New methods for probing physiological capabilities of uncultivated microorganisms.* 14th International Symposium on Biodeterioration and Biodegradation (IBBS-14), **S. Alessio Siculo, Italy**, 6.-11. October 2008.
27. [2008] *New insights into the microbial ecology of sulfur cycling: Looking below the tip of the iceberg.* Seminar at the Friedrich Schiller University Jena. **Jena, Germany**, 28 May 2008.
28. [2008] *Analyzing microbes after their last meal: Raman microspectroscopy of isotope-labeled cells and nucleic acids.* rRNA Workshop. **Bremen, Germany**, 7.-9. April 2008.
29. [2008] *Die Henkersmahlzeit unkultivierter Mikroben: rRNA-basierte Mikroarrays für Struktur-Funktionsanalysen komplexer mikrobieller Lebensgemeinschaften.* Genomics&Proteomics Workshop Zinsser Analytic. **Wien, Austria**, 12 Februar 2008.
30. [2008] *Evolution and ecology of sulfur microbes: Sulfite reductase as evolutionary key to a life with sulfur?* Seminar at the MPI Bremen. **Bremen, Germany**, 10 January 2008.
31. [2007] *The “last meal” of uncultivated microbes: Microarray and single cell tools for structure-function analysis of polymicrobial communities.* Seminar at the UCL Eastman Dental Institute. **London, England**, 21 November 2007.
32. [2007] *Deciphering “Who is doing what in complex microbial communities?” with DNA microarrays* Meeting of the European Research Group for Oral Biology “Biofilms in Oral Biology”. **Geneva, Switzerland**, 9 June 2007.
33. [2006] *Microbial ecology of sulfur cycling: A molecular perspective.* Seminar at the University of Aarhus. **Aarhus, Denmark**, 31 October 2006.

34. [2006] *Microbial ecology of sulfur cycling: The hidden diversity*. Seminar at the Baltic Sea Research Institute. **Warnemünde, Germany**, 12 October 2006.
35. [2006] *From PhyloChips to Isotope Arrays - structure and function of microbial communities at one fell swoop*. 11th International Symposium on Microbial Ecology, ISME-11. **Vienna, Austria**, 20.-25. August 2006.
36. [2006] *Ecology and evolutionary history of sulfate-reducing prokaryotes*. International Symposium on Microbial Sulfur Metabolism (ISMSM). **Münster, Germany**, 29 June – 2 July 2006.
37. [2006] *Functional probing of microbial communities with rRNA-targeted oligonucleotide microarrays*. Workshop “Marine Genomics meets Marine Diversity” at MPI Bremen, EU Network of Excellence Marine Genomics Europe. **Bremen, Germany**, 8-9 June 2006.
38. [2006] *New insights in the ecology of sulfur cycling via microarrays and environmental genomics*. European Geosciences Union General Assembly 2006. **Vienna, Austria**, 2–7 April 2006.
39. [2006] *Exploring the composition and ecophysiology of microbial communities using rRNA-targeted oligonucleotide microarrays*. 4th Biorhiz Workshop – MPI Jena. **Jena, Germany**, 24-27 January 2006.
40. [2006] *On PhyloChips and Isotope Arrays: Problems and Solutions*. Seminar at TU München. **Freising, Germany**, 13 January 2006.
41. [2005] *Isotopic labeling and PhyloChips: Exploring ecophysiology of microbial communities*. Cost Action 853 meeting: Agricultural biomarkers for array technology. **Lyon, France**, 29-30 November 2005.
42. [2005] *Beyond the use of phylogenetic microarrays for highly parallel microbial diversity analysis - the Isotope Array approach*. Workshop on “Detection of microbial diversity in environmental samples”. **Camarino, Italy**, 19-21 September 2005.
43. [2005] *Simultaneous analysis of microbial community composition and function by rRNA-targeted oligonucleotide microarrays*. Biodiversity and integrative Genetics Seminar. University of Lausanne. **Lausanne, Switzerland**, 18 March 2005.
44. [2004] *In silico design and evaluation of oligonucleotide microarray probes*. Cost Action 853 meeting: Agricultural biomarkers for array technology. **York, England**, 28 October 2004.
45. [2004] *Ribosomal RNA-targeted oligonucleotide microarrays (PhyloChips) for rapid biodiversity screening: Microbial community structure at a glance*. Cost Action 853 meeting: Agricultural biomarkers for array technology. **Ascona, Switzerland**, 25 June 2004.
46. [2003] *Ribosomal RNA-targeted oligonucleotide microarrays (PhyloChips) for rapid biodiversity screening: new perspectives for future environmental studies*. Identification-Array Symposium. **Wageningen, Netherlands**, 15 May 2003.

## PUBLICATIONS

I have published **66 papers in peer-reviewed journals** (including 1 paper each in *Nature*, *Science* and *PLoS Biology*, and two papers in *PNAS*) and **9 book chapters** and other publications, and I have **edited one book**. The papers were **cited 4432 (Scopus)/6124 (Google Scholar) times** and have a **total impact factor of 447** (ISI Journal Citation Reports 2015) (mean impact factor per paper = 6.8). My current **h-index is 31** (December 12th, 2016).

Researcher ID <http://www.researcherid.com/rid/A-8182-2008>  
 ORCID <http://orcid.org/0000-0001-8923-5882>  
 Google Scholar <http://scholar.google.com/citations?user=6MIGowYAAAAJ>  
 Scopus AuthorID <http://www.scopus.com/authid/detail.url?authorid=56243274300>

**PEER-REVIEWED JOURNALS** \*corresponding authorship

1. Brugiroux S, Beutler M, Pfann C, Garzetti D, Ruscheweyh H-J, Ring D, Diehl M, Herp S, Lötscher Y, Hussain S, Bunk B, Pukall R, Huson DH, Münch PC, McHardy AC, McCoy KD, Macpherson AJ, **Loy A**, Clavel T, Berry D, and Stecher B [2016] Genome-guided design of a novel defined mouse microbiota that confers colonization resistance against *Salmonella enterica* serovar Typhimurium. **Nature Microbiol.** In press. doi: 10.1038/nmicrobiol.2016.215
2. Ralls MW, Demehri FR, Feng Y, Raskind S, Ruan C, Schintlmeister A, **Loy A**, Hanson B, Berry D, Burant CF, and Teitelbaum DH [2016] Bacterial nutrient foraging in a mouse model of enteral nutrient deprivation: Insight into the gut origin of sepsis. **Am J Physiol Gastrointest Liver Physiol.** 311: G734-G743. doi: 10.1152/ajpgi.00088.2016
3. Roux S, Brum JR, Dutilh BE, Sunagawa S, Duhaime MB, **Loy A**, Poulos BT, Solonenko N, Lara E, Poulain J, Pesant S, Kandels-Lewis S, Dimier C, Picheral M, Searson S, Cruaud C, Alberti A, Duarte CM, Gasol JM, Vaquer D, *Tara Oceans* Coordinators, Bork P, Acinas SG, Wincker P, and Sullivan MB [2016] Ecogenomics and potential biogeochemical impacts of globally abundant ocean viruses. **Nature.** 537: 689–693. doi: 10.1038/nature19366
4. Butler RN<sup>#</sup>, Kosek M<sup>#</sup>, Krebs N<sup>#</sup>, Loechl C<sup>#</sup>, **Loy A<sup>#</sup>**, Owino V<sup>#</sup>, Zimmermann M<sup>#</sup>, and Morrison DJ<sup>#</sup> [2016] Stable isotope techniques for the assessment of host and microbiota response during gastrointestinal dysfunction. **Journal of Pediatric Gastroenterology & Nutrition.** In press  
<sup># All authors contributed equally to this work</sup>
5. Owino V<sup>#</sup>, Ahmed T<sup>#</sup>, Freemark M<sup>#</sup>, Kelly P<sup>#</sup>, **Loy A<sup>#</sup>**, Manary M<sup>#</sup>, and Loechl C<sup>#</sup> [2016] Environmental enteric dysfunction and growth failure/stunting in global child health. **Pediatrics.** 138: e20160641. doi: 10.1542/peds.2016-0641  
<sup># All authors contributed equally to this work</sup>
6. Wasmund K, Cooper M, Schreiber L, Lloyd KG, Baker B, Petersen DG, Jørgensen BB, Stepanauskas R, Reinhardt R, Schramm A, **Loy A**, and Adrian L [2016] Single cell genome and group-specific *dsrAB* sequencing implicate members of the class *Dehalococcoidia* (phylum *Chloroflexi*) in sulfur cycling. **mBio.** 7: e00266-16. doi: 10.1128/mBio.00266-16
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