

# Curriculum Vitae

## Personal Information:

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### Assistant Prof. Dipl.-Biol. Dr. rer. nat. Julia Vierheilig

Head of research group “Molecular Microbiology in Sanitary Engineering”  
Institute for Water Quality and Resource Management (E226-01)  
TU Wien

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Personal member of the ICC Water & Health  
[www.waterandhealth.at](http://www.waterandhealth.at)



## Education and Professional Experience

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### Since 06.2021 Research Group Leader (tenure track position)

Molecular Microbiology in Sanitary Engineering, Institute for Water Quality and Resource Management, TU Wien, Austria

### 12.2020-05.2021 Parental Leave

### 10.2018-05.2021 Scientific Staff (permanent position)

Division Water Quality and Health (Prof. Andreas Farnleitner), Karl Landsteiner University of Health Sciences, Krems an der Donau, Austria

### 09.2018-02.2019 Lecturer

Division of Microbial Ecology (Prof. Michael Wagner), University of Vienna, Austria

### 07.2017-08.2018 Parental Leave

### 04.2014-06.2017 Postdoctoral Researcher

Division of Microbial Ecology (Prof. Michael Wagner), University of Vienna, Austria

### 12.2009-03.2014 Project Assistant (FWF) & PhD Studies (absolved “mit Auszeichnung”, summa cum laude)

Dissertation Topic: *Bacteroidetes* and other alternative bacterial indicators for faecal pollution of water: applicability, population structures, and dynamics.

Research Group: Environmental Microbiology and Molecular Ecology (Assoc. Prof. Andreas Farnleitner), TU Wien, Austria;  
Vienna Doctoral Programme on Water Resource Systems (FWF DK-Plus), TU Wien, Austria & ICC Water & Health, Austria

### 06.2013-08.2013 Research Stay Abroad

Institute of Groundwater Ecology, Helmholtz Centre Munich, German Research Centre for Environmental Health, Neuherberg, Germany

### 08.2012-11.2012 Research Stay Abroad

Department of Microbiology, Cornell University, Ithaca, NY, USA

### 08.2009-11.2009 Research Assistant

Institute of Water Quality Control, TU München, in coop. with the Bavarian Environment Agency, Munich, Germany

### 10.2002-06.2009 Studies in biology, “Diplom” (equals master degree; absolved “very good”)

Final exams in animal ecology & tropical biology, biotechnology, pharmacognosy, biochemistry

Bavarian Julius Maximilian University, Wuerzburg, Germany

### 08.2015-10.2005 Research Stay Abroad

Advanced practical course in tropical ecology (field work) Teluk Senangin, Perak & Forest Research Institute Malaysia (FRIM), Kuala Lumpur, Malaysia

(supervision: Department of Animal Ecology & Tropical Biology, Bavarian Julius Maximilian University, Wuerzburg, Germany & Department of Psychopharmacology, Central Institute of Mental Health, Mannheim, Germany)

### 09.1993-06.2002 High School (advanced courses: biology, english)

Frobenius-Gymnasium Hammelburg, Germany

## Recommending and Reviewing Activities:

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Recommender for Peer Community In Microbiology; Reviewing for: *Frontiers in Microbiology*; *Environmental Science and Technology*; *Microbial Ecology*; *FEMS Microbiology Letters*; *Letters in Applied Microbiology*; *Journal of Water & Health*; *Environmental Science and Pollution Research*; *International Journal of Environmental Research and Public Health*; *Water Science and Technology*; *Water Supply*; *Journal of Hydrology*.

## Languages:

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German (mother tongue), English (fluent in speaking and writing), Latinum certificate (awarded after 5 years of study)

**Publications:**

I have published 15 papers in peer-reviewed journals (including 1 paper each in Nature, Science, Nature Communications and Nature Microbiology), 1 book chapter, and 4 other publications. The papers were cited 2845 (Google Scholar) / 2158 (Scopus) times in total. My current h-index is 13 (Google Scholar) / 11 (Scopus). (status: Feb. 21<sup>st</sup> 2023).

Peer-reviewed publications:

- E. Radu, A. Masseron, K.A. Slipko, F. Amman, A. Schedl, B. Agerer, L. Endler, T. Penz, C. Bock, A. Bergthaler, **J. Vierheilig**, P. Hufnagl, I. Korschneck, J. Krampe, N. Kreuzinger (2022): Emergence of SARS-CoV-2 B.1.1.7 lineage (Alpha variant) and its correlation with quantitative wastewater-based epidemiology data. *Water Research*. 215: 118257. <https://doi.org/10.1016/j.watres.2022.118257>.
- A.K.T. Kirschner, **J. Vierheilig**, H.-C. Flemming, J. Wingender, A.H. Farnleitner (2021): How dead is dead? Viable but non-culturable versus persister cells. *Environmental Microbiology Reports*. 13: 243-245. <https://doi.org/10.1111/1758-2229.12949>.
- C. Frick, **J. Vierheilig**, T. Nadiotis-Tsaka, S. Ixenmaier, R. Linke, G.H. Reischer, J. Komma, A.K.T. Kirschner, R. L. Mach, D. Savio, D. Seidl, A.P. Blaschke, R. Sommer, J. Derx, A.H. Farnleitner (2020): Elucidating fecal pollution patterns in alluvial water resources by linking standard fecal indicator bacteria to river connectivity and genetic microbial source tracking markers. *Water Research*. 184: 116132.
- L. Wu, D. Ning, B. Zhang, Y. Li, P. Zhang, X. Shan, Q. Zhang, M. Brown, Z. Li, J.D. Van Nostrand, F. Ling, N. Xiao, Y. Zhang, **J. Vierheilig**, G.F. Wells, Y. Yang, Y. Deng, Q. Tu, A. Wang, Global Water Microbiome Consortium, T. Zhang, Z. He, J. Keller, P.H. Nielsen, P.J.J. Alvarez, C.S. Criddle, M. Wagner, J.M. Tiedje, Q. He, T.P. Curtis, D.A. Stahl, L. Alvarez-Cohen, B.E. Rittmann, X. Wen, J. Zhou (2019): Global diversity and biogeography of bacterial communities in wastewater treatment plants. *Nature Microbiology*. 4, 2579.
- K.D. Kits, M.-Y. Jung, **J. Vierheilig**, P. Pjevac, C.J. Sedlacek, S. Liu, C. Herbold, L.Y. Stein, A. Richter, H. Wissel, N. Brüggemann, M. Wagner, H. Daims (2019): Low yield and abiotic origin of N<sub>2</sub>O formed by the complete nitrifier *Nitrospira inopinata*. *Nature Communications*. 10, 1836.
- C. Frick, **J. Vierheilig**, R. Linke, D. Savio, H. Zornig, R. Antensteiner, C. Baumgartner, C. Bucher, A.P. Blaschke, J. Derx, A.K.T. Kirschner, G. Ryzinska-Paier, R. Mayer, D. Seidl, T. Nadiotis-Tsakaa, R. Sommer, A.H. Farnleitner (2018): Poikilothermic animals as previously unrecognized source of fecal indicator bacteria in a backwater ecosystem of a large river. *Applied and Environmental Microbiology*. 84(16): e00715-00718.
- A. Daebeler, C.W. Herbold, **J. Vierheilig**, C.J. Sedlacek, P. Pjevac, M. Albertsen, R.H. Kirkegaard, J.R. de la Torre, H. Daims, M. Wagner (2018): Cultivation and genomic analysis of “*Candidatus Nitrosocaldus islandicus*”, an obligately thermophilic, ammonia-oxidizing thaumarchaeon from a hot spring biofilm in Graendalur Valley, Iceland. *Frontiers in Microbiology*. 9: 193.
- F. Schulz, N. Yutin, N.N. Ivanova, D.R. Ortega, T.K. Lee, **J. Vierheilig**, H. Daims, M. Horn, M. Wagner, G.J. Jensen, N.C. Kyrpides, E.V. Koonin, T. Woyke (2017): Giant viruses with an expanded complement of translation system components. *Science*. 356(6333):82-85.
- H. Daims, E.V. Lebedeva, P. Pjevac, P. Han, C. Herbold, M. Albertsen, N. Jehmlich, M. Palatinszky, **J. Vierheilig**, A. Bulaev, R.H. Kirkegaard, M.V. Bergen, T. Rattei, B. Bendinger, P.H. Nielsen & M. Wagner (2015): Complete nitrification by *Nitrospira* bacteria. *Nature*. 528(7583): 504-509.
- J. Vierheilig**, D. Savio, R.E. Ley, R.L. Mach, A.H. Farnleitner, G.H. Reischer (2015): Potential applications of next generation DNA sequencing of 16S rRNA gene amplicons in microbial water quality monitoring. *Water Science and Technology*. 72(11): 1962-1972.
- R. E. Mayer, **J. Vierheilig**, L. Egle, G. H. Reischer, E. Saracevic, R. L. Mach, A. K. T. Kirschner, M. Zessner, R. Sommer, and A. H. Farnleitner (2015): Automated sampling procedures supported by high persistence of bacterial fecal indicators and *Bacteroidetes* genetic microbial source tracking markers in municipal wastewater during short-term storage at 5°C. *Applied and Environmental Microbiology*. 81(15): 5134-5143.
- J. Derx, A.H. Farnleitner, G. Blöschl, **J. Vierheilig**, A.P. Blaschke (2014): Effects of riverbank restoration during floods on the removal of dissolved organic carbon by soil passage - a scenario analysis. *Journal of Hydrology*. 512: 195-205.
- J. Vierheilig**, C. Frick, R.E. Mayer, A.K.T. Kirschner, G.H. Reischer, J. Derx, R.L. Mach, R. Sommer, A.H. Farnleitner (2013): *Clostridium perringtonis* is not suitable for the indication of fecal pollution from ruminant wildlife but is associated with excreta from nonherbivorous animals and human sewage. *Applied and Environmental Microbiology*. 79(16): 5089-5092.
- J. Vierheilig**, A.H. Farnleitner, D. Kollanur, G. Blöschl, G.H. Reischer (2012): High abundance of genetic *Bacteroidetes* markers for total fecal pollution in pristine alpine soils suggests lack in specificity for feces. *Journal of Microbiological Methods*. 88(3): 433-435.
- G.H. Reischer, D. Kollanur, **J. Vierheilig**, C. Wehrspau, R.L. Mach, R. Sommer, H. Stadler, A.H. Farnleitner (2011): Hypothesis-driven approach for the identification of fecal pollution sources in water resources. *Environmental Science & Technology*. 45(9): 4038-4045.

Book chapters:

- A.K.T. Kirschner, G.G. Kavka, G.H. Reischer, R. Sommer, A.P. Blaschke, M. Stevenson, **J. Vierheilig**, R.L. Mach, A.H. Farnleitner (2015): Microbiological quality of the river Danube: status quo and future perspectives. In: *The Handbook of Environmental Chemistry, special volume “The Danube River Basin”* (Liska I, ed), Springer Verlag; Berlin. 39: 439-468.

Other publications:

- J. Vierheilig**, J. Krampe, N. Kreuzinger (2022): Analyse von SARS-CoV-2 im Abwasser als ergänzende Informationsquelle für das Pandemie-Management – ein Beispiel für die Anwendung des abwasserepidemiologischen Ansatzes. In A.H. Farnleitner, A.K.T. Kirschner, C. Frick, P. Proksch, W. Vogl, U. Schauer, B. Schrammel, F. Zibuschka (Hrsg.): *ÖWAV-Arbeitsbehef 52, Mikrobiologie und Wasser - Teil 2: Fallstudien zur Illustration der neuen diagnostisch-analytischen Möglichkeiten*. Wien, Österreich: Österreichischer Wasser- und Abfallwirtschaftsverband, Wien, S. 62-66.
- A.K.T. Kirschner, C. Rehm, **J. Vierheilig**, A.H. Farnleitner (2022): *Vibrio cholerae* non-O1/non-O139: ein „Emerging Pathogen“ in Badegewässern im Zuge des Klimawandels. In A.H. Farnleitner, A.K.T. Kirschner, C. Frick, P. Proksch, W. Vogl, U. Schauer, B. Schrammel, F. Zibuschka (Hrsg.): *ÖWAV-Arbeitsbehef 52, Mikrobiologie und Wasser - Teil 2: Fallstudien zur Illustration der neuen diagnostisch-analytischen Möglichkeiten*. Wien, Österreich: Österreichischer Wasser- und Abfallwirtschaftsverband, Wien, S. 11-15.

J. Derx, J. Komma, P. Reiner, **J. Vierheilig**, D. Savio, R. Sommer, A.K.T. Kirschner, C. Frick, R. Linke, A.H. Farnleitner, A. P. Blaschke (2021): Using hydrodynamic and hydraulic modelling to study microbiological water quality issues at a backwater area of the Danube to support decision-making. *Österreichische Wasser- und Abfallwirtschaft*. 73: 482–489. <https://doi.org/10.1007/s00506-021-00797-7>.

A.K.T. Kirschner, G. Lindner, S. Jakwerth, **J. Vierheilig**, I.H. van Driezum, J. Derx, A.P. Blaschke, D. Savio, A.H. Farnleitner (2021): Assessing biological stability in a porous groundwater aquifer of a riverbank filtration system: combining traditional cultivation-based and emerging cultivation-independent in situ and predictive methods. *Österreichische Wasser- und Abfallwirtschaft*. 73: 490–500. <https://doi.org/10.1007/s00506-021-00801-0>.

#### Invited Talks (\* presenting author):

**J. Vierheilig\***, M. Woegerbauer\* (2022): Antibiotikaresistenzen in der Umwelt Österreichs. *Symposium zum 15. EAAD*. Vienna, Austria; 17. November 2022.

**J. Vierheilig\*** (2022): AMR in der aquatischen Umwelt – Situation Österreich. *ÖWAV Seminar „Spurenstoffe in der aquatischen Umwelt“*. Vienna, Austria; 22. June 2022.

**J. Vierheilig\***, N. Kreuzinger (2022): Erweiterte abwasserbasierte Epidemiologie von SARS-CoV-2 am Beispiel Wien. *ÖWAV Seminar „Mikrobiologie und Wasser – Was DNA- & RNA-Analytik bereits alles für uns leisten“*. Vienna, Austria; 14. June 2022.

**J. Vierheilig\***, N. Kreuzinger (2022): Wastewater-based epidemiology: a useful public health tool to monitor SARS-CoV-2 and support pandemic management. *Progress in Bioscience Technologies*. Institute of Chemical, Environmental and Bioscience Engineering, TU Wien, Vienna, Austria; 06. May 2022.

R.E. Mayer\*, R. Linke, **J. Vierheilig**, G.H. Reischer, R.L. Mach, A.K.T. Kirschner, M. Zessner, A.H. Farnleitner, R. Sommer (2021): High persistence of genetic and cultivation-based bacterial fecal indicators in communal waste water at 5°C supports proportional autosampling procedures over 24h. *1<sup>st</sup> HRWM Webinar Mini-Symposium: Traditional and molecular indicators to characterise sewage in wastewater-based epidemiology*. 03. December 2021.

**J. Vierheilig\*** (2018): From the discovery and characterization of novel nitrifying archaea and bacteria to water quality and health. *Progress in Bioscience Technologies*. Institute of Chemical, Environmental and Bioscience Engineering, TU Wien, Vienna, Austria; 07. December 2018.

**J. Vierheilig\*** (2018): Bakterienzellzahlen und deren Aktivitäten in Grund- und Trinkwasser - Was sagen sie aus? *Symposium Groundwater Resource Systems Vienna*. Vienna, Austria; 07. November 2018.

M. Mooshammer\*, K. Kitzinger, **J. Vierheilig**, C. Herbold, A. Schintlmeister, W. Wanek, A. Richter, S. Jones, H. Kjeldal, J.L. Nielsen, P.H. Nielsen, M. Wagner (2017): Cyanate as substrate for nitrifiers in the environment. *5<sup>th</sup> International Conference on Nitrification and Related Processes*. Vienna, Austria; 23. - 27. July 2017.

**J. Vierheilig\***, K. Kitzinger, I.M. Head, M. Mussmann, H. Daims, C. Herbold, M. Albertsen, H. Koch, P. Pjevac, P. Han, M. Palatinszky, P.H. Nielsen, E.V. Lebedeva, M. Pogoda, N. Jehmlich, M. Wagner (2016): Revisiting old dogmas in nitrification research. *Geosciences seminar*. School of Civil Engineering and Geosciences, Newcastle University, UK. 12. February 2016.

M. Wagner\*, T. Woyke, T.K. Lee, R. Malmstrom, A. Pommerening-Röser, N. Holzschek, R. Kubasch, K. Kitzinger, P. Pjevac, **J. Vierheilig**, N. Ahlers, M. Albertsen, P.H. Nielsen, H. Daims, C. Herbold (2016): Things you can do with heavy water: Microcolony mini-metagenomics of active nitrifiers. *16<sup>th</sup> ISME Conference*. Montreal, Canada; 21. - 26. August 2016.

#### Conference proceedings:

**J. Vierheilig**, A.H. Farnleitner, G.H. Reischer (2010): Genetic markers for total faecal pollution and their faecal indication performance. *1<sup>st</sup> Austrian National Young Water Professionals Conference*, Vienna, Austria; 9. - 11. June 2010; in: "Proceedings of 1<sup>st</sup> YWP Conference" (2010), Paper-Nr. IWA-4455, 5 S.

#### Conference presentations – Talks (\* presenting author):

**J. Vierheilig\***, I. Dielacher, K. Slipko, S. Galazka, M. Woegerbauer, J. Krampe, N. Kreuzinger (2023): Surveillance of antibiotic resistance genes in Austrian wastewater treatment plants within the Danube River basin. *44<sup>th</sup> IAD Conference*. Krems, Austria; 6. – 9. February 2023.

I. Schachner-Gröhs\*, C. Kolm, **J. Vierheilig**, M. Leopold, G. Zarfel, M. Koller, C. Kittinger, S. Jakwerth, R. Linke, S. Kolarević, M. Kračun-Kolarević, E. Toth, A.H. Farnleitner, A.K.T. Kirschner (2023): Occurrence of antibiotic resistance genes along gradients of faecal pollution in water and biofilm samples from the whole Danube River. *44<sup>th</sup> IAD Conference*. Krems, Austria; 6. – 9. February 2023.

I. Dielacher\*, K. Slipko, N. Kreuzinger, E. Radu, **J. Vierheilig** (2022): Effects of wastewater sampling, sample storage, and processing on concentration measurements of antibiotic resistant genes and other molecular biological analyses. *12<sup>th</sup> Micropol & Ecohazard Conference*. Santiago de Compostela, Spain; 6. – 10. June 2022.

A. Kirschner\*, G. Lindner, S. Jakwerth, **J. Vierheilig**, I. van Driezum, J. Derx, P. Blaschke, D. Savio, A. Farnleitner (2022): Kultivierungsbasierte und kultivierungsunabhängige Methoden zur Bewertung der biologischen Stabilität von Grundwasser am Beispiel eines porösen Grundwasserleiters eines Flussuferfiltrationssystems. *37<sup>th</sup> Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine*. Bad Ischl, Austria; 31. May – 2. June 2022.

**J. Vierheilig**, D. Savio, S. Jakwerth, J. Houdek, M. Karl, T. Goll, H. Brandl, W. Kandler, M. Sliwinska-Bartel, G. Lindner, S. Knetsch, A.P. Blaschke, R. Sommer, A.H. Farnleitner, A.K.T. Kirschner (2021): Investigating the biostability of drinking water resources by combining flow cytometric and taxonomic analysis of bacterial community dynamics. *The International Society of Subsurface Microbiology ISSM 2020 Conference*. Ermelo, Netherlands; 1. – 6. November 2020 (accepted; cancelled due to COVID-19 pandemic).

**J. Vierheilig\***, D. Savio, S. Jakwerth, M. Karl, R. Sommer, G. Lindner, S. Knetsch, A.H. Farnleitner, A.K.T. Kirschner (2019): Flow cytometric analysis of microbial growth dynamics to determine the biostability of drinking water resources. *Visions in Cytometry - 29<sup>th</sup> Annual Conference of the German Society for Cytometry (DGfZ)*. Berlin, Germany; 25. - 27. September 2019.

C. Frick, **J. Vierheilig**, H. Zornig, R. Antensteiner, C. Baumgartner, C. Bucher, A.P. Blaschke, J. Derx, A.K.T. Kirschner, G. Ryzinska-Paier, R. Mayer, D. Seidl, T. Nadiotis-Tsaka, R. Sommer, A.H. Farnleitner (2019). Poikilothermic animals as a previously unrecognized source of fecal indicator bacteria. *20<sup>th</sup> International Symposium on Health-Related Water Microbiology*. Vienna, Austria; 15. - 20. September 2019.

- K. Dimitri Kits, M-Y. Jung, C.J. Sedlacek, **J. Vierheilig**, P. Pjevac, N. Brüggemann, M. Wagner, H. Daims\* (2018): Nitric oxide and nitrous oxide production by comammox *Nitrospira*. *23<sup>rd</sup> European Nitrogen Cycle Meeting*. San Juan, Alicante, Spain; 19. - 21. September 2018.
- A. Daebeler\*, C.W. Herbold, A. Müller, **J. Vierheilig**, C.J. Sedlacek, P. Pjevac, M. Albertsen, R.H. Kirkegaard, J.R. de la Torre, H. Daims, M. Wagner (2018): Exploring the metabolic versatility of “*Candidatus Nitrosocaldus islandicus*”, an obligately thermophilic, ammonia-oxidizing Thaumarchaeon. *International Congress on Extremophiles 2018*. Ischia, Italy; 16. - 20. September 2018.
- A. Daebeler\*, C.W. Herbold, A. Müller, **J. Vierheilig**, C.J. Sedlacek, P. Pjevac, M. Albertsen, R.H. Kirkegaard, J.R. de la Torre, H. Daims, M. Wagner (2018): Exploring the metabolic versatility of “*Candidatus Nitrosocaldus islandicus*”, an obligately thermophilic, ammonia-oxidizing Thaumarchaeon. *17<sup>th</sup> ISME Conference*. Leipzig, Germany; 12. - 17. August 2018.
- J. Vierheilig\***, K. Kitzinger, I.M. Head, C. Herbold, M. Albertsen, M. Mooshammer, H. Daims, P.H. Nielsen, M. Wagner (2016): Thaumarchaeota in a nitrifying oil refinery wastewater treatment plant. *IWA Microbial Ecology in Water Engineering & Biofilms joint specialist conference*. Copenhagen, Denmark; 4. - 7. September 2016.
- P. Pjevac\*, C. Herbold, T.K. Lee, K. Kitzinger, J. Simonis, **J. Vierheilig**, R. Bowers, T. Woyke, M. Wagner, H. Daims (2016): Raman-based sorting of single nitrifier microcolonies isolated from activated sludge flocs. *IWA Microbial Ecology in Water Engineering & Biofilms joint specialist conference*. Copenhagen, Denmark; 4. - 7. September 2016.
- C. Frick\*, **J. Vierheilig**, T. Nadiotis-Tsaka, A.K.T. Kirschner, S. Ixenmaier, A.P. Blaschke, G.H. Reischer, J. Derx, R. Sommer, A.H. Farnleitner (2016): Elucidating the sources of faecal pollution in an alluvial water resource by a multi-parametric microbial source tracking approach. *35<sup>th</sup> Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine*. Zell am See, Austria; 30. May - 2. June 2016.
- J. Vierheilig\***, G.H. Reischer, D.F. Savio, C. Frick, A.P. Blaschke, J. Derx, R. Sommer, R.L. Mach, A.H. Farnleitner (2014): Bacterial population structure analysis in a complex backwater area by next generation sequencing (NGS) to support the development of faecal pollution detection in the future. *34<sup>th</sup> Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine*. Bad Ischl, Austria; 02. - 05. June 2014.
- A.H. Farnleitner\*, G.H. Reischer, R. Sommer, R.L. Mach, A.K.T. Kirschner, **J. Vierheilig**, H. Stadler, W. Zerobin (2013): Microbial water quality management at all time scales: from faecal source tracking to near real-time water abstraction at karstic groundwater resources. *17<sup>th</sup> International Symposium on Health-Related Water Microbiology*. Florianopolis, Brazil; 15. - 20. September 2013.
- G.H. Reischer, N. Schuster, **J. Vierheilig**, R.E. Ley, A.H. Farnleitner\* (2013): The co-evolution of host and intestinal microbiota? – Towards a unified system for molecular faecal indication and source tracking. *2<sup>nd</sup> Water Research Conference*. Singapore; 20. - 23. January 2013.
- J. Vierheilig\***, A.H. Farnleitner, D. Kollanur, G. Blöschl, G.H. Reischer (2012): Importance of evaluating genetic markers for faecal pollution applied in water quality management. *International Forum - Contest 'Topical Issues of Rational Use of Natural Resources'*. St. Petersburg State Mining University, Russia; 25. - 27. April 2012.
- A.H. Farnleitner\*, H. Stadler, **J. Vierheilig**, R. Sommer, R.L. Mach, A.K.T. Kirschner, G.H. Reischer (2012): Integrating molecular source tracking into target-oriented microbial water quality management and catchment protection; *33<sup>rd</sup> Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine*. Salzburg, Austria; 21. - 24. May 2012.
- A.H. Farnleitner\*, **J. Vierheilig**, R. Sommer, R.L. Mach, A.K.T. Kirschner, G. Reischer (2011): Integrating faecal source tracking into target-oriented microbial water quality management and catchment protection; *16<sup>th</sup> International Symposium on Health-Related Water Microbiology*. Rotorua, New Zealand; 18. - 23. September 2011.
- G. Reischer\*, **J. Vierheilig**, R. Ley, A.H. Farnleitner (2011): Potential of next generation sequencing methods for water quality monitoring; *16<sup>th</sup> International Symposium on Health-Related Water Microbiology*. Rotorua, New Zealand; 18. - 23. September 2011.
- J. Vierheilig**, A.H. Farnleitner, G.H. Reischer\* (2010): Evaluating genetic markers for total faecal pollution in well characterised catchment areas located in Austrias Eastern Calcareous Alps. *32<sup>nd</sup> Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine*. Vienna, Austria; 17. - 20. May 2010; in: "Abstractband - 32. Jahrestagung der ÖGHMP", (2010), Paper-Nr. S5-3, S. 31-32.
- J. Vierheilig\***, A.H. Farnleitner, G.H. Reischer (2010): Genetic markers for total faecal pollution and their faecal indication performance. *1<sup>st</sup> Austrian National Young Water Professionals Conference*. Vienna, Austria; 9. - 11. June 2010; Paper-Nr. IWA-CONFERENCES-S-09-04725, 2 S.

#### Conference presentations – Posters (\* presenting author)

- S. Galazka\*, I. Dielacher, **J. Vierheilig**, E. Radu, V. Vigl, R. Kriz, K. Spettel, M. Woegerbauer (2023): Impact of flooding on antibiotic resistance gene concentrations in soils of the Donau-Auen National Park. *44<sup>th</sup> IAD Conference*. Krems, Austria; 6. – 9. February 2023.
- I. Dielacher\*, S. Galazka, E. Radu, N. Kreuzinger, M. Wögerbauer, U. Klümper, T.U. Berendonk, **J. Vierheilig** (2023): Occurrence of antibiotic resistance genes in two tributaries of the Danube along different environmental gradients. *44<sup>th</sup> IAD Conference*. Krems, Austria; 6. – 9. February 2023.
- J. Vierheilig\***, I. Dielacher, K.A. Slipko, A. Masseron, M. Woegerbauer, S. Galazka, E. Radu, J. Derx, R. Linke, S. Cervero-Aragó, J. Krampe, N. Kreuzinger (2022): Systematic Determination Of Antibiotic Resistance Genes In Soil, Wastewater And Surface Water In Austria. *6<sup>th</sup> Conference on the Environmental Dimension of Antibiotic Resistance (EDAR6)*. Gothenburg, Sweden; 22. – 27. September 2022.
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D. Savio\*, G.H. Reischer, P. Stadler, **J. Vierheilig**, I. Wilhartitz, A.H. Farnleitner (2013): Elucidating the prokaryotic population structure/dynamics in water resources for water quality monitoring-perspectives by high-throughput sequencing. *3<sup>rd</sup> Meeting Fresh Blood for Fresh Water - Young Aquatic Science*. Lunz am See, Austria; 27. February - 1. March 2013.

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C. Frick\*, **J. Vierheilig**, G.H. Reischer, A.K.T. Kirschner, A.H. Farnleitner, Regina Sommer (2012): Occurrence and abundance of bacterial standard faecal indicators for water quality monitoring in faeces of wildlife animals; *33<sup>rd</sup> Annual Meeting of the Austrian Society for Hygiene, Microbiology and Preventive Medicine*. Salzburg, Austria; 21. - 24. May 2012.

**J. Vierheilig\***, A.H. Farnleitner, G.H. Reischer (2011): High abundance of genetic *Bacteroidetes* markers for total fecal pollution in pristine alpine soils suggests lack in specificity for feces. *16<sup>th</sup> International Symposium on Health-Related Water Microbiology*. Rotorua, New Zealand; 18. - 23. September 2011.

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**J. Vierheilig (2014):** *Bacteroidetes* and other alternative bacterial indicators for faecal pollution analysis of water: applicability, population structures, and dynamics. PhD Thesis. *Research Group: Environmental Microbiology and Molecular Ecology, Research Division: Biotechnology and Microbiology, Institute of Chemical Engineering, Vienna University of Technology, Vienna, Austria (within the Vienna Doctoral Programme on Water Resource Systems & the Interuniversity Cooperation Centre Water and Health)*, pp. 1-197.

#### Master Thesis ("Diplomarbeit"):

**J. Vierheilig (2009):** Phylogenetic and physiological characterization of sulfamethoxazole degrading microorganisms in wastewater. (Published in German: "Phylogenetische und physiologische Charakterisierung von Sulfamethoxazol-abbauenden Mikroorganismen im Abwasser", Diplomarbeit im Studiengang Biologie). Master Thesis. *Department of Biotechnology, University of Wuerzburg, Germany (in cooperation with the Bavarian Environment Agency, Munich, Germany and the Institute of Water Quality Control, Technische Universität München, Munich, Germany)*, pp. 1-108.