

Biosketch

Dr.ⁱⁿ rer. nat. Petra Pjevac

Position in CoE: Key Researcher

Personal Details

Place of birth	Zagreb, Croatia
Nationality	Croatian
Children	3 (2013, 2014, 2016)
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Profile	ResearcherID: ABE-9919-2021
List of publications	ORCID: 0000-0001-7344-302X
Academic age	7 years since PhD



Academic Career and Positions Held

I earned my **Master's degree** in marine microbiology in 2009, from the **Max Planck Institute (MPI)** for Marine Microbiology (Department of Molecular Ecology), within the International Max Planck Research School (IMPRES) MarMic, in Bremen, Germany. In 2014, I obtained my PhD from the same institution and department, and remained there as a postdoctoral researcher for 9 months after graduation. In 2015, I joined the research group of Prof. Dr. Holger Daims in the Division of Microbial Ecology at the **University of Vienna** as **postdoctoral researcher**. After the foundation of the **Joint Microbiome Facility (JMF)** of the Medical University of Vienna and the University of Vienna in 2018, I accepted the position of senior scientist in the facility. Since 2020, I am also a **Group Leader** at the **Division of Microbial Ecology** within the Centre for Microbiology and Environmental Systems Science at the University of Vienna. My research until 2018 focused on environmental microbiomes, and since 2018 I also study microorganisms in clinical and preclinical systems.

Scientific Achievements and Scientific Contribution to the CoE

Scientific Achievements. I apply **(meta)genomics and (meta)transcriptomics** to investigate microbial functional potentials and activities. I use this data to predict and test **microbial physiologies** and **metabolic interactions** between microbes, and hosts and microbes. I was a part of the team that discovered completely nitrifying bacteria (**comammox**) in 2015, a recent key discovery within the N cycle. Besides my role as senior scientist in the JMF, I also the coordinator a **Young Independent Researcher Group** funded with **2.5 million €** to investigate the interplay between **biological nitrification inhibitors**, N cycling and agronomic nitrogen use efficiency. I am also Co-PI in a Research Cooperability Program Project investigating geothermal spring microbiomes, awarded 280,000 € by the Croatian Research Foundation in 2019.

Scientific Contribution to the CoE. I will contribute to the CoE as Co-PI in projects revolving about **N-cycling** and **terrestrial microbiology**. Also, as scientist in the JMF, I will contribute by assuring the implementation of **harmonized sequencing data acquisition** for all CoE projects that rely on amplicon, (meta) genome or (meta)transcriptome sequencing data. Additionally, I will contribute my expertise in the analysis of microbiome sequence data, primarily through capacity building, i.e., teaching sequence data analysis to junior researchers employed on CoE projects producing sequencing data.

10 Most Important Publications (*relevant for the CoE)

1. *Séneca, J.; Söllinger, A.; Herbold, C. W.; **Pjevac, P.**; Prommer, J.; Verbruggen, E.; Sigurdsson, B. D.; Peñuelas, J.; Janssens, I. A.; Ulrich, T.; Tveit, A. T.; Richter, A. Increased Microbial Expression of Organic Nitrogen Cycling Genes in Long-Term Warmed Grassland Soils. *ISME COMMUN.* **2021**, *1* (1), 69. <https://doi.org/10.1038/s43705-021-00073-5>.
2. *Seki, D.; Mayer, M.; Hausmann, B.; **Pjevac, P.**; Giordano, V.; Goeral, K.; Unterasinger, L.; Klebermaß-Schrehof, K.; De Paepe, K.; Van de Wiele, T.; Spittler, A.; Kasprian, G.; Warth, B.; Berger, A.; Berry, D.; Wisgrill, L. Aberrant Gut-Microbiota-Immune-Brain Axis Development in Premature Neonates with Brain Damage. *Cell Host & Microbe* **2021**, *29* (10), 1558-1572.e6. <https://doi.org/10.1016/j.chom.2021.08.004>.
3. *Baumgartner, M.; Lang, M.; (2 autors); **Pjevac, P.**; (20 authors). Mucosal Biofilms Are an Endoscopic Feature of Irritable Bowel Syndrome and Ulcerative Colitis. *Gastroenterology* **2021**, *161* (4), 1245-1256.e20. <https://doi.org/10.1053/j.gastro.2021.06.024>.
4. ***Pjevac, P.**; Hausmann, B.; Schwarz, J.; Kohl, G.; Herbold, C. W.; Loy, A.; Berry, D. An Economical and Flexible Dual Barcoding, Two-Step PCR Approach for Highly Multiplexed Amplicon Sequencing. *Front. Microbiol.* **2021**, *12*, 669776. <https://doi.org/10.3389/fmicb.2021.669776>.
5. *Séneca, J.; **Pjevac, P.**; Canarini, A.; Herbold, C. W.; Zioutis, C.; Dietrich, M.; Simon, E.; Prommer, J.; Bahn, M.; Pötsch, E. M.; Wagner, M.; Wanek, W.; Richter, A. Composition and Activity of Nitrifier Communities in Soil Are Unresponsive to Elevated Temperature and CO₂, but Strongly Affected by Drought. *ISME J* **2020**, *14* (12), 3038–3053. <https://doi.org/10.1038/s41396-020-00735-7>.
6. *Sedlacek, C. J.; Giguere, A. T.; Dobie, M. D.; Mellbye, B. L.; Ferrell, R. V.; Woebken, D.; Sayavedra-Soto, L. A.; Bottomley, P. J.; Daims, H.; Wagner, M.; **Pjevac, P.** Transcriptomic Response of Nitrosomonas Europaea Transitioned from Ammonia- to Oxygen-Limited Steady-State Growth. *mSystems* **2020**, *5* (1), e00562-19. <https://doi.org/10.1128/mSystems.00562-19>.
7. *Yang, Y.; Daims, H.; Liu, Y.; Herbold, C. W.; **Pjevac, P.**; Lin, J.-G.; Li, M.; Gu, J.-D. Activity and Metabolic Versatility of Complete Ammonia Oxidizers in Full-Scale Wastewater Treatment Systems. *mBio* **2020**, *11* (2), e03175-19. <https://doi.org/10.1128/mBio.03175-19>.
8. *Kits, K. D.; Jung, M.-Y.; Vierheilig, J.; **Pjevac, P.**; Sedlacek, C. J.; Liu, S.; Herbold, C.; Stein, L. Y.; Richter, A.; Wissel, H.; Brüggemann, N.; Wagner, M.; Daims, H. Low Yield and Abiotic Origin of N₂O Formed by the Complete Nitrifier Nitrospira Inopinata. *Nat Commun* **2019**, *10* (1), 1836. <https://doi.org/10.1038/s41467-019-09790-x>.
9. *Kits, K. D.; Sedlacek, C. J.; Lebedeva, E. V.; Han, P.; Bulaev, A.; **Pjevac, P.**; Daebeler, A.; Romano, S.; Albertsen, M.; Stein, L. Y.; Daims, H.; Wagner, M. Kinetic Analysis of a Complete Nitrifier Reveals an Oligotrophic Lifestyle. *Nature* **2017**, *549* (7671), 269–272. <https://doi.org/10.1038/nature23679>.
10. Daims, H.; Lebedeva, E. V.; **Pjevac, P.**; Han, P.; Herbold, C.; Albertsen, M.; Jehmlich, N.; Palatinszky, M.; Vierheilig, J.; Bulaev, A.; Kirkegaard, R. H.; von Bergen, M.; Rattei, T.; Bendinger, B.; Nielsen, P. H.; Wagner, M. Complete Nitrification by Nitrospira Bacteria. *Nature* **2015**, *528* (7583), 504–509. <https://doi.org/10.1038/nature16461>.