

## Guest editors and authors of the special issue: Soil biodiversity in a rapidly changing world



Prof. Dr. Ralf Conrad obtained Ph.D. degree in microbiology at the University of Göttingen in 1976, and became a professor in 1986 at the University of Konstanz. He co-founded the Max-Planck-Institute for Terrestrial Microbiology in Marburg with Prof. Rolf Thauer in 1991. Prof. Conrad is a leading figure in biogeochemical cycling of atmospheric trace gases, and in 1970s he has envisioned that soil and ocean can function as a source, a sink, or both for the cycling of trace gas, which is largely regulated by microorganisms. He established the thermodynamic theory of sequential reduction in terrestrial aquatic ecosystem based on different microbial guild which explained the microbial mechanisms of soil as source or sink for atmospheric trace gases. Prof. Conrad has served as scientific advisory committee of various international organizations and received numerous prestigious awards including Fellow of the American Geophysical Union and Einstein Professorship of Chinese Academy of Science. Prof. Conrad has 458 publications including 388 research articles in peer-reviewed journals and 70 reviews, book articles and other essays. He is a former Editor-in-Chief of FEMS Microbiology Ecology.



David Myrold is a Professor of soil microbiology in the Department of Crop and Soil Science at Oregon State University, USA. He earned his Ph.D. in Microbiology at Michigan State University in 1984. During his research career he has studied most of the major processes in the soil nitrogen cycle (nitrogen fixation, nitrogen mineralization and immobilization, nitrification, and denitrification), often using stable isotopes as a means of measuring process rates. In the last decade he has investigated the connection between the composition of bacterial and fungal communities as it relates to soil nitrogen and carbon cycling. Dr. Myrold is a Fellow of the American Society of Agronomy and Soil Science Society of America, and was a joint recipient of the Soil Science Research Award. Dr. Myrold is the current Editor-in-Chief of Soil Science Society of America Journal.



Prof. Paolo Nannipieri has covered the Chair of Agricultural Biochemistry at the Faculty of Agriculture at the University of Firenze and he has been the Head of the Department of Agrifood and Environmental Sciences and the Department of Agrifood Production and Environmental Sciences. He has nominated Emeritus Professor in November 2017. He is author and co-author of about 250 publications (one in Nature), mostly in International Scientific Journals. He has been the International Representative of the Italian Society of Soil Science at IUSS and president of the Italian Society of Agricultural Chemistry and of the Commission Soil Biology of the IUSS. Research topics concern soil biochemistry including soil proteomics, plant nutrition, biochemical interactions at the plant-soil interface, and bioremediation of polluted soils. He has received the Lifetime Achievement Award “Terrestrial Enzymology” during the meeting “Enzymes in the Environment. Ecology, Activity & Applications”, in Bangor, Wales, UK, in 2016. He has been a Highly Cited Researcher in 2015 (only 44 Italian Researchers) and 2016 according to Thomson Reuters. He is the Editor-in-Chief of Biology and Fertility of Soils and a member of the Editorial Board of Arid Soil Research and Rehabilitation.



Dr. Aimee Classen is an Associate Professor in the Rubenstein School of Environment & Natural Resources at the University of Vermont, USA. She received her Ph.D. in 2004 from Northern Arizona University and has held positions at Oak Ridge National Laboratory, The University of Tennessee, and the University of Copenhagen. Broadly, her work explores how ecosystems function and how interactions, both biotic and abiotic, influence patterns and processes within and among ecosystems. Her research happens across scales from the micro (soil food webs) to the macro (regional carbon fluxes) as well as across diverse terrestrial ecosystems (forests, meadows, bogs, tropics, boreal, temperate). Classen uses a combination of observations, experiments, and models to answer ecological questions. Classen is the co-PI of the WaRM (Warming and Removal in Mountains) projects that explores how warming and changes in species interactions will alter ecosystem function in mountains around the world. She is the Editor-in-Chief of Ecological Monographs and has served on the editorial boards of a number of other journals.



Prof. Dr. Christoph C. Tebbe is a Scientific Director at the Thünen Institute of Biodiversity, Federal Research Centre for Rural Areas, Forestry and Fisheries, and a Professor for Microbiology at the Technical University of Braunschweig, Germany. For more than a decade, he supports as an advisor the European Food Safety Authority EFSA in Parma, Italy, with expertise in the field of environmental risk assessment of genetically modified plants and microorganisms as well as the applications of omics-technologies. He published over 100 peer-reviewed articles with original research related to microbial ecology with an emphasis on macromolecular analyses (nucleic acids, proteins) and isotope techniques to characterize microbiomes. He is the initiator and chair of the triannual International Thünen Symposium on Soil Metagenomics which takes place in 2019 for the fourth time. He is a former editor of FEMS Microbiology Ecology, and the acting Editor-in-Chief of the European Journal of Soil Biology.



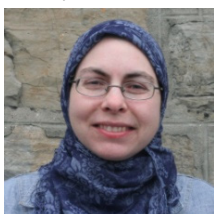
Dr. Zhongjun Jia is a Distinguished Professor of Chinese Academy of Sciences (CAS), and his research themes focus on microbial ecology and evolution. Dr. Jia obtained his Ph.D. in 2002 at the Institute of Soil Science, CAS, and conducted postdoctoral researches in USA, Japan, and Germany. He joined CAS in 2008 through the Hundred Talents Program of CAS and was awarded best of the best of 100-talent awardees (20%) in 2012. Dr. Jia's research themes include the ecology and evolution of ammonia oxidizers and methane oxidizers, environmental microbiomes and ecosystem health, and the state-of-the-art techniques for microbiome function. Dr. Jia has been extensively involved in national research plans of soil microbiomes as the leading principal investigator, and has published 91 papers in refereed English journals (52 papers since 2014) with 1/3 in the top-tier journals including Nature Communications (1) and The ISME Journal (6) and Soil Biology and Biochemistry (12). He is an Associate Editor of Biogeosciences—an international scientific journal of the

European Geosciences Union.



Prof. Fatima Maria de Souza Moreira was a researcher at the National Institute of Amazonia Research (Brazil) from 1978 to 1993. Since 1993, she has been a Full Professor at the Soil Science Department in the Federal University of Lavras (Brazil). From 2002 to 2010, she was the Brazilian Coordinator of the project "Conservation and Sustainable Management of Below-Ground Biodiversity" (GF2715/02), which was globally coordinated by the TSBF/CIAT, with funding from GEF/UNEP. She has published 230 papers in specialized journals, 12 papers in national and international conference proceedings, 46 chapters in books, and 4 books. She has also edited 13 books. She has advised about 200 graduate and undergraduate students. Since March 2011, she is coordinating the Graduate Programme in Soil Science/UFLA. Since 2008, she has worked as an Associate Editor of the Brazilian Journal of Soil Science, and from 2015 to 2019, she was President of Brazilian

Society of Soil Science.



Joann K. Whalen is a Full Professor and William Dawson Scholar at McGill University, Canada. Dr. Whalen is also a professional agronomist in Quebec, Canada. Her research and teaching are in the areas of soil fertility, nutrient management planning, soil biogeochemistry and soil ecology in agroecosystems. She has published more than 190 peer-reviewed scientific publications and supervised/co-supervised more than 65 students at the M.Sc. and Ph.D. levels. Dr. Whalen is senior author of the textbook "Soil Ecology and Management" published in 2010 by CABI Publishers. She is a Chief Editor for Soil Biology and Biochemistry and a Subject Editor for Applied Energy.



Prof. Guanghua Wang received his Ph.D. from Harbin Institute of Technology, China. He was elected as a scientist under the Hundred Talents Program of Chinese Academy of Sciences in 2010. He is the chair professor of Molecular Ecology of Farmlands in Northeast Institute of Geography and Agroecology, CAS. He also acts as the vice director of Key Laboratory of Mollisols Agroecology, CAS and the vice president of Microbiology Society of Heilongjiang Province. His major research fields include soil microbial ecology in black soils, environmental viral ecology and biocontrol of plant diseases. He has published more than 103 SCI papers.



Takeshi Watanabe is an Associate Professor of Soil Biology and Chemistry at Graduate School of Bioagricultural Sciences, Nagoya University, Japan. He obtained his Ph.D. in Agriculture at Nagoya University in 2008. He was a JSPS Research Fellowship for Young Scientists from 2008 to 2009 and an Assistant Professor of Soil Biology and Chemistry from 2009 to 2016. His research interests include ecology and physiology of microorganisms involved in the biogeochemistry of paddy field ecosystem, for example, methanogenic archaea, hydrogen-producing bacteria, sulfate-reducing bacteria, and iron-oxidizing bacteria.



Prof. Suresh Deka completed his Ph.D. in Microbial Ecology from Guwahati University, India, in 1991, and has more than 27 years of research experience in the fields of hydrocarbon degradation, bioremediation, biosurfactant, and plant diseases management. He has more than 100 publications/presentations and filed 5 patents. He served the Institute of Advanced Study in Science and Technology (IASST), an autonomous Institute under Department of Science and Technology, Government of India, since 1991, and retired from here as a senior Professor in September 2018. Presently, Dr. Deka is working as an Honorary Professor, Life Sciences Division, IASST.



Dr. Marcela Hernández is an Environmental Microbiologist with a Ph.D. in Natural Resources. In 2010, she received an award from the Alexander von Humboldt Foundation to perform her postdoctoral research at the Max Planck Institute for Terrestrial Microbiology, in Marburg, Germany. In 2015, she moved to the UK to become an NERC research fellow in Environmental Microbiology at the University of Southampton (UoS). Dr. Hernández is currently doing a research stay as a Humboldt fellow at the Thünen Institute for Biodiversity, Braunschweig, Germany. Her career is dedicated to studying how microbial communities establish in soils perturbed either by human manipulation or natural disturbance, specifically methanogens in paddy rice soils, carbon monoxide oxidisers in volcanic soils and antimicrobial resistance in agricultural soils. She uses high throughput sequencing and stable-isotope probing to assess community diversity and function. Dr. Hernández is

an editor of the Journal of Applied Microbiology and a member of the Executive Committee of the Society for Applied Microbiology, UK.