



PROF. ANTON HARTMANN (EMERITUS)

Former Head of the Research Unit Microbe-Plant Interactions, Department of Environmental Sciences, Helmholtz Zentrum for Health and Environment, Munich/Neuherberg, Germany, and Apl. Professor of Host-Microbe-Interactions, Faculty of Biology, Biozentrum, Ludwig-Maximilian-University Munich, Planegg, Germany

Dr. Anton Hartmann is retired Professor at Ludwig-Maximilian-University Munich, Faculty of Biology, where he gave regular lectures, seminars, and practical courses on soil microbiology, microbial ecology of rhizosphere bacteria, and prokaryote-eukaryote interactions from 1990 to 2017. He had studied biochemistry at University of Tuebingen (Dipl. biochem.) and got his doctoral degree at the Institute of Microbiology in 1979. He was assistant professor at University of Bayreuth (Genetic department), then Research Associate at the Department of Biochemistry at the University of Wisconsin, Madison, USA in Prof. R.H. Burris' laboratory on regulation of nitrogen fixation in *Azospirillum*. Back in Bayreuth, he joined the microbial department and got the university teaching degree (Habilitation) in 1989. In 1989 he joined Helmholtz Zentrum Munich (GSF-Munich), Institute of Soil Ecology, where he was deputy director and leader of the research group on „Molecular microbial ecology of rhizosphere bacteria“. Since 2007, he was leading the Research Unit „Rhizosphere Biology“, and later the independent Research Unit „Microbe-Host Interactions“. He organized an interdisciplinary research team at Helmholtz Zentrum Munich on „Molecular Interactions in the Rhizosphere“ from 2001 to 2009. He conducted several national and international research projects.. In 2004, Dr. Hartmann organized together with European colleagues the first international Rhizosphere conference, commemorating the definition of the term „Rhizosphere“ by Prof. Dr. Lorenz Hiltner in 1904. In 2007, he and his research associates received the „Schrödinger Research Award“ of the German Science Board.

Dr. Hartmann's research focused since many years on biological nitrogen fixation of root associated bacteria, especially on *Azospirillum* spp.. His group and research associates identified 12 new species of diazotrophic bacteria associated with diverse crop plants. Furthermore, he studied indole acetic acid production in *Azospirillum* and the influence of environmental stress parameters (e.g. salt stress) on growth and activities of plant growth promoting bacteria. In the last 20 years he also focused on effects of quorum sensing signal molecules of root associated Gram-negative bacteria, auto-inducers of the N-acyl-homoserine lactones (AHL) type, on plants. He and his research associates and collaboration partners showed an AHL-structure dependent influence on plant growth, hormonal content and immune responses, leading to priming of improved plant resistance to environmental stress and phytopathogens. He was also involved in research on the interaction of small molecules of probiotic bacteria on the human immune response. In this context, he and his collaborators identified D-tryptophan as signal molecule of probiotic *Lactobacillus* spp. stimulating specifically anti-allergic responses. He and his associates

also characterized the microbiome of plant pollens and could demonstrate that plants have a specific bacterial community associated with their pollen and he proposed an involvement in the allergenicity of pollen by pollen associated bacteria and other environmental parameters.

Dr. Hartmann published 190 research publications and 57 contributions to books.