CURRICULUM VITAE

Julia A. Vorholt

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ACADEMIC POSITIONS

Since 2012	**Full Professor** of Microbiology at ETH Zurich, Switzerland
2006-2012	**Associate Professor** of Microbiology at ETH Zurich, Switzerland
2001-2006	**Independent Group leader** CNRS (Laboratoire des Interactions Plantes Microorganismes), Toulouse, France (exchange program Max-Planck-Society/CNRS)
2002	Habilitation in Microbiology. Philipps-University, Marburg, Germany
1999-2001	**Group leader**, Max-Planck-Institute for Terrestrial Microbiology, Marburg, Germany
1998	**Postdoc**, University of Washington, Seattle, USA (Supervisor: Prof. M.E. Lidstrom)

EDUCATION

1994-1997	**PhD** (Dr. rer. rat.) Max-Planck-Institute for Terrestrial Microbiology, Marburg, Germany Supervisor: Prof. R. Thauer. "Summa cum laude"
1991-1994	**Master** of Science Biology (Diplom) at the Philipps University, Marburg, Germany
1989-1991	Undergraduate studies Biology (Vordiplom) at the University of Bonn, Germany

AWARDS

2024	Elected international member of the US National Academy of Sciences (NAS)
2024	Feodor-Lynen medal of the German Society for Biochemistry and Molecular Biology (GBM)
2020	ERC Advanced Grant (SYMBIOSES)
2019	Elected member of the European Molecular Biology Organisation (EMBO)
2015	Elected member of the European Academy of Microbiology (EAM)
2015	ERC Advanced Grant (PhyMo)
2012	Elected member of the German National Academy of Sciences Leopoldina
2012	"Researcher of the Month", Foundation Gen Suisse
2005	Phyllosphere 50th Anniversary conference presentation award, Oxford
1999	PhD thesis award of the German Society for General and Applied Microbiology (VAAM)
1998	Otto-Hahn medal of the Max-Planck-Society for outstanding young scientists

INSTITUTIONAL AND ACADEMIC RESPONSIBILITIES

Since 2020	Co-Director Swiss National Centre of Competence in Research (NCCR) Microbiomes
2020-2022	Director of Studies, Department of Biology, ETH Zurich
2018-2020	Initiator and coordinator of the biology curriculum reform "Biology according to first principles" (*de novo* design of the BSc biology curriculum ETH Zurich D-BIOL)
2018-2020	Chair, Institute of Microbiology, ETH Zurich
2018-2020	Postdoc mentor / career advisor Scientific Staff Association of D-BIOL, ETH Zurich
2017-2022	Steering committee, Functional Genomics Center Zurich (FGCZ)
2015-2022	Member of Teaching Commission D-BIOL, ETH Zurich
2014-2019	Study advisor Microbiology and Immunology, D-BIOL, ETH Zurich
2014-2018	Member of Steering board Center for Adaptation to Changing Environments, ETH Zurich
2014-2017	Member of Steering board Genetic Diversity Center, ETH Zurich
2010-2012	Chair, Institute of Microbiology, ETH Zurich
Since 2009	Member of Selection committees Professorships ETH Zurich (8 in total)

INTERNATIONAL BOARDS AND MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2019-2023	Board of Directors of the Internatl. Society for Molecular Plant Microbe Interactions (MPMI)
2017-2022	Board of Directors of the Internatl. Society for Microbial Ecology (ISME)
Since 2015	Member of the European Academy of Microbiologists
Since 2012	Member of AcademiaNet, Expert Database of Outstanding Female Scientists and Scholars
Since 2007	Member of the International Society for Molecular Plant Microbe Interactions (MPMI)
Since 2006	Member of the Swiss Society for Microbiology (SGM/SSM)
Since 1998	Member of the American Society for Microbiology (ASM)
Since 1994	Member of the German Society for General and Applied Microbiology (VAAM)

TEACHING ACTIVITIES (annual, SS=Spring semester, FS=Fall semester)
Bachelor lecture "Fundamentals of Biology 1: From Molecules to the Biochemistry of Cells" for biology, biochemistry, interdisciplinary sciences and pharmaceutical science students (20 hours (FS) ≈ 300 participants)
Bachelor and master Concept lecture "Microbiology" (14 hours (SS) ≈ 90 participants)
Master course lecture "Microbial Biochemistry" (14 hours (SS) ≈ 35 participants)
Bachelor Biology 1 practical course, part microbiology (8 days by lab members, 300 participants)
Bachelor Block course "Plant Microbiomes " (4-week practical course (SS) 8 participants)
Bachelor Block course "Engineering Bacterial Metabolism" (4-week practical course (FS) 6 participants)

ORGANIZATION OF INTERNATIONAL SCIENTIFIC MEETINGS

2022	LOC/SOC: ISME-18 Lausanne, Switzerland 2022; Latsis Symposium Origin and Prevalence of Life, Switzerland; International Phyllosphere Microbiology Conference, Davis, USA
2019	Co-Chair Banbury meeting The Plant Microbiota (Cold-Spring Harbor Laboratory), New York, USA
2017	Chair EMBO conference Bacterial Networks, Sant Feliu, Spain
2017	Co-Organizer EMBO Plant Microbiota workshop, Cologne, Germany
2015	Co-Chair ESF/EMBO conference Bacterial Networks, Sant Feliu, Spain
2015	Chair 10th International Symposium on Phyllosphere Microbiology, Monte Verità, Switzerland
2012	Chair Gordon Research Conference "Molecular basis of microbial one carbon metabolism", USA
2010	Co-Chair Gordon Research Conference "Molecular basis of microbial one carbon metabolism", USA

EDITOR AND EDITORIAL BOARDS

Since 2014	Microbiology and Molecular Biology Reviews (MMBR) (Editor)
2013-2019	Applied and Environmental Microbiology (Editorial Board)
2011-2020	Environmental Microbiology (Editorial Board)
2013-2021	ISME J. (Editorial Board)
2017-2018	Current Opinion Microbiology (Guest Editor)
2006-2013	Microbiology (Editor)

REVIEWING ACTIVITIES AND SCIENTIFIC ADVISORY BOARDS

Since 2020	MiCRop, Microbial Imprinting for crop resilience, Amsterdam, the Netherlands
2014-2022	Swiss National Science Foundation (SNSF) committee Advanced Postdoc program
2013-2021	AgBiome, Raleigh, North Carolina, USA
2012-2021	Max-Planck-Institute for Marine Microbiology, Bremen, Germany
2008-2017	German Collection for Microorganisms and Cell Cultures (DSMZ), Braunschweig, Germany
2008-2014	German Research Foundation (DFG); Priority program "Biological transformations of hydrocarbons in the absence of oxygen"

INVITED LECTURES (*selection 2017-2024):*
Feodor Lynen Lecture, Mosbacher Kolloquium, The microbiome – from Understanding to Modulation, Mosbach, Germany 2024 • **New Frontiers in Plant Biology,** CBGP, Madrid, Spain 2024 • **FEMS congress** (plenary), Hamburg, Germany 2023 • **Gordon Research Conference on Molecular Basis of Evolution,** Easton, USA, 2023 • **Novo Nordisk Foundation Science cluster conference Plant Microbe Interactions** (keynote), Favrholm, DK, 2022 • **Targeting Mitochondria**, Berlin, Germany, 2022 • **Novozymes Plant Biology**, Tübingen, Germany, 2022 • **ISME conference** Lausanne, Switzerland, 2022 • **International Phyllosphere Microbiology Conference**, Davis, USA, 2022 • **Canadian Soc Phytopathol Annual meeting** (keynote) (virtual), 2022 • **Harnessing the Plant Microbiome** - Nature Conference, virtual - host UC Davis, USA, 2021 • **EMBO EMBL Symposium: New Approaches and Concepts in Microbiology**, virtual - host EMBL, 2021 • **CSHL Single Cell Analyses Meeting,** New York, USA, 2019 • **EMBO conference Bacterial Networks**, Sant Feliu, Spain, 2019 • **Engineering Life**, Dresden, Germany, 2019 • **Molecular Plant Microbe Interactions**, Glasgow, UK, 2019 • **FEMS Microbiology congress**, Glasgow, UK, 2019 • **SEB meeting**, Sevilla, Spain, 2019 • **Banbury meeting**, Cold Spring Harbor Laboratories, New York, USA 2019 • **One2many**, Weizmann Institute, Israel, 2018 • **How microbes view their world**, Marburg, Germany, 2018 • 2nd **International Plant Microbiome Symposium**, Amsterdam, The Netherlands, 2018 • Private learning session "Plant Microbiomes" **Bill Gates**, Seattle, USA, 2018 • **Gordon Research Conference** "Applied and Environmental Microbiology", Mount Holyoke, USA, 2017 • Plenary Lecture, **American Society for Microbiology (ASM) General Meeting**, New Orleans, USA, 2017 • **Novo Nordisk conference**, Data-driven Biotechnology conference, Copenhagen, Denmark, 2017 • **VIB conference**, Frontiers in Plant Biology, Ghent, Belgium, 2017 • **Microbiota Symposium**, Osnabrück, Germany, 2017

SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS

Since 2006 20 postdocs; 28 PhD students as supervisor and 45 as committee member; 35 master theses and 80 semester theses (ETH Zurich, Department of Biology, Switzerland)
ETH medal for their outstanding PhD theses: Christoph G. Gäbelein (2023), Johannes Hartl (2019), Daniel B. Müller (2017), Andreas Kaczmarczyk (2015).

2001 - 2006 2 postdocs, 2 PhD students, 2 master theses (CNRS / Université Paul Sabatier Toulouse)

1998 - 2001 2 PhD students (MPI Marburg / Philipps University Marburg, Germany)

CONTRIBUTIONS TO EARLY CAREERS OF EXCELLENT RESEARCHERS (examples)

Sebastian Pfeilmeier (Postdoc 2018-2022), now Assistant Professor University of Amsterdam, the Netherlands • Johannes Hartl (PhD student 2014-2018), now group leader Charité Berlin, Germany • Tobias J. Erb (Postdoc 2011-2012 and Ambizione group leader, SNSF 2012-2014), now Director Max-Planck-Institute for terrestrial Microbiology, Germany) • Mitja Remus-Emsermann (Postdoc 2011-2014), now Associate Professor Free University Berlin, Germany) • Claudia Knief (Postdoc, Research Associate 2005-2011), now Associate Professor University of Bonn, Germany • Julia Frunzke (EMBO long-term Fellow 2008-2009), now group leader Research Center Jülich and Associate Professor University of Düsseldorf, Germany • Benjamin Gourion (PhD student and postdoc, 2004-2009); now CNRS, Research Associate CR1, LIPME Toulouse, France • Carlos Nieto Penalver (PhD student, 2001-2005); now Conicet / Professor University of Tucuman, Argentina)

PUBLICATIONS

h-index (scholar)): 79; i10-index 170; total 24950

In total 180 articles and reviews; 4 book chapters and 4 patents, including *Nature, Science, Cell, Cell Host Microbe, Nature Biotechnology, Nature Microbiology, Nature Catalysis, Nature Metabolism, Nature Genetics, Nature Plants, Nature Ecology Evolution, Nature Methods, Nature Chemical Biology, Nature Struct Mol Biology, Nature Communications, PNAS, PLOS Biology, PLOS Genetics, ISME J., Current Biology*

10 Selected original publications:

Reiter MA*, Bradley T*, Büchel LA, Keller P, Gassler T, Vorholt JA (2024) A synthetic methylotrophic *Escherichia coli* as a chassis for bioproduction. ***Nature Catalysis*** doi.org/10.1038/s41929-024-01137-0

Schäfer M*, Pacheco AR*, Künzler R, Field CM, Vayena E, Hatzimanikatis V, Vorholt JA (2023) Metabolic interaction models recapitulate leaf microbiota ecology. ***Science*** 381 (6653) eadf5121.

Chen W*, Guillaume-Gentil O*, Rainer PY, Gäbelein CG, Saelens W, Gardeux V, Klaeger A, Dainese R, Zachara M, Zambelli T, Vorholt JA[#], Deplancke B[#] ([#]equal senior authors) (2022) Live-seq enables temporal transcriptomic recording of single cells. ***Nature*** 608:733-740.

Gäbelein CG, Feng Q, Sarajlic E, Zambelli T, Guillaume-Gentil O, Kornmann B, Vorholt JA (2022) Mitochondria transplantation between living cells. ***PLOS Biology*** 20:e3001576.

Pfeilmeier S, Petti GC, Bortfeld-Miller M, Daniel B, Field CM, Sunagawa S, Vorholt JA (2021) NADPH oxidase RBOHD is required for microbiota homeostasis in leaves. ***Nature Microbiol*** 6:852-864.

Carlström CI, Field CM, Bortfeld-Miller M, Müller B, Sunagawa S, Vorholt JA (2019) Synthetic microbiota reveal priority effects and keystone strains in the *Arabidopsis* phyllosphere. ***Nature Ecol Evol*** 3:1445-1454.

Guillaume-Gentil O, Grindberg R, Kooger R, Dorwling-Carter L, Ossola D, Pilhofer M, Zambelli T, Vorholt JA (2016) Tunable single cell extraction for molecular analyses. ***Cell*** 166, 506-516.

Bai Y*, Müller DB*, Srinivas G*, Garrido-Oter R*, Potthoff E, Rott M, Dombrowski N, Münch PC, Spaepen S, Remus-Emsermann M, Hüttel B, McHardy A, Vorholt JA[#], Schulze-Lefert P[#] ([#]equal senior authors) (2015) Functional overlap of the *Arabidopsis* leaf and root microbiota. ***Nature*** 528:364-369.

Erb TJ*, Kiefer P*, Hattendorf B, Günther D, Vorholt JA (2012) GFAJ-1 is an arsenate-resistant, phosphate-dependent organism. ***Science*** 337:467-470.

Delmotte N*, Knief C*, Chaffron S, Innerebner G, Roschitzki B, Schlapbach R, von Mering C, Vorholt JA (2009) Community proteogenomics reveals insights into the physiology of phyllosphere bacteria. ***Proc Natl Acad Sci USA*** 106:16428-16433.

3 Selected review articles:

Vorholt JA, Vogel C, Carlström CI, Müller DB (2017) Establishing causality: Opportunities of synthetic communities for plant microbiome research. ***Cell Host Microb***. 22:142-155.

Müller DB, Vogel C, Bai Y, Vorholt JA (2016) The plant microbiota: Systems-level insights and perspectives. ***Annu Rev Genetics*** 50:211-234.

Vorholt JA (2012) Microbial life in the phyllosphere. ***Nature Rev Microbiol.*** 10:828-840.