JIZHONG ZHOU
(As of 11-24-2019)

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CITIZENSHIP US Naturalized date: April 12, 2001

EDUCATION

BS	1978-1981	**Plant Pathology & Entomology**, Hunan Agri. University, Changsha, China
MS	1982-1984	**Mathematical Ecology**, Hunan Agr. University, Changsha, China,
Ph.D.	1990-1993	**Molecular Biology**, Washington State University, Pullman, WA
Postdoc	1993-1995	**Microbial ecology**, Center for Microbial Ecology, Michigan State University, East Lansing, MI, Advisor, James M. Tiedje
	1996-1997	**Microbial ecology**, DOE Alexander Hollaender Distinguished Postdoctoral Fellow, Environmental Sciences Division, Oak Ridge National Laboratory (ORNL), Mentor, Anthony V. Palumbo

MAJOR PROFESSIONAL EXPERIENCE

2019-2020	Visiting Professor, Department of Ecology and Evolution, Princeton University, with Dr. Simon Levin
2005-Present	George Lynn Cross Research Professor and Presidential Professor, Department of Microbiology and Plant Biology, University of Oklahoma, Norman, OK
2005-present	Director of the Institute for Environmental Genomics (IEG), University of Oklahoma, Norman, OK
2015-present	Professor, School of Civil Engineering and Environmental Sciences, University of Oklahoma, Norman, OK
2006-present	Adjunct Senior Scientist, Lawrence Berkeley National Laboratory (LBL)
2009-present	Adjunct Professor, School of Environment, Tsinghua University, Beijing, China
2013-2015	Visiting Professor, Department of Civil and Environmental Engineering, Stanford University
2013-2014	Visiting Investigator, Department of Global Ecology, Carnegie Institution for Science, Stanford, CA, with Dr. Chris Field.
1997-2015	Staff Scientist, Senior Staff Scientist, and then Distinguished R&D Staff Scientist, Environmental Sciences Division, ORNL

MAJOR AWARDS AND HONORS

Awards

2019	2019 ASM Award for Environmental Research (*for recognizing an outstanding scientist with distinguished research achievements in microbial ecology and environmental microbiology*).
2015	The Ernest Orlando Lawrence Award in Biological and Environmental Sciences in 2014 (*U.S Department of Energy's highest scientific award established by President Dwight Eisenhower in 1959*). In **Congressional Records** (E1092, July 21, 2015).
2013	OU VPR Research Award for Exceptional Achievements in Research and Creative Activity
2009	R & D 100 Award for GeoChip development by R&D Magazine (*R&D magazine presents awards annually to the 100 most innovative scientific and technical breakthroughs of the year*).
2001	Presidential Early Career Award for Scientists and Engineers from the President of the United State of America (*The highest honor for young scientists and engineers in US*)
2001	Environmental Sciences Division Distinguished Scientific Achievement Award, ORNL
1996	Alexander Hollaender Distinguished Postdoctoral Fellow

Honors

2019	World's most cited researcher (99% percentile) across all science & engineering fields among 7M scientists (https://doi.org/10.1371/journal.pbio.3000384), ranked at top 75 of >55K environmental scientists worldwide.
2018-2019	Global highly cited researcher in Cross-field based on the numbers of top 1% highly cited publications by Web of Science. (https://hcr.clarivate.com/).
2019	Most highly cited researcher (H-index > 100) according to their Google Scholar Citations (http://www.webometrics.info/en/hlargerthan100)
2018	Fellow of Ecological Society of America
2014	George Lynn Cross Research Professor, the most prestigious honor for OU faculty (the most prestigious honor for OU faculty)
2010-2013	One-Thousand Talent Scholar (Class B).
2008	Fellow of American Association for the Advancement of Science.
2007-present	Honorary Director for Chinese Association of Microbial Ecology (CAME)
2005	Presidential Professor, University of Oklahoma
2005	Fellow of American Academy of Microbiology
2004-present	US Ambassador for International Society of Microbial Ecology

MAJOR PROFESSIONAL SERVICE

Editors

2017-present	Senior Editor for ISME Journal (*Top 1 journal in ecology)*
2009-2019	Senior Editor for mBio®, ASM flagship journal
2014-present	Section Editor for Microbial Ecology and Evolution, BMC Microbiology
2003-2013	Editor, Applied and Environmental Microbiology (*a leading microbiology journal*)

Committees

2016-2017	Committee member for Microbiomes of the Built Environment by the National Academies of Sciences, Engineering, and Medicine
2014-present	Member of Steering Committee, NASA Omics Initiative, NASA, Wash DC
2011-2014	Member of Local Organizing Committee, The 15th International Symposium on Microbial Ecology (ISME-15)
2013-2016	Member of ASM International Board's Committee on Global Engagement (CGE).
2011-present	Member of Environmental Microbiology Committee, Public and Scientific Affairs Board, ASM
2011-2015	Member of Selection Committee, William A. Hinton Research Training Award, ASM
2009-2014	Founding Chair, Board of Directors, the Overseas Chinese Society for Microbiology (Sino_Micro)
2009-2012	Member, Nominations Committee for the Promega Biotechnology Award, ASM
2006-2009	Member of ASM International Committee - Task Force on China
2001	Panel member for preparing the roadmap for Genomes to Life program, US Department of Energy, in charge of writing Goal 3 on community genomics.
1999-2003	Chair for 7th, 9th, and 11th International Conference on Microbial Genomes

MAJOR RESEARCH INTEREST AND PROGRAM

Major expertise is in microbial ecology and genomics with current research focused on: (**i**) molecular community ecology and metagenomics, particularly in terrestrial soils and groundwater ecosystems important to climate change, bioenergy and environmental remediation, (**ii**) theoretical ecology, particularly network ecology, and community assembly mechanisms, (**iii**) experimental evolution and functional genomics of microorganisms important to environment and bioenergy, (**iv**) development of high throughput metagenomic technologies, and (**v**) bioinformatics, ecoinformatics and ecological modeling.

Major Current funded research projects Since moving from ORNL to OU in 2006, has 37 projects in genomics and microbial ecology with a total funding of >$40M., Had 35 projects of $26M at ORNL:

1. From Genomes to Ecosystems: Systems-Level Mechanistic Understanding of Microbial Stress Responses at Chromium Contaminated Sites. DoE. PI, $3,500K (Oct. 1. 2017-Sept. 30, 2022)(A part of LBL SFA: ENIGMA- Paul Adams and Adam Arkin are the Program Directors).
2. Establishment to senescence: plant-microbe and microbe-microbe interactions mediate switchgrass sustainability, DOE, Co-PI with Firestone et al, $2,500K for J. Zhou (Oct.1, 2015 – Sept. 30, 2020)
3. iSENTRY: An integrated Microfluidics-enabled system for phenotypic detection of biothreat agents. Department of Defense, DARPA program, Co-PI with James Samuel, Arum Han and Paul de Figueiredo etc., $880K for J. Zhou (Dec. 1, 2018 to Nov. 30, 2022).

Major achievements include: (**i**) transformational leadership in developing a revolutionary high throughput genomic technologies for establishing linkages of microbial biodiversity to ecosystem functions; (**ii**) pioneering advances in developing computational technologies for network construction and community assembly mechanisms (**iii**) pioneering demonstrations of groundwater microbiome diversity, distribution, succession, activities stability, and their underlying mechanisms in response to heavy metals and bioremediation treatments; (**iv**) ground-breaking discoveries in understanding the feedbacks, mechanisms and principles of microbial systems in response to climate changes, (**v**) pathbreaking advancements in theoretical ecology of microbial systems.

MAJOR PERSONNEL

Staff scientists (current): Daliang Ning (genomics, environmental engineering), Liyou Wu (Genomic technologies), Gangsheng Wang (ecosystem modeling), Naijia Xiao. (mathematics), Joy Van Nostrand (microbial ecology), Aifen Zhou. (Molecular biology), Ying Fu (Technician), Lindsay Rice (Secretary).
Ph. D. Graduate Students (current): Jonathan Michael, 2023, Carolyn Cornell, 2022, Colin Bates, 2020; Jiajie Feng 2019; Xuanyu Tao, 2021; Yupeng Fan, 2022.
Postdocs (Current): Ya Zhang, Yajiao Wang; Megan Kempher; Weiling Shi; Linwei Wu, Jialiang Kuang.
Visiting Students and Scholars (current). Qiqi, Peng Shi, Dashuai Mu, Xiaolan Lin, a total of 20.

FELLOWSHIP ESTABLISHED

Dr. Zhou established a Fellowship ("Jizhong Zhou-Xiaoya Shi Award") at the School of Environment, Tsinghua University, with main purposes to recognize excellent graduate students in microbial ecology, environmental science and engineering at Tsinghua University. Similar Fellowship has been established at OU for graduate students in Arts & Sciences, Environmental Engineering, and Computer Sciences.

INVITED TALKS

Giving numerous invited talks at major national and international conferences, universities, and institutes, such as an ASM Divisional lecturer, and Australian Society of Microbiology Visiting Speaker for cruise lectures to various institutions, and Special keynote talk at Chinese Academy of Sciences under the special seminar series, "Sciences and China".

MAJOR SIGNIFICANT PUBLICATIONS AND PATENTS

Authored numerous publications, with total citations of >40,000 & H-index of **106** based on Google Scholar; citations of ~30,000 & H-index of **91** based on Web of Science. **133** papers published in Nature indexed journals, such as *Science* (4), *Nature Climate Change* (3)*, PNAS* (10), *Nature Communication* (4), *Ecology Letters* (2), *The ISME Journal* by Nature Publishing Group (43) (The top one journal in microbial ecology), *Environmental Science & Technology* (22), *Water Research* (10), and *Geochim et Cosmochim Acta* (2), and other prestigious journals, e.g., *Nature Ecology & Evolution* (2), *Nature Microbiology* (1), *Nature Review in Microbiology* (2), *Nature Plants (1), Microbiology and Molecular Biology Reviews* (1), *mBio* (16), *Ecology* (1), *Global Change Biology* (9). He held **3** US patents.

A. Representative publications in experimental genomics technologies

1. Zhou et al. 2015. High-Throughput Metagenomic Technologies for Complex Microbial Community Analysis: Open and Closed Formats. **mBio** 6:e02288-14 (*top 1% highly cited*).
2. Zhou et al. 2013. Random Sampling Process Leads to Overestimation of β-Diversity of Microbial Communities. **mBio 4:** e00324-13.

3. Zhou et al. 2011. Reproducibility and Quantitation of Amplicon Sequencing-Based Detection. **ISME J**, 5:1303-1313 (*top 1% highly cited*)
4. He et al. 2007. GeoChip: A comprehensive microarray for investigating biogeochemical, ecological, and environmental processes. **ISME J**, 1: 67-77 (*Among the 5 top-cited papers for the first 10 years).*
5. Zhou et al. 1996. DNA recovery from soils of diverse composition. **Appl. Environ. Microbiol**. 62: 316-322 (*>3,200 citations*) (Among the 20 most cited papers in AEM history, since 2008)

B. Representative publications in computational technologies

1. Ning et al. 2019. A General Framework for Quantitatively Assessing Ecological Stochasticity. **Proc. Nat. Acad. Sci.**, 116: 16893-16898.
2. Deng et al. 2016. Network succession reveals the importance of competition in response to emulsified vegetable oil amendment for uranium bioremediation. **Environ. Microbiol**., 18: 205-218;
3. Deng, Y., Y. Jiang, Y. Yang, Z. He, F. Luo, and **J.-Z. Zhou**. 2012. Molecular Ecological Network Analyses. **BMC Bioinformatics**, 13:113 (*top 1% highly cited*)
4. Zhou et al. 2011. Phylogenetic Molecular Ecological Network of Soil Microbial Communities in Response to Elevated CO_2. **mBio**, 2: e00122-11
5. Zhou et al. 2010. Functional Molecular Ecological Networks. **mBio** 1:e00169-10

C. Representative publications in environmental remediation

1. Wu, et al. 2019. Global diversity and biogeography of bacterial communities in wastewater treatment plants. **Nature Microbiology**, 4:1183–1195.
2. Zhou et al. 2014. Stochasticity, Succession and Environmental Perturbations in a Fluidic Ecosystem. **Proc. Nat. Acad. Sci**., 111: E836-E845. (*top 1% highly cited*)
3. Hazen et al. 2010. Deep-sea oil plume enriches Indigenous oil-degrading bacteria. **Science**, 330: 204-208. (t*op 1% highly cited*)
4. Xu et al. 2010. Responses of microbial community functional structures to pilot-scale uranium *in situ* bioremediation. **ISME J 4**:1060-1070
5. Liu et al. 1997. Thermophilic Fe(III)-reducing bacteria from the deep subsurface: The evolutionary implications. **Science** 277: 1106-1109.

D. Representative publications in climate change biology

1. Guo et al. 2019. Climate warming accelerates temporal scaling of grassland soil microbial biodiversity. **Nature Ecol & Evol., 3**, 612–61.
2. Guo et al. 2018. Climate Warming Leads to Divergent Succession of Grassland Microbial Communities. **Nature Climate Change**. 8:813-818.
3. Xue et al. 2016. Tundra soil carbon is vulnerable to rapid microbial decomposition under climate warming. **Nature Climate Change**, 6: 595-600 (*top 1% highly cited*)
4. Zhou et al. 2012. Microbial Mediation of Carbon Cycle Feedbacks to Climate Warming. **Nature Climate Change**, 2:106-110. (*top 1% highly cited*)
5. He et al. 2010. Metagenomic analysis reveals a marked divergence in the structure of belowground microbial communities at elevated CO_2. **Ecol. Lett**, 13: 564-575

E. Representative publications in theoretical ecology

1. Buzzard et al. 2019. Continental scale structuring of forest and soil diversity via functional traits. **Nature Ecol. & Evol.**, **3**, 1298–1308
2. Zhou and Ning. 2017. Stochastic Community Assembly: Does It Matter in Microbial Ecology? **Microbiology and Molecular Biology Reviews**, 81:e00002-17 (*top 1% highly cited*)
3. Zhou et al. 2016. Temperature mediates continental-scale diversity of microbes in forest soils. **Nature Communication**, 7:12083, doi:10.1038/ncomms12083 (*top 1% highly cited*)
4. Zhou et al. 2008. Spatial Scaling of Functional Gene Diversity across Various Microbial Taxa. **Proc Nat. Acad. Sci**. 105: 7768-7773.
5. Zhou et al. 2002. Spatial and resource factors influencing high soil microbial diversity. **Appl. Environ. Microbiol**. 68: 326-334