HONGHEN JIANG

State Key Laboratory of Biogeology and Environmental Geology, China University of Geosciences, 388 Lumo Road, Hongshan District, Wuhan, PR China, 430074; email: jiangh@cug.edu.cn

EDUCATION:
Ph. D., 2003-2007, Miami University (Oxford, OH, USA), Geomicrobiology
M. S., 2000-2003, China University of Geosciences (Beijing), Sedimentology
B. S., 1996-2000, Beijing Capital Normal University, Geography

PROFESSIONAL EXPERIENCE
Professor, State Key Laboratory of Biogeology and Environmental Geology, China University of Geosciences, Wuhan, Nov 2011–present
Assistant Professor, School of Earth Sciences and Resources, China University of Geosciences, Beijing, May 2008–Oct 2011
Postdoctoral Research Associate, Institute for Environmental Genomics, University of Oklahoma, Jan 2008 – May 2008

Board members:
The Geomicrobiology Committee of the Chinese Society for Microbiology;
The Geobiology Division of the Chinese Society for Paleontology;
The Salt Resource and Environment Specialized Committee of the Chinese Geological Society

Research Interest:
Mainly engaged in the study of microbial ecology, biogeochemical processes, element cycles, ecological impacts and environmental responses in extreme habitats such as saline environments (saline lakes and wetlands), geothermal environments (hot springs), cryogenic environments (glaciers, groundwater), and arid environments (deserts).

Publications (SCI indexed journal articles 170+), below are selected important SCI articles on geomicrobiology in saline/salt lakes from the last 5 years:

1) Pingping Zhang, Min Cai, Mingxian Han, Jibin Han, Xiying Zhang, Jian Yang, **Hongchen Jiang***(2025) Increased anoxia promotes organic carbon mineralization in surface sediments of saline lakes. Journal of Earth Science, in press;
2) Jian Yang, Bingfu Yao, Min Cai, Mingxian Han, Zenghui Wu, Pingping Zhang, Hailiang Dong, **Hongchen Jiang*** (2025) Salinity change overrides nitrogen addition in affecting microbial abundance, diversity, community composition and organic carbon mineralization in saline lakes. Journal of Earth Science, in press;

3) Jian Yang, Pingping Zhang, Min Cai, Mingxian Han, Zenghui Wu, Jinbin Han, Xiying Zhang, **Hongchen Jiang*** (2025) Methanogenesis rather than carbon dioxide production frives positive priming effects in anoxic sediments of saline lakes. Chemical Geology, in press;
4) Yuan-Guo Xie, Yan-Ling Qi, Zhen-Hao Luo, Yan-Ni Qu, Jian Yang, Shi-Qiang Liu, Hai-long Yang, Dan-Wei Xie, Zimeng Wang, **Hong-Chen Jiang*** and Zheng-Shuang Hua* (2025) Deciphering the dynamics of viral diversity, lifestyles, and host interactions in response to lake salinization driven by global warming. Communications Earth & Environment, in press;
5) Han Jibin, Wang Jianping, Ma Hongkui, Li Yongshou,*, An Zhao, Han Wenhua, Cheng Huaide, Ma Haizhou, **Jiang Hongchen*** (2025) Flow variation and circulation process of saline springs in the Nangqen Basin, Tibetan Plateau. Journal of Earth Science, in press;
6) Mingxian Han, Huiying Yu*, Jianrong Huang, Chuanxu Wang, Xin Li, Xiaodong Wang, Liu Xu, Jingjing Zhao, Hongchen Jiang* (2024) Limited microbial contribution in salt lake sediment and water to each other's microbial communities. Microorganisms, 12 (12): 2534
https://doi.org/10.3390/microorganisms12122534
7) Min Cai, Beichen Wang, Jibin Han, Jian Yang, Xiying Zhang, Xiangyu Guan, , **Hongchen Jiang*** (2024) Microbial difference and its influencing factors in ice-covered lakes on the three poles. Environmental Research 252: 118753
https://doi.org/10.1016/j.envres.2024.118753
8) Xiaoxi Sun, Ehui Tan, Beichen Wang, Zixuan Gan, Jian Yang, Jibin Han, Xiying Zhang, Shuh-ji Kao, Gary King, Hailiang Dong, **Hongchen Jiang*** (2023) Salinity change induces distinct climate feedbacks of nitrogen removal in saline lakes. Water Research 245: 120668
https://doi.org/10.1016/j.watres.2023.120668
9) Jian Yang, Liuqin Huang, Weiyu She, Geng Wu, Yunyang Wan, Hailiang Dong*, Rosalie K. Chu, and Nikola Tolic, **Hongchen Jiang*** (2023) Compositional changes of dissolved organic molecules along water flow and their influencing factors in the Three Gorges Reservoir. Chemical Geology 639: 121741;
https://doi.org/10.1016/j.chemgeo.2023.121741
10) Jian Yang, Mingxian Han, Beichen Wang, Beingfu Yao, Zenghui Wu, Xinyi Li, Li Liu, Hailiang Dong, **Hongchen Jiang*** (2023) Predominance of positive priming effects induced by algal and terrestrial organic matter input in saline lake sediments. Geochimica et Cosmochimica Acta 349: 126–134
https://doi.org/10.1016/j.gca.2023.04.005
11) Mingxian Han, Jianrong Huang, Jian Yang, Beichen Wang, Xiaoxi Sun, **Hongchen Jiang***(2023) Distinct assembly mechanisms for prokaryotic and microeukaryotic communities in the water of Qinghai Lake. Journal of Earth Science 34(4): 1189-1200
https://doi.org/10.1007/s12583-023-1812-8
12) Han Jibin, **Jiang Hongchen***, Liu Jiubo, Xu Jianxin, Han Wenhua, Zhang Haiyun (2023) Source Analysis of Lithium Deposit in Dong-Xi-Taijinaier Salt Lake of Qaidam Basin, Qinghai-Tibet Plateau. Journal of Earth Science34(4): 1083-1094
https://doi.org/10.1007/s12583-022-1802-2
13) Jianrong Huang, Jian Yang, Mingxian Han, Beichen Wang, Xiaoxi Sun, **Hongchen Jiang*** (2023) Microbial carbon fixation and its influencing factors in saline lake water. Science of the Total Environment 877: 162922
https://doi.org/10.1016/j.scitotenv.2023.162922
14) Qing Liu, Jian Yang*, Beichen Wang, Wen Liu, Zhengshuang Hua, **Hongchen Jiang*** (2022) Influence of salinity on the diversity and composition of carbon, nitrogen and sulfur cycling

genes in lake surface sediments. Frontiers in Microbiology 13: 1019010, https://www.frontiersin.org/articles/10.3389/fmicb.2022.1019010

15) Yun Fang, Jun Liu, Jian Yang, Geng Wu, Zhengshuang Hua, Hailiang Dong, Brian P. Hedlund, Brett J. Baker, **Hongchen Jiang*** (2022) Compositional and metabolic responses of autotrophic microbial community to salinity in lacustrine environments. mSystems 7(4): e00335-22. Doi:10.1128/msystems.00335-22. https://doi.org/10.1016/j.jhazmat.2022.129684

16) Jianrong Huang, Mingxian Han, Jian Yang, Andreas Kappler*, **Hongchen Jiang*** (2022) Salinity impact on composition and activity of nitrate-reducing Fe(II)-oxidizing (NRFeOx) microorganisms in saline lakes. Applied and Environmental Microbiology 88(10): e00132-22. https://journals.asm.org/doi/abs/10.1128/aem.00132-22

17) Jian Yang, Mingxian Han, Zhuoli Zhao, Jinbin Han, Xiying Zhang, Zhanling Xie, **Hongchen Jiang*** (2022) Microbial response to multiple-level addition of grass organic matter in lake sediments with different salinity. FEMS Microbiology Ecology 98(4): fiac046. https://doi.org/10.1093/femsec/fiac046

18) **Hongchen Jiang***, Qiuying Lv, Jian Yang, Beichen Wang, Hailiang Dong, Michael Gonsior, Philippe Schmitt-Kopplin (2022) Molecular composition of dissolved organic matter in saline lakes of the Qing-Tibetan Plateau. Organic Geochemistry 167: 104400. https://doi.org/10.1016/j.orggeochem.2022.104400

19) Xiaoxi Sun, Jian Yang, **Hongchen Jiang***, Beichen Wang, Haiyi Xiao, Zhanling Xie, Jinbin Han, Xiying Zhang & Jianxin Xu, Dafei Gong, Xuexia Zhang, Yaoyao Wang (2022) Nitrite- and N2O-reducing bacteria respond differently to ecological factors in saline lakes. FEMS Microbiology Ecology, 98(2): fiac007. https://doi.org/10.1093/femsec/fiac007

20) Jian Yang, Mingxian Han, Zhuoli Zhao, **Hongchen Jiang*** (2022) Positive priming effects induced by allochthonous and autochthonous organic matter input in the lake sediments with different salinity. Geophysical Research Letters 49(5): e2021GL096133. https://doi.org/10.1029/2021GL096133

21) Liuqin Huang, Qun Yu, Wen Liu, Jungang Wang, Wenxiao Guo, Endong Jia, Qiang Zeng, Ruijun Qin, Jianqiu Zheng, Kirsten S. Hofmockel, Hailiang Dong, **Hongchen Jiang***, Zihua Zhu* (2021) Molecular determination of organic adsorption sites on smectite during Fe-redox processes using ToF-SIMS analysis. Environmental Science & Technology 55(10): 7123–7134. https://doi.org/10.1021/acs.est.0c08407

22) Mingxian Han, Jianrong Huang, **Hongchen Jiang***, Bao-Zhu Fang, Yuan-Guo Xie, Wenjun Li (2021) *Lunatibacter salilacus* gen. nov., sp. nov., a member of the family *'Cyclobacteriaceae',* isolated from a saline and alkaline lake sediment. International Journal of Systematic and Evolutionary Microbiology 71(2): 004621. https://doi.org/10.1099/ijsem.0.004621

23) **Hongchen Jiang*,** Jianrong Huang, Li Li, Liuqin Huang, Mehvish Manzoor, Jian Yang, Geng Wu, Xiaoxi Sun, Beichen Wang, Dilfuza Egamberdieva, Nils-Kåre Birkeland, Zihua Zhu, Wenjun Li (2021) Onshore soil microbes and endophytes respond differently to salinity and mineralogy in the Aral Sea. Science of the Total Environment 765: 142675, https://doi.org/10.1016/j.scitotenv.2020.142675

24) Beichen Wang, Jianrong Huang, Jian Yang, Haiyi Xiao, Jibin Han, Xiying Zhang, **Hongchen Jiang*** (2021) Bicarbonate uptake rates and diversity of RuBisCO genes in saline lake sediments. FEMS Microbiology Ecology 97(4): fiab037,
https://doi.org/10.1093/femsec/fiab037
25) Yun Fang, Yang Yuan, Jun Liu, Geng Wu*, Jian Yang, Zhengshuang Hua, Jibin Han, Xiying Zhang, Wenjun Li, **Hongchen Jiang*** (2021) Casting Light on the adaptation mechanisms and evolutionary history of the widespread Sumerlaeota. mBio 12(2):e00350-21.
https://doi.org/10.1128/mBio.00350-21.
26) Jianrong Huang, Mingxian Han, Baozhu Fang, Jian Yang, Haiyi Xiao, Jibin Han, Dongmei Yu, Xiying Zhang, **Hongchen Jiang***, and Wen-Jun Li* (2021) *Aquiflexum lacus* sp. nov., isolated from a lake sediment sample. Archives of Microbiology 203(6): 2911-2917.
http://link.springer.com/article/10.1007/s00203-021-02280-z
27) Han Jibin, **Jiang Hongchen**, Xu Jianxin, Ma Yunqi, Qin Xiwei (2021) Origin of boron in the Gas Hure Salt Lake of northwestern Qaidam Basin, China: evidence from hydrochemistry and boron isotopes. Acta Geologica Sinica 95(2): 531-540.
https://doi.org/10.1111/1755-6724.14377
28) Jian Yang, **Hongchen Jiang***, Xiaoxi Sun, Jianrong Huang, Mingxian Han, Beichen Wang (2021) Distinct co-occurrence patterns of prokaryotic community between the waters and sediments in lakes with different salinity. FEMS Microbiology Ecology, 97(1): fiaa234,
https://doi.org/10.1093/femsec/fiaa234
29) Jian Yang, Yao Chen, Weiyu She, Haiyi Xiao, Zheng Wang, Huanye Wang, Weiguo Liu, **Hongchen Jiang*** (2020) Deciphering linkages between microbial communities and priming effects in lake sediments with different salinity. Journal of Geophysical Research: Biogeosciences, 125(11): e2019JG005611.
https://doi.org/10.1029/2019JG005611
30) Jianrong Huang, Jian Yang, **Hongchen Jiang***, Geng Wu, Wen Liu, Beichen Wang, Haiyi Xiao, Jibin Han (2020) Microbial responses to simulated salinization and desalinization in the sediments of the Qinghai-Tibetan lakes. Frontiers in Microbiology 11:1772,
https://www.frontiersin.org/article/10.3389/fmicb.2020.01772
31) Jian Yang, **Hongchen Jiang***, Wen Liu, Liuqin Huang, Jianrong Huang, Beichen Wang, Hailiang Dong*, Rosalie K. Chu, and Nikola Tolic (2020) Potential utilization of terrestrially derived dissolved organic matter by aquatic microbial communities in saline lakes. The ISME Journal 14(9): 2313-2324.
https://doi.org/10.1038/s41396-020-0689-0
32) Jian Yang, **Hongchen Jiang***, Xiaoxi Sun, Junsong Chen, Zhanling Xie, Hailiang Dong*(2020) Minerals play key roles in driving prokaryotic and fungal communities in the surface sediments of the Qinghai-Tibetan lakes. FEMS Microbiology Ecology 96(4), fiaa035.
https://doi.org/10.1093/femsec/fiaa035

Candidate's statement:

I have been involved in geomicrobiological research on salt lakes for over 20 years. Since joining the International Society of Salt Lake Research (ISSLR) in 2014 and continuously attending its meetings, my scientific work has received extensive international recognition. Now I am proposing my candidacy for election to the Standing Committee of the ISSLR. After my election as a Standing Committee Member of ISSLR, I will work in the following two areas:

1) Actively promote international cooperation, provide a platform for domestic and international academic colleagues to cooperate, jointly discuss the environmental and ecological problems of salt lakes, and provide effective solutions for their sustainable development;
2) Promote the popularization of salt lake science and raise people's attention to their sustainable development by deepening the public's understanding of the microbiological processes of salt lakes and their impact on the environment.