

Liyuan He

Ph.D. Candidate

Joint Doctoral Program of Ecology

San Diego State University & University of California, Davis

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EDUCATION

2017.8-current	PhD Candidate	San Diego State University (SDSU) & University of California at Davis (UCD)
2014.9-2017.6	Master of Science in Ecology	Institute of Geographic Sciences and Natural Resources Research (IGSNRR), CAS
2010.9-2014.7	Bachelor of Agronomy in Forestry	Northeast Forestry University (NEFU)

PROFESSIONAL EXPERIENCE

2021.6-2021.8	Research assistant, SDSU
2019.6-2019.8	Research assistant, SDSU
2018.6-2018.8	Research assistant, SDSU
2014.9-2017.6	Research assistant, IGSNRR, CAS

PUBLICATION

1. Zhao, F., J. Wang, Y. Li, X. Xu, **L. He**, J. Wang, C. Ren, and Y. Guo. 2022. Microbial functional genes driving the positive priming effect in forest soils along an elevation gradient. *Soil Biology and Biochemistry* **165**:108498.
2. Hu, H., **L. He***, H. Ma, J. Wang, Y. Li, J. Wang, Y. Guo, C. Ren, H. Bai, and F. Zhao. 2022. Responses of AM fungal abundance to the drivers of global climate change: A meta-analysis. *Science of The Total Environment* **805**:150362. (co-first author)
3. **He, L.**, and X. Xu. 2021. Mapping soil microbial residence time at the global scale. *Global Change Biology* **27**:6484-6497.
4. **He, L.**, C. T. Lai, M. A. Mayes, S. Murayama, and X. Xu. 2021. Microbial seasonality promotes soil respiratory carbon emission in natural ecosystems: A modeling study. *Global Change Biology* **27**:3035-3051.
5. **He, L.**, D. A. Lipson, J. L. Mazza Rodrigues, M. Mayes, R. G. Björk, B. Glaser, P. Thornton, and X. Xu. 2021. Dynamics of Fungal and Bacterial Biomass Carbon in Natural Ecosystems: Site-Level Applications of the CLM-Microbe Model. *Journal of Advances in Modeling Earth Systems* **13**:e2020MS002283.
6. Zhu, X., L. Zhang, Y. Zuo, J. Liu, J. Yu, F. Yuan, N. Wang, **L. He**, Y. Wang, and Z. Guo. 2021. Wetland reclamation homogenizes microbial properties along soil profiles. *Geoderma* **395**:115075.
7. Guo, Z., Y. Wang, Z. Wan, Y. Zuo, **L. He**, D. Li, F. Yuan, N. Wang, J. Liu, and Y. Song. 2020. Soil dissolved organic carbon in terrestrial ecosystems: Global budget, spatial distribution and controls. *Global Ecology and Biogeography* **29**:2159-2175.

8. **He, L.**, J. L. M. Rodrigues, N. A. Soudzilovskaia, M. Barceló, P. A. Olsson, C. Song, L. Tedersoo, F. Yuan, F. Yuan, and D. A. Lipson. 2020. Global biogeography of fungal and bacterial biomass carbon in topsoil. *Soil Biology and Biochemistry* 151:108024.
9. Ma, J., H. Duan, **L. He**, M. Tiffany, Z. Cao, T. Qi, M. Shen, T. Biggs, and X. Xu. 2020. Spatiotemporal pattern of gypsum blooms in the Salton Sea, California, during 2000-2018. *International Journal of Applied Earth Observation and Geoinformation* 89:102090.
10. Xu, X., N. Wang, D. Lipson, R. Sinsabaugh, J. Schimel, **L. He**, N. A. Soudzilovskaia, and L. Tedersoo. 2020. Microbial macroecology: In search of mechanisms governing microbial biogeographic patterns. *Global Ecology and Biogeography* 29:1870-1886.
11. Gao, L., B. Tao, Y. Miao, L. Zhang, X. Song, W. Ren, **L. He**, and X. Xu. 2019. A global data set for economic losses of extreme hydrological events during 1960-2014. *Water Resources Research* 55:5165-5175.
12. Wang, Y., F. Yuan, F. Yuan, B. Gu, M. S. Hahn, M. S. Torn, D. M. Ricciuto, J. Kumar, **L. He**, and D. Zona. 2019. Mechanistic modeling of microtopographic impacts on CO₂ and CH₄ fluxes in an alaskan tundra ecosystem using the CLM-microbe model. *Journal of Advances in Modeling Earth Systems* 11:4288-4304.
13. Bo, Z., C. You, Z. Hu, Q. Guo, **L. He**, Y. Du, S. Li, and Y. Gan. 2017. Influence of nitrogen and water addition on the biomass in Inner Mongolia temperate steppe, China. *Chinese Journal of Applied & Environmental Biology* 23:658-664.
14. **He, L.**, Z. Hu, Q. Guo, S. Li, W. Bai, and L. Li. 2015. Influence of nitrogen and phosphorus addition on the aboveground biomass in Inner Mongolia temperate steppe, China. *Chinese Journal of Applied Ecology* 26.

HONORS & AWARDS

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| 2021.9 | YANG HANXI Best Student Paper Award, SINO-ECO |
| 2020.12 | Travel grant to attend AGU Fall Meeting 2021, California State University (CSU) |
| 2019.8 | Travel funding to attend CESM (Community Earth System Model) Tutorial Workshop, National Center for Atmospheric Research |
| 2016.12 | Second Class Scholarship for Outstanding Students, University of Chinese Academy of Sciences (UCAS) |
| 2015.12 | Second Class Scholarship for Outstanding Students, UCAS |
| 2014.12 | First Class Scholarship for Outstanding Students, UCAS |
| 2014.7 | Outstanding Graduate Awards, NEFU |
| 2013.12 | Certification of Student Research Training Program, NEFU |
| 2013.12 | First Class Scholarship for Outstanding Students, NEFU |
| 2013.7 | First Class Scholarship for Outstanding Students, NEFU |
| 2013.6 | Outstanding Students in Summer Program, Sun Yat-sen University |
| 2012.12 | Outstanding Students in Summer Program, Institute of Atmospheric Physics, CAS |
| 2012.12 | National Scholarship, Ministry of Education of China |
| 2012.7 | First Class Scholarship for Outstanding Students, NEFU |
| 2011.12 | First Class Scholarship for Outstanding Students, NEFU |
| 2011.12 | National Scholarship for Encouragement, Ministry of Education of China |
| 2011.7 | Second Class Scholarship for Outstanding Students, NEFU |

PRESENTATION & POSTER

1. **Liyuan He**, Nicolas Viovy, Xiaofeng Xu. Macroecology of soil fungi and bacteria in the United States using a data-model integration approach. AGU Fall Meeting. December 13-17, 2021. New Orleans, LA.
2. **Liyuan He**, Victoria Broadnax, Xiaofeng Xu. Global biogeography of microbial residence time. Student Research Symposium, CSU. March 19-20, 2021. Online.
3. **Liyuan He**, David Lipson, Jorge L Mazza Rodrigues, Melanie A Mayes, Robert G Bjork, Bruno Glaser, Peter E Thornton, Xiaofeng Xu. Dynamics of Fungal and Bacterial Biomass Carbon in Natural Ecosystems: Site-level Applications of the CLM-Microbe Model. AGU Fall Meeting. December 1-17, 2020. Online.
4. Olivia Yang, **Liyuan He**, Xiaofeng Xu. Soil Microbial Community Shift and its Edaphic Control Across the US. The Ecological Society of America. August 2-7, 2020. Online.
5. Wang, Y., F. Yuan, F. Yuan, B. Gu, M. S. Hahn, M. S. Torn, D. M. Ricciuto, J. Kumar, **L. He**, and D. Zona. Mechanistic modeling of microtopographic impacts on CO₂ and CH₄ fluxes in an alaskan tundra ecosystem using the CLM-microbe model. The Ecological Society of America. August 11-16, 2019. Salt Lake, US.
6. Jing Ma, Hongtao Duan, **Liyuan He**, Mary Tiffany, Zhigang Cao, Tianci Qi, Ming Shen, Stuart Hurlbert, Trent Biggs, Xiaofeng Xu. Spatiotemporal Pattern of Gypsum Blooms in the Salton Sea, California, during 2000-2018. Salton Sea Summit, October 17-18, 2019. UC Riverside/Palm Desert Campus, US
7. **Liyuan He**. Difference in relationship between vegetation, soil C:N ratio and productivity at site and regional scales. 14th Ecology Conference of China. September 23-25, 2015. Chengdu, China.

Reviewer for papers

Global Ecology and Biogeography, International Journal of Applied Earth Observation and Geoinformation, Journal of Advances in Modeling Earth Systems, Soil Biology and Biochemistry, Geoderma, Global Change Biology, Water Resources Research, and Science of the Total Environment.

PARTICIPATED PROJECTS

1. Modeling microbial processes at multiple scales (PI: Dr. Xiaofeng Xu, SDSU)
2. The relationship of terrestrial ecosystem carbon, nitrogen, and water flux and the environmental mechanisms in China (PI: Dr. Zhongmin Hu, IGSNRR, CAS)
3. Response of grassland ecosystem water use efficiency to altered precipitation regime (PI: Dr. Zhongmin Hu, IGSNRR, CAS)
4. Allopathy and its mechanisms of extract solution of *Pinus koraiensis* on *Betula platyphylla* (PI: Dr. Lixin Chen, NEFU)

OUTREACH & VOLUNTEER ACTIVITIES

1. Volunteer, Skype a Scientist, Video Demonstration Online (<https://www.skypeascientist.com>)

2. Volunteer, Graduate Group of Ecology Exhibition on Picnic Day, April 13, 2019, UCD
 3. Volunteer, Demonstration of How to Make Cheese at Smythe Academy Science night, October 15, 2018, Sacramento primary school
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