

CURRICULUM VITAE

Dr. Shenglai Yin

University of Oklahoma, and Eastern Ecology Research Center, USGS, USA

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Education

2014 - 2018	Wageningen University & Research, the Netherlands. Ph.D. in Ecology
2010 - 2014	Nanjing University, China MSc in Ecology
2006 - 2010	Nanjing University of Information Science & Technology, China BSc in Ecology

Professional Appointments

2022 - present	Postdoctoral Researcher, University of Oklahoma and Eastern Ecology Research Center, USGS, USA
2021 - 2022	Postdoctoral Researcher, Nanjing Normal University, China
2019 - 2021	Department Director, Nanjing University Ecological Research Institute of Changshu, China

Research Interests

Infectious disease, Global One Health, animal movement, global change biology, invasive ecology, and wetland ecology

Research Expertise

Agent-based model, epidemiologic model, network analysis, machine learning, high-performance computing, Google Earth Engine, GIS, and spatial analysis

Language Proficiency

English (Proficient)

Chinese Mandarin (Native)

PUBLICATIONS, REPORTS, BOOKS, and PATENTS

[Google Scholar citation](#) = 700 (updated to August 2026)

*corresponding authorship; †equal contribution

Representative publications

1. **Shenglai Yin***, et al., 2025. Landscape changes drive highly pathogenic avian influenza emergence at wild bird-poultry interface in East Asian-Australasian Flyway. *PNAS*. DOI: [10.1073/pnas.2503427122](https://doi.org/10.1073/pnas.2503427122).
2. Diann Prosser†, C. Teitelbaum†, **Shenglai Yin†**, et al. 2023. Climate impacts on birds migration and highly pathogenic avian influenza. *Nature Microbiology*. DOI: [10.1038/s41564-023-01538-0](https://doi.org/10.1038/s41564-023-01538-0).
3. **Shenglai Yin**, et al. 2023. Functional traits explain waterbirds' host status, subtype richness, and community-level infection risk for highly pathogenic avian influenza. *Ecology Letters*. DOI: <https://doi.org/10.1111/ele.14294>.

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4. **Shenglai Yin**, et al. 2022. Habitat loss facilitates infection outbreak and pathogen dispersal: An agent-based model of infected migratory waterfowl. *PLOS Computational Biology*. DOI: <https://doi.org/10.1371/journal.pcbi.1009577>.
5. **Shenglai Yin** et al., 2024. Strong and consistent associations of waterbird community composition with HPAI H5 occurrence in European wild birds, *Ecological Applications*. DOI: [10.1002/eap.3010](https://doi.org/10.1002/eap.3010).

Other lead- or corresponding-author publications

6. John Y. Takekawa, Diann J. Prosser, **Shenglai Yin***, et al., Global change and threats to waterbirds in the Asian Flyways. *Avian Research*. DOI: <https://doi.org/10.1016/j.avrs.2026.100409>.
7. Yanjie Xu[†], **Shenglai Yin**^{**} et al., Range shifts of migratory hosts facilitate avian influenza panzootics via crossroads of flyways. *in prep*.
8. **Shenglai Yin** et al., A systematic review of avian influenza virus transmission models: Gaps and opportunities. *re-submitted*.
9. **Shenglai Yin** et al., 2025. The predictable HPAI H5 outbreaks in European wild birds. *Avian Research*. DOI: [10.1016/j.avrs.2025.100311](https://doi.org/10.1016/j.avrs.2025.100311).
10. Shanyong Zhang, Ning Li, Mingshuai Xu, Zheng YX Huang, Zhujun Gu, **Shenglai Yin***. 2022. Urbanization and habitat characteristics associated with the occurrence of *Peste des Petits ruminants* in Africa. *Sustainability*. DOI: <https://doi.org/10.3390/su14158978>.
11. **Shenglai Yin**, et al. 2021. Do contrasting patterns of migration movements and disease outbreaks between congeneric waterfowl species reflect differing immunity? *Geospatial Health*. DOI: [10.4081/gh.2021.909](https://doi.org/10.4081/gh.2021.909).
12. **Shenglai Yin**, et al. 2020. Effects of migration network configuration and migration synchrony on infection prevalence in geese. *Journal of Theoretical Biology*. DOI: [10.1016/j.jtbi.2020.110315](https://doi.org/10.1016/j.jtbi.2020.110315).
13. **Shenglai Yin**, et al. 2017. No evidence that migratory geese disperse avian influenza viruses from breeding to wintering ground. *PLOS ONE*. DOI: [10.1371/journal.pone.0177790](https://doi.org/10.1371/journal.pone.0177790).
14. **Shenglai Yin**, et al. 2015. *Spartina alterniflora* invasions impact CH₄ and N₂O fluxes from a salt marsh in eastern China. *Ecological Engineering*. DOI: [10.1016/j.ecoleng.2015.04.044](https://doi.org/10.1016/j.ecoleng.2015.04.044).
15. Lingyan Zhou, **Shenglai Yin***, et al. 2015. *Spartina alterniflora* invasion alters carbon exchange and soil organic carbon in the eastern salt marsh of China. *CLEAN-Soil, Air, Water*. DOI: [10.1002/clen.201300838](https://doi.org/10.1002/clen.201300838).

Other co-author publications

16. Baihong Pan, Nishan Bhattarai, Yanhua Xie, **Shenglai Yin** et al., Identifying yellow flowers of canola crop with the PlanetScope images and Carotenoids and Yellow Flower Indicator (CYFI). *Remote Sensing of Environment*, under review.
17. Johanna Harvey, Matthew Gonnerman, **Shenglai Yin**, et al., 2026. Feathers and Flu: Avian influenza host dynamics and future data needs to prioritize wildlife conservation. *Wildlife Monographs*, DOI: <https://doi.org/10.1002/wmon.70015>.
18. Fuchao Zheng, Wendian Zhu, Jinghan Zhang, **Shenglai Yin**, et al., 2026. Associations of oxygen availability with eukaryotic plankton assembly and coalescence in river–lake ecotones. *Ecological Informatics*, DOI: <https://doi.org/10.1016/j.ecoinf.2026.103787>.

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19. Qiang Zhang, Jinwei Dong, Zhichao Li, Xiangming Xiao, Chuan Yan, Nanshan You, **Shenglai Yin**, et al., 2026. Annual global habitat maps of avian influenza host birds from 2000 to 2022. *Diversity and Distribution*, DOI: [10.1111/ddi.70153](https://doi.org/10.1111/ddi.70153).
20. Qiang Zhang, Jinwei Dong, Zhichao Li, Xiangming Xiao, Chuan Yan, Nanshan You, **Shenglai Yin**, et al., 2026. Anthropogenic transformation in terrestrial habitats of avian influenza host birds in the 21st century. *Science Bulletin*, DOI: <https://doi.org/10.1016/j.scib.2025.12.035>.
21. Chenglong Yin, Xiangming Xiao, Li Pan, Ruishan Chen, Yi Yin, Yuanwei Qin, Wenjiao Shi, Tim van de Voorde, **Shenglai Yin**, et al., 2025. Concurrent increases of impervious surface area and vegetation greenness and productivity in China's Yangtze River Delta. *Earth Future*. DOI: [10.1029/2025EF006652](https://doi.org/10.1029/2025EF006652).
22. Haoteng Zhang, Lijun Xiao, Zixi Zhao, **Shenglai Yin**, Yong Zhang. 2025. Importance of surrounding landscape features in explaining wintering waterbird diversity and community assembly in Jiangsu's inland lake wetlands. *Avian Research*. DOI: [10.1016/j.avrs.2025.100295](https://doi.org/10.1016/j.avrs.2025.100295).
23. Li Pan, Xiangming Xiao, Yuanwei Qin, Josep G. Canadell, Alfredo Huete, Philippe Ciais, **Shenglai Yin**, et al., 2025. Strong and rapid postfire recovery of vegetation productivity in Australia. *Global Change Biology*. DOI: [10.1111/gcb.70321](https://doi.org/10.1111/gcb.70321).
24. Xiang Li, Ao Li, Fengyi Qu, Yi Li, Fangyuan Chen, Xinru Lv, Qing An, Mengdan Fei, Hongyu Chen, Hongrui Liang, Xiaotian Zhang, Jinghao Li, Mingyuan Yu, Siyuan Qin, Linhong Xie, **Shenglai Yin**, et al., 2025. Evaluation of global distribution, genetic evolution, and mammalian infectivity and pathogenicity of H13 and H16 avian influenza viruses. *Emerging Microbes & Infections*. DOI: [10.1080/22221751.2025.2482695](https://doi.org/10.1080/22221751.2025.2482695).
25. Li Pan, Xiangming Xiao, Baihong Pan, Cheng Meng, Russell Doughty, Yuanwei Qin, Chenchen Zhang, Yuan Yao, Chenglong Yin, **Shenglai Yin**. 2025. Vegetation Photosynthesis Model v3.0: Improved estimates of terrestrial gross primary production from individual eddy flux tower sites to the globe. *Journal of Remote Sensing*. DOI: [10.34133/remotesensing.0471](https://doi.org/10.34133/remotesensing.0471).
26. Fuchao Zheng, Dehua Zhao, **Shenglai Yin**, et al., 2024. Water N/P ratios influence emergent plant nutrient uptake and growth by altering the microbial activities of rhizosphere soil. *Applied Soil Ecology*. DOI: [10.1016/j.apsoil.2024.105677](https://doi.org/10.1016/j.apsoil.2024.105677).
27. Margaret C. McEachran, Johanna A. Harvey, Riley O. Mummah, Molly C. Bletz, Claire S. Teitelbaum, Elias Rosenblatt, F. Javiera Rudolph, Fernando Arce, **Shenglai Yin**, et al. 2024. Reframing wildlife disease management problems with decision analysis. *Conservation Biology*. DOI: [10.1111/cobi.14284](https://doi.org/10.1111/cobi.14284).
28. John Takekawa, Diann Prosser, Jeffery Sullivan, **Shenglai Yin**, et al. 2023. Potential effects of habitat change on migratory bird movements and avian influenza transmission in the East Asian-Australasian Flyway. *Diversity*. DOI: [10.3390/d15050601](https://doi.org/10.3390/d15050601).
29. Fuchao Zheng, Xiaoming Mou, Jinghua Zhang, Tiange Zhang, Lu Xia, **Shenglai Yin**, et al. 2022. Gradual enhancement of the assemblage stability of the reed rhizosphere microbiome with recovery time. *Microorganisms*. DOI: [10.3390/microorganisms10050937](https://doi.org/10.3390/microorganisms10050937).
30. Fuchao Zheng, Tiange Zhang, **Shenglai Yin**, et al. 2022. Comparison and interpretation of freshwater bacterial structure and interactions with organic to nutrient imbalances in restored wetlands. *Frontiers in Microbiology*. DOI: [10.3389/fmicb.2022.946537](https://doi.org/10.3389/fmicb.2022.946537).

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31. Yanjie Xu, Yali Si, John Takekawa, Qiang Liu, Herbert Prins, **Shenglai Yin**, et al. 2020. A network approach to prioritize conservation efforts for migratory birds. *Conservation Biology*. DOI: [10.1111/cobi.13383](https://doi.org/10.1111/cobi.13383).
32. Yanjie Xu, Yali Si, **Shenglai Yin**, et al. 2019. Species-dependent effects of habitat degradation in relation to seasonal distribution of migratory waterfowl in the East Asian-Australasian Flyway. *Landscape Ecology*. DOI: [10.1007/s10980-018-00767-7](https://doi.org/10.1007/s10980-018-00767-7).
33. Lijun Ren, Lili Xu, Yuyuan Zhang, Wei Pan, **Shenglai Yin**, et al. 2015. Effects of connection mode and hydraulic retention time on wastewater pollutants removal in constructed wetland microcosms. *CLEAN-Soil, Air, Water*. DOI: [10.1002/clen.201300842](https://doi.org/10.1002/clen.201300842).
34. Wen Yang, Hui Zhao, Xinglong Chen, **Shenglai Yin**, et al. 2013. Consequences of short-term *C₄* plant *Spartina alterniflora* invasions for soil organic carbon dynamics in a coastal wetland of Eastern China. *Ecological Engineering*. DOI: [10.1016/j.ecoleng.2013.09.056](https://doi.org/10.1016/j.ecoleng.2013.09.056).

Reports

1. Shuqing An, **Shenglai Yin**. 2012. Technical evaluations of the roles of coastal wetlands in global climate change

Books and dissertations

- 2023 Shuqing An, **Shenglai Yin**, et al. Chapter 29 Wetlands. In the *Wetzel's Limnology, Fourth Edition*. 2023. Elsevier.
- 2018 **Shenglai Yin**. Consequences of Seasonal Migration: How goose relocation strategies influence infection prevalence and pathogen dispersal [D]. 2018. Wageningen: Wageningen University & Research.
- 2014 **Shenglai Yin**. Investigation of greenhouse gas emission patterns and the main influential factors in coastal wetlands in Yancheng, Jiangsu Province [D]. 2014. Nanjing: Nanjing University.

Patents

- 2011 Shuqing An, Lijun Ren, Xiaoyan Wang, **Shenglai Yin**, et al. 2011. Multi-level constructed wetland system and application. China: 201110091785.4, 2011-04-13.

GRANTS, PROJECTS, AWARDS, and CERTIFICATES

Hosted Projects

- 2022 NSFC Young Scientists Fund Project: Using multiplex network to identify spatial pattern of HPAI occurrence and its landscape driving mechanism (PI, granted, ¥200,000, ~\$30,000)
- 2013 Funding of China Scholarship Council: How does the migration of geese influence the dispersal and perpetuation of avian influenza viruses? (Ph.D. funding, granted, ¥550,000, ~\$77,000)

Proposals

- 2025 NIH R01 Understand and predict the contribution of wild waterfowl in transmission and spillover risk of highly pathogenic avian influenza viruses in North America (co-PI, not selected)
- 2025 NIH R21 Predict spillover risk of highly pathogenic avian influenza viruses from wild waterfowl to human at the wildland-urban interface: A pilot study in central California (co-PI, not selected)

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- 2025 USDA Forecasting and locating influenza with geospatial and hunter tracking through sequencing (FLIGHTS) (co-PI, not selected)
- 2025 NASA NASA RSIR: Integrate satellite data products and models to predict wild waterfowl movement and its role in episodic outbreaks of highly pathogenic avian influenza (co-PI, not selected)
- 2024 NSF EEID US-UK-China Collab: Global waves of expansion of highly pathogenic avian influenza viruses: Multi-scale integration, modeling, and prediction (co-PI, not selected)
- 2023 NSF Predictive Intelligence for Pandemic Prevention Phase II: International center for avian influenza pandemic prediction and prevention (senior personnel, not selected)

Participated Projects

- 01/2023 - present NSFC General Program: A multiscale study of the effects of species functional traits on animal infectious disease risk [32271605, participant]
- 08/2022 - present US-China Collab: Harnessing Big Data to understand and predict diversity and transmission of human- and animal-infected avian influenza viruses in China [NSF award number: 1911955, postdoc researcher]
- 08/2022 - present PIPP Phase 1: International Center for Avian Influenza Pandemic Prediction and Prevention (PIPP Phase I) [NSF award number: 2200310, postdoc researcher]
- 04/2012 - 09/2013 NSFC Project: Investigation project of soil properties in South-north Lake, Jiangsu, China (field technician)
- 09/2010 - 06/2014 Public Welfare Project of the State Forestry Administration: Technical assessment of the role of coastal wetlands under global climate change (200804005, field and laboratory technician, supporting project for master's thesis)
- 04/2012 - 09/2014 National Science and Technology Major Project for Water Pollution Control and Treatment: Key technologies for aquatic ecological restoration in the Huai River Basin, Henan section (2012ZX07204004, field and laboratory technician)
- 09/2009 - 06/2010 Natural Science Research Project of Jiangsu Higher Education Institutions: Effects of land-use types on soil carbon fluxes (field and laboratory technician, supporting project for bachelor's thesis)
- 09/2008 - 09/2009 NSFC General Program: Numerical simulation of the combined effects of increased surface UV-B and O₃ on crops (40775072, field and laboratory technician)

Awards

- 2025 University of Oklahoma Libraries Subvention Funding by University of Oklahoma
- 2017 Funding of Fonds Landbouw Export-Bureau 1916/1918 by Wageningen University & Research
- 2013 Graduate Thesis Award by the International Symposium on Modern Ecology series
- 2013 Distinguishing Graduate Student Poster by the International Symposium on Modern Ecology series
- 2010 Graduation Scholarship (the 2nd rank), Nanjing University of Information Science and Technology
- 2010 Outstanding Graduates, Nanjing University of Information Science and Technology

Certificates

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- 2021 Certified Professional Wetland Scientist (issued by the Society of Wetland Scientist Certification Program)
- 2021 Certificate for English-Mandarin Translator (issued by the East Asia-Australasian Flyway Partnership)

CONFERENCE, WORKSHOPS, and SEMINARS

- 2026 The Annual Meeting of the Ecological Society of America, Salt Lake City, UT, USA
- 2026 Ecology and Evolution of Infectious Disease Conference, Virginia Tech, VA, USA [Presentation]
- 2025 School of Biological Sciences Seminar, University of Oklahoma, Norman, OK, USA [Presentation]
- 2025 [Webinar] International Forum on Ecology & Evolution of Avian Influenza [Presentation]
- 2025 One Health Day Symposium, University of Minnesota, Minneapolis, MN, USA [Presentation]
- 2025 Ecology and Evolution of Infectious Disease Conference, University of Notre Dame, IN, USA [Poster]
- 2025 Movement Ecology of Animals of Gordon Research Conference, Ventura, CA, USA [Poster]
- 2024 Symposium on the Ecology & Evolution of Influenza Viruses, University of Georgia, Athens, GA, USA
- 2024 The Annual Meeting of the Ecological Society of America, Long Beach, CA, USA [Presentation]
- 2024 Ecology and Evolution of Infectious Diseases Conference, Stanford University, CA, USA [Poster]
- 2023 IUCN 20th Goose Specialist Group Meeting, Mongolia [Presentation]
- 2022 [Webinar] International Forum on Ecology & Evolution of Avian Influenza [Presentation]
- 2022 [Webinar] Asian Flyways Collaborative for Waterbirds [Presentation]
- 2022 20th Conference of Ecological Society of China, Shanghai, China [Presentation]
- 2022 9th International Congress of East Asian Federation of Ecological Societies, Hohhot, China [Presentation]
- 2017 Summer School in Individual- and Agent-Based Modeling, Dresden, Germany [Presentation]
- 2017 Impact of Environmental Change on Infectious Diseases, Trieste, Italy [Poster]
- 2017 Masterclass One Health Approach to Infectious Disease, Den Haag, the Netherlands [Presentation and poster]
- 2016 Netherlands Annual Ecology Meeting 2016, Lunteren, the Netherlands [Presentation and session organizer]
- 2015 Netherlands Annual Ecology Meeting 2015, Lunteren, the Netherlands [Poster]
- 2015 Ph.D. Symposium 2015, Wageningen University & Research, Wageningen, the Netherlands
- 2014 Netherlands Annual Ecology Meeting 2014, Lunteren, the Netherlands
- 2013 The 7th International Symposium on Modern Ecology Series, Guangzhou, China [Awarded poster]
- 2011 The 6th International Symposium on Modern Ecology Series, Nanjing, China [Poster]

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- 2011 The 2th International Young Ecologist Forum, Nanjing, China [Poster]
2011 Annual Meeting of the Ecology Society of China, Changsha, China
2011 The 8th Ecology Summer School in Fudan University, Shanghai, China

TEACHINGS, MENTORINGS, PROFESSIONAL SERVICES, and PEER-REVIEWS

Teaching

- 06/2017 - 12/2018 Disease Ecology (modeling part), Wageningen University & Research
06/2015 - 12/2017 Ecology Method (statistical part), Wageningen University & Research
06/2015 - 12/2017 Animal Ecology (modeling part), Wageningen University & Research

Mentoring

(* undergraduate student, ** master student, *** Ph.D. student)

1. Akshay Singh* (*University of Oklahoma*), 08/2025 - current
2. Jonathan Joseph* (*University of Oklahoma*), 08/2025 - current
3. Fuchao Zheng*** (*Nanjing University*), 01/2020 - 08/2022
4. Shanyong Zhang** (*Nanjing Normal University*), 03/2021 - 08/2022

Professional Service

- 05/2026 – present Associate editor for the Journal of Animal Ecology
08/2023 - present Associate editor for the journal Avian Research
08/2022 - present Committee member of the webinar series Asian Flyways Collaborative for Waterbirds
08/2022 - present Coordinator and moderator of webinar series International Forum on Ecology and Evolution of Avian Influenza
08/2024 - 12/2025 Lead guest editor for the special publication issue “Asian Flyways for Waterbirds under Global Change: Movement Ecology and Emerging Threats” in the journal Avian Research
06/2021 - 06/2022 Translator for the East Asian-Australasian Flyway Partnership
03/2019 - 01/2021 Natural education instructor at Nanjing University Ecological Research Institute of Changshu
09/2016 - 06/2017 Committee member of Wageningen Evolution and Ecology Seminars, Wageningen University & Research
08/2011 Coordinator in the 6th International Symposium on Modern Ecology Series, China
08/2011 Coordinator in the 2nd International Young Ecologist Forum, China

Peer-Reviews

Journal of Animal Ecology (4), Journal of Applied Ecology (1), Movement Ecology (1), Scientific Data (3), Integrative Zoology (1), Avian Research (4), Wildlife Letter (1), PeerJ (1), Ecology and Evolution (1), Royal Society Open Science (2), and PLOS ONE (3).

PUBLIC SERVICES

- 01/2022 - 06/2022 Invited nature education lecturer in Poyang Lake National Wetland Park
01/2021 - 12/2021 Invited nature education lecturer in Changshu Meili Middle School
01/2020 - 12/2021 Invited nature education lecturer in Shajiabang National Wetland Park
01/2020 - 12/2021 Invited nature education lecturer in Changshu Experimental Primary School

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01/2020 - 12/2021 Invited nature education lecturer in Changshu Dayi Center Primary School

01/2020 - 12/2021 Invited nature education lecturer in Changshu Xingfu Primary School

REFERENCES

1. Dr. Xiangming Xiao, Professor, University of Oklahoma, Norman, OK, USA (PI of current research group); Email: xiangming.xiao@ou.edu; Phone: +1 405 325 8941
2. Dr. Nichola Hill, Assistant Professor, University of Massachusetts Boston, Boston, MA, USA (Collaborator); Email: nichola.hill@umb.edu; Phone: +1 617 287 6675
3. Dr. Fred de Boer, Associate Professor, Wageningen University & Research, Wageningen, The Netherlands (Ph.D. supervisor); Email: fred.deboer@wur.nl; Phone: +31 317 48 26 91
4. Dr. Herbert H.T. Prins, Emeritus Professor, Wageningen University & Research, Wageningen, The Netherlands (Ph.D. promoter); Email: herbert.prins@wur.nl; Phone: +31 317 48 60 20
5. Dr. Zheng YX Huang, Professor, Nanjing Normal University, Nanjing, China (PI of the former research group); Email: zyx.huang@outlook.com; Phone: +86 139 2143 1410
6. Dr. Yali Si, Assistant Professor, Leiden University, Leiden, The Netherlands (Collaborator); Email: y.si@cml.leidenuniv.nl; Phone: +31 071 5272727