

Muyang Lu (Lyu) 吕牧羊

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Research Interest

Niche theory, Climate change, Species distribution modeling, Metacommunity

Employment

2025 till now

Sichuan University, College of Life Sciences

Assistant Professor

2024 - 2025

Yale University, Center for Biodiversity and Climate Change

Postdoc researcher, supervised by Dr. Walter Jetz

2022 – 2024

University College London, Center for Biodiversity and Environment Research

Postdoc researcher, supervised by Dr. Alex Pigot

Education

2016 – 2022 **Yale University, New Haven, USA**

PhD, Ecology & Evolutionary Biology

2014 – 2016 **Sun Yat-sen University, Guangzhou, China**

MSc, Ecology

2010 – 2014 **Sun Yat-sen University, Guangzhou, China**

BSc, Biotechnology and Application

Publications

** denotes equal contribution*

Lu, M. & Jetz, W. (2025). Fine-grain data reveals biodiversity' vulnerability to climate change. *Climate Change Biology (in press)*.

Lu, M., Yanco, S.W., Carlson, B.S., Winner, K., Cohen, J.M., Ellis-Soto, D., et al. (2025). A theoretical framework for scaling ecological niches from individuals to species. *Proceedings of the National Academy of Sciences*, 122, e2425582122.

Song, C. *, **Lu, M.***, Bennett, J.R., Gilbert, B., Fortin, M.-J. & Gonzalez, A. (2025). A geometric approach to beta diversity. *Ecological Monograph*. doi: 10.1101/2022.11.27.518099

Williamson, J., **Lu, M.**, Camus, M.F., Gregory, R.D., Maclean, I.M.D., Rocha, J.C., et al. (2025). Clustered warming tolerances and the nonlinear risks of biodiversity loss on a

warming planet. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 380, 20230321.

Lu, M. & Jetz, W. (2023). Scale-sensitivity in the measurement and interpretation of environmental niches. *Trends in Ecology & Evolution*, 38, 554–567.
doi:10.1016/j.tree.2023.01.003

Gábor, L., Jetz, W., **Lu, M.**, Rocchini, D., Cord, A., Malavasi, M., *et al.* (2022). Positional errors in species distribution modelling are not overcome by the coarser grains of analysis. *Methods in Ecology and Evolution*, 13, 2289–2302. doi: 10.1111/2041-210X.13956

Lu, M. (2021). Complex relationships between beta diversity and dispersal in meta-community models. *Ecography*, 44(12), 1769–1780. doi:10.1111/ecog.05937

Lu, M., Winner, K., & Jetz, W. (2021). A unifying framework for quantifying and comparing n-dimensional hypervolumes. *Methods in Ecology and Evolution*, 12(10), 1953–1968. doi:10.1111/2041-210X.13665

Lu, M., Gao, L., Li, H., & He, F. (2021). The patterns of vascular plant discoveries in China. *Ecology and Evolution*, 11(18), 12378–12388. doi:10.1002/ece3.7971

Lu, M., Vasseur, D., Jetz, W. (2019) Beta diversity patterns derived from island biogeography theory. *American Naturalist* 194, E52–E65 doi:10.1086/704181

Lu, M., & He, F. (2017). Estimating regional species richness: The case of China's vascular plant species. *Global Ecology and Biogeography* 26: 835–845.
doi:10.1111/geb.12589

Zhang, P., **Lyu, M.-Y.**, Wu, C.-F., Chu, Y.-M.-R., Han, N., Yang, D., & Hu, K. (2016). Variation in body mass and morphological characters in *Macaca mulatta brevicaudus* from Hainan, China. *American Journal of Primatology*, 78(6), 679–698.
doi:10.1002/ajp.22534

R Package development

MVNH (author) – Compute and partition the size and overlap of n-dimensional hypervolumes

<https://github.com/lvmuyang/MVNH>

betavolume (contributor) – Compute geometric beta diversity

<https://github.com/clsong/BetaVolume>

Teaching

Teaching Assistant

2017 Evolutionary Biology, Yale

2017 General Ecology, Yale

2016 Introduction to Biology, Yale

Mentoring

2023 Eva Lyu, Undergraduate, UCL

2023 Rachel Cooper, Undergraduate, UCL

2022 Tanaya Nair, Graduate student, UCL

Invited talks

2023 College of Urban and Environmental Sciences, Peking University

2022 Center for Biodiversity and Environment Research, University College London

2022 Sino-Eco Seminar Series, Sino-Ecologists Association Oversea

Conference Presentations and Posters

2024 Frontier Forum on Global Change Ecology (Best poster award)

2022 British Ecological Society Annual Meeting

2022 Gordon Research Conference: Unifying Ecology Across Scales

2021 British Ecological Society, Quantitative Ecology SIG Meeting

2021 British Ecological Society, Macroecology SIG Meeting

2020 A Festival of Ecology, British Ecological Society

2020 Ecology Society of America Annual Meeting

2018 Gordon Research Conference: Unifying Ecology Across Scales

2017 Biennial Conference of the International Biogeography Society

2017 Ecology Society of America Annual Meeting

Academic and Scientific Services

Journal referee

Nature Communications; Ecology Letters; Ecological Monograph; Ecography; Global Ecology and Biogeography; Journal of Biogeography; The American Naturalist; Journal of Theoretical Biology; Journal of Ecology; Oecologia; Ecosphere; Frontiers in Ecology and Evolution; Proceedings of the Royal Society B

Professional society service

2022 till now Executive committee, Sino-Ecologists Association Overseas