

Joe Wan

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Training

- 10/2023– **Postdoctoral Scholar, National Taiwan University, Institute of Ecology and Evolutionary Biology**
Supervisor: Po-Ju Ke
- 08/2018–04/2023 **Doctorate, ETH Zürich, Department of Environmental Systems Science, Doctorate**
Advisor: Thomas Crowther
Thesis: *Uniting community and ecosystem ecology to understand the global carbon cycle*
- 07/2016–09/2017 **Lab Technician (microbial ecology) Department of Biology, Stanford University**
Supervisor: Kabir Peay
Applied computational, theoretical, and experimental approaches to understand the interaction between plants and their microbial communities.
- 09/2012–06/2016 **Stanford University, Bachelor of Science in Computer Science and Biology (with Honors in Computer Science; with Distinction)**
Honors Thesis: *Learning evolutionary and functional aspects of plant–fungal mutualism from public genomic data*

Language Proficiency

English	<i>native language</i>
Chinese	<i>fluent</i>
German	<i>intermediate</i>

Publications

as first author or equal contribution ():*

- J. Wan*, P.-J. Ke*, I. Hordijk, L. Bialic-Murphy, and T. W. Crowther (2024). “Functional coexistence theory: a mechanistic framework linking biodiversity to ecosystem function”. *bioRxiv*. DOI: 10.1101/2024.05.05.591902. preprint.
- P.-J. Ke* and J. Wan* (2023). “A general approach for quantifying microbial effects on plant competition”. *Plant and Soil* 485.1. DOI: 10.1007/s11104-022-05744-3.

J. Wan and T. W. Crowther (2022). "Uniting the scales of microbial biogeochemistry with trait-based modelling". *Functional Ecology* 36.6. DOI: 10.1111/1365-2435.14035.

P.-J. Ke* and **J. Wan*** (2020). "Effects of soil microbes on plant competition: a perspective from modern coexistence theory". *Ecological Monographs* 90.1. DOI: 10.1002/ecm.1391.

G. R. Smith* and **J. Wan*** (2019). "Resource-ratio theory predicts mycorrhizal control of litter decomposition". *New Phytologist* 223.3. DOI: 10.1111/nph.15884.

J. Wan, M. Qu, X. Hao, R. Motha, and J. Qu (2015). "Assessing the Impact of Year 2012 Drought on Corn Yield in the US Corn Belt Using Precipitation Data". *Journal of Earth Science and Engineering* 5. DOI: 10.17265/2159-581X/2015.06.001.

manuscripts in preparation:

J. Wan, P.-J. Ke, L. Bialic-Murphy, and T. W. Crowther (in prep.). "Reconciling competing definitions of niche difference using invasion growth".

other publications:

M. E. Van Nuland, P.-J. Ke, **J. Wan**, and K. G. Peay (2023). "Mycorrhizal nutrient acquisition strategies shape tree competition and coexistence dynamics". *Journal of Ecology* 111.3. DOI: 10.1111/1365-2745.14040.

J. Maschler, L. Bialic-Murphy, **J. Wan**, L. C. Andresen, C. M. Zohner, P. B. Reich, A. Lüscher, M. K. Schneider, C. Müller, G. Moser, J. S. Dukes, I. K. Schmidt, M. C. Bilton, K. Zhu, and T. W. Crowther (2022). "Links across ecological scales: Plant biomass responses to elevated CO₂". *Global Change Biology* 28.21. DOI: 10.1111/gcb.16351.

T. Větrovský, P. Kohout, M. Kopecký, A. Machac, M. Man, B. D. Bahnmann, V. Brabcová, J. Choi, L. Meszárošová, Z. R. Human, C. Lepinay, S. Lladó, R. López-Mondéjar, T. Martinović, T. Mašínová, D. Morais, D. Navrátilová, I. Odriozola, M. Štursová, K. Švec, V. Tláškal, M. Urbanová, **J. Wan**, L. Žifčáková, A. Howe, J. Ladau, K. G. Peay, D. Storch, J. Wild, and P. Baldrian (2019). "A meta-analysis of global fungal distribution reveals climate-driven patterns". *Nature Communications* 10.1. DOI: 10.1038/s41467-019-13164-8.

T. W. Crowther, J. van den Hoogen, **J. Wan**, M. A. Mayes, A. D. Keiser, L. Mo, C. Averill, and D. S. Maynard (2019). "The global soil community and its influence on biogeochemistry". *Science* 365.6455. DOI: 10.1126/science.aav0550.

M. Duhamel, **J. Wan**, L. M. Bogar, R. M. Segnitz, N. C. Duncritts, and K. G. Peay (2019). "Plant selection initiates alternative successional trajectories in the soil microbial community after disturbance". *Ecological Monographs* 89.3. DOI: 10.1002/ecm.1367.

N. Weber, D. Liou, J. Dommer, P. MacMenamin, M. Quiñones, I. Misner, A. J. Oler, **J. Wan**, L. Kim, M. Coakley McCarthy, S. Ezeji, K. Noble, and D. E. Hurt (2018). "Nephele: a cloud platform for simplified, standardized and reproducible microbiome data analysis". *Bioinformatics* 34.8. DOI: 10.1093/bioinformatics/btx617.

- A. Schuler, V. Liu, **J. Wan**, A. Callahan, M. Udell, D. E. Stark, and N. H. Shah (2016). "Discovering patient phenotypes using generalized low rank models". *Biocomputing 2016: Proceedings of the Pacific Symposium*. World Scientific. DOI: 10.1142/9789814749411_0014.
- M. Qu, **J. Wan**, and X. Hao (2014). "Analysis of diurnal air temperature range change in the continental United States". *Weather and Climate Extremes* 4. DOI: 10.1016/j.wace.2014.05.002.