

# Kai Zhu, PhD

Associate Professor, University of Michigan

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## Appointments

- 2022— Associate Professor  
University of Michigan, School for Environment and Sustainability  
University of Michigan, Institute for Global Change Biology
- 2023— Associate Professor  
University of Michigan, Department of Ecology and Evolutionary Biology
- 2022— Affiliated Faculty  
University of Michigan, Michigan Institute for Data Science
- 2023— Affiliated Faculty  
University of Michigan, Michigan Center for Applied and Interdisciplinary Mathematics  
University of Michigan, Michigan Institute for Computational Discovery and Engineering
- 2021—2022 Associate Professor
- 2017—2021 Assistant Professor  
University of California, Santa Cruz, Department of Environmental Studies
- 2019—2022 Affiliated Faculty  
University of California, Santa Cruz, Graduate Program in Coastal Science and Policy
- 2017 Assistant Professor  
University of Texas, Arlington, Department of Biology
- 2016 Julian Huxley Faculty Fellow (Principal Investigator)  
Rice University, Department of BioSciences
- 2015 Barbara McClintock Postdoctoral Fellow
- 2014 Postdoctoral Research Scientist  
Carnegie Institution for Science, Department of Global Ecology  
Stanford University, Department of Biology  
Advisors: Christopher B. Field, Nona R. Chiariello, Tadashi Fukami

## Education

- 2009–2014 PhD in Environment (Ecology)  
Duke University, Nicholas School of the Environment  
Committee: James S. Clark (chair), John W. Terborgh, Wenhong Li, Alan E. Gelfand  
Dissertation: *Climate Change and Forest Biodiversity in the Eastern United States*
- 2012–2014 MS in Statistical Science  
Duke University, Department of Statistical Science  
Committee: Alan E. Gelfand (chair), Merlise A. Clyde, James S. Clark  
Dissertation: *Integral Projection Models*
- 2013–2014 CERTIFICATE in College Teaching  
Duke University, Graduate School
- 2006–2009 MS in Natural Resources (Ecology)  
Beijing Normal University, Institute of Resources Science  
Advisor: Qiong Gao  
Dissertation: *Ecosystem Services and Ecohydrology in the Yellow River Basin, China*
- 2002–2006 BS in Management Sciences (Systems Theory)  
Beijing Normal University, Department of Systems Sciences

## Awards & Honors

- 2021 CAREER Award  
National Science Foundation
- 2021–2026 Early Career Fellow  
Ecological Society of America
- 2019 Tansley Medal for Excellence in Plant Science  
New Phytologist Foundation
- 2018 UC Santa Cruz Nominee  
Packard Fellowships for Science and Engineering
- 2017 Sino-Eco Best Young Investigator Paper Award  
Ecological Society of America, Sino-Ecologists Association Overseas
- 2016–2018 Julian Huxley Faculty Fellowship  
Rice University
- 2015 Barbara McClintock Fellowship  
Carnegie Institution for Science
- 2012 Outstanding Student in Ecology Award  
Ecological Society of America, Student Section
- 2012 Dean's Award for Outstanding PhD Student Manuscript  
Duke University, Nicholas School of the Environment

2012 Must Read Article Award  
Faculty of 1000

## Grants

### EXTRAMURAL FUNDING

- 2021– CAREER: Advancing a macrosystems framework for climate-phenology coupling through integrated research and education  
PI: **Kai Zhu**  
National Science Foundation, Directorate for Biological Sciences
- 2019– MRA: Macroecology of microorganisms: Scaling fungal biodiversity from soil cores to the North American continent  
PI: **Kai Zhu**, co-PI: Kabir G. Peay  
National Science Foundation, Directorate for Biological Sciences
- 2024– Linking phenological change to range change in North American plant species  
PI: Sydne Record, Co-PIs: Linda Black Elk, **Kai Zhu**  
National Science Foundation, Environmental Data Science Innovation & Inclusion Lab
- 2020–2022 Forecasting pollen high and low: Near-term ecological forecasting with state-of-the-art machine learning algorithm  
PI: **Kai Zhu**, co-PI: Stephan B. Munch  
Microsoft, AI for Earth
- 2013–2014 DISSERTATION RESEARCH: Forest climate requirements change through species life history  
PI: James S. Clark, co-PI: **Kai Zhu**  
National Science Foundation, Directorate for Biological Sciences

### INTRAMURAL FUNDING

- 2024– Life-cycle analysis synthesized with ecosystems and risk focused on sustainable forestry  
PI: Benjamin P. Goldstein, co-PI: **Kai Zhu**  
University of Michigan, Biosciences Initiative
- 2023– Bayesian modeling of multi-source phenology to predict airborne allergens  
PI: **Kai Zhu**, co-PI: Kerby Shedden  
University of Michigan, Michigan Institute for Data Science
- 2023– Synthesizing experiments and observations of soil fungal community responses to climate change  
PI: **Kai Zhu**, co-PIs: Donald R. Zak, Peter B. Reich  
University of Michigan, Institute for Global Change Biology
- 2022–2023 Detection of flowering phenology with high spatial resolution imagery  
PI: **Kai Zhu**

University of California, Santa Cruz, Committee on Research

- 2022–2023 FIRES NEXT TIME (FNT): A replicable citizen science model for community understanding of wildfire impacts through integrating traditional tribal fire management practices and a field-based implementation of an IoT based fire monitoring network  
PI: Joshua Harrison, co-PIs: Katia Obraczka, **Kai Zhu**  
University of California, Santa Cruz, Office of Research
- 2021–2022 EUREKA: A decision support tool for wildfire risk assessment using a drone-assisted, scalable and efficient UAV-assisted IoT monitoring network  
PI: Katia Obraczka, co-PIs: **Kai Zhu**, Ricardo Sanfelice  
University of California, Center for Information Technology Research in the Interest of Society
- 2021–2022 An artificial intelligence based framework of modeling and prediction of wildland-urban interface fires  
PI: Yu Zhang, co-PI: **Kai Zhu**  
University of California, Santa Cruz, Committee on Research
- 2021 Enhancing climate change education through personalized scientific communications on phenology  
PI: **Kai Zhu**  
University of California, Center for Information Technology Research in the Interest of Society
- 2020 Phenology observers on social media  
PI: **Kai Zhu**  
University of California, Santa Cruz, Institute for Social Transformation
- 2020–2021 Forecasting pollen high and low: Integrating remotely-sensed and ground-based phenology data  
PI: **Kai Zhu**  
University of California, Santa Cruz, Committee on Research
- 2019–2020 Is plant phenology keeping pace with the climate?  
PI: **Kai Zhu**  
University of California, Santa Cruz, Committee on Research
- 2017–2018 How effective is albedo control in cities?  
PI: **Kai Zhu**  
University of California, Santa Cruz, Committee on Research
- 2015–2016 Dynamically evaluating and mapping Ebola outbreak risks in West and Central Africa in response to social-environmental changes  
PI: Zhiyuan Song, co-PI: **Kai Zhu**  
Stanford University, Center for Innovation in Global Health

## Publications

Google Scholar citations: 4826, h-index: 33, i10-index: 63.

Mentee authors underlined.

In press

91. Van Nuland ME, Qin C, Pellitier P, Zhu K, Peay KG (in press), Climate mismatches with ectomycorrhizal fungi contribute to migration lag in North American tree range shifts. *Proceedings of the National Academy of Sciences*.

2024

90. Yu Z, Chen J, Chen J, Zhan W, Wang C, Ma W, Yao X, Zhou S, Zhu K, Sun R (2024), Enhanced observations from an optimized soil-canopy-photosynthesis and energy flux model revealed evapotranspiration-shading cooling dynamics of urban vegetation during extreme heat. *Remote Sensing of Environment*, 305, 114098. <http://doi.org/10.1016/j.rse.2024.114098>
89. Wheeler KI, Dietze MC, LeBauer D, Peters JA, Richardson AD, Ross AA, Thomas RQ, Zhu K, Bhat U, Munch S, Buzbee RF, Chen M, Goldstein B, Guo J, Hao D, Jones C, Kelly-Fair M, Liu H, Malmborg C, Neupane N, Pal D, Shirey V, Song Y, Steen M, Vance EA, Woelmer WM, Wynne JH, Zachmann L (2024), Predicting spring phenology in deciduous broadleaf forests: NEON phenology forecasting community challenge. *Agricultural and Forest Meteorology*, 345, 109810. <https://doi.org/10.1016/j.agrformet.2023.109810>
88. Hogan JA, Domke GM, Zhu K, Johnson DJ, Lichstein JW (2024), Climate change determines the sign of productivity trends in US forests. *Proceedings of the National Academy of Sciences*, 121, e2311132121. <https://doi.org/10.1073/pnas.2311132121>

2023

87. Zhu K, Song Y (2023), Harnessing herbaria to advance plant phenology research under global change. *New Phytologist*, 6, 2057-2059. <https://doi.org/10.1111/nph.19088>
86. Van Berkel D, Fox N, Cousins S, Zhu K (2023), Can social media help us understand the impact of climate change on forests in the US? *I-GUIDE Forum*. <https://docs.lib.purdue.edu/iguide/2023/presentations/19>
85. Thomas RQ, Boettiger C, Carey CC, Dietze MC, Johnson LR, Kenney MA, McLachlan JS, Peters JA, Sokol ER, Weltzin JF, Willson A, Woelmer WM, Challenge contributors (including Song Y, Zhu K) (2023), The NEON Ecological Forecasting Challenge. *Frontiers in Ecology and the Environment*, 21, 112–113. <https://doi.org/10.1002/fee.2616>
84. Song Y, Munch SB, Zhu K (2023), Prediction-based approach for quantifying phenological mismatch across landscapes under climate change. *Landscape Ecology*, 38, 821–845. <https://doi.org/10.1007/s10980-023-01595-0>
83. Qiu T, Aravena M-C, Ascoli D, Bergeron Y, Bogdziewicz M, Boivin T, Bonal R, Caignard T, Cailleret M, Calama R, Calderon SD, Camarero JJ, Chang-Yang C-H, Chave J,

- Chianucci F, Courbaud B, Cutini A, Das AJ, Delpierre N, Delzon S, Dietze M, Dormont L, Espelta JM, Fahey TJ, Farfan-Rios W, Franklin JF, Gehring CA, Gilbert GS, Gratzer G, Greenberg CH, Guignabert A, Guo Q, Hackett-Pain A, Hampe A, Han Q, Holik J, Hoshizaki K, Ibanez I, Johnstone JF, Journé V, Kitzberger T, Knops JMH, Kunstler G, Kurokawa H, Lageard JGA, LaMontagne JM, Lefevre F, Leininger T, Limousin J-M, Lutz JA, Macias D, Marell A, McIntire EJB, Moore CM, Moran E, Motta R, Myers JA, Nagel TA, Naoe S, Noguchi M, Oguro M, Parmenter R, Pearse IS, Perez-Ramos IM, Piechnik L, Podgorski T, Poulsen J, Redmond MD, Reid CD, Rodman KC, Rodriguez-Sanchez F, Samonil P, Sanguinetti JD, Scher CL, Seget B, Sharma S, Shibata M, Silman M, Steele MA, Stephenson NL, Straub JN, Sutton S, Swenson JJ, Swift M, Thomas PA, Uriarte M, Vacciano G, Whipple AV, Whitham TG, Wion AP, Wright SJ, **Zhu K**, Zimmerman JK, Zywiec M, Clark JS (2023), Masting is uncommon in trees that depend on mutualist dispersers in the context of global climate and fertility gradients. *Nature Plants*, 9, 1044–1056. <https://doi.org/10.1038/s41477-023-01446-5>
82. Qin C, Pellitier P, Van Nuland M, Peay KP, **Zhu K** (2023), Niche modeling predicts that soil fungi occupy a precarious climate in boreal forests. *Global Ecology and Biogeography*, 32, 1127–1139. <https://doi.org/10.1111/geb.13684>
81. Kulikowski AJ, Zahawi RA, Werden LK, **Zhu K**, Holl KD (2023), Restoration interventions mediate tropical tree recruitment dynamics over time. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 378, 20210077. <https://doi.org/10.1098/rstb.2021.0077>
80. Jin Y, Hu S, Ziegler AD, Gibson L, Campbell JE, Xu R, Chen D, **Zhu K**, Zheng Y, Ye B, Ye F, Zeng Z (2023), Energy production and water savings from floating solar photovoltaics on global reservoirs. *Nature Sustainability*, 6, 865–874. <https://doi.org/10.1038/s41893-023-01089-6>
79. He X, Jiang X, Spracklen D, Holden J, Liang E, Liu H, Xu C, Du J, **Zhu K**, Elsen P, Zeng Z (2023), Global distribution and climatic controls of natural mountain treelines. *Global Change Biology*, 29, 7001–7011. <https://doi.org/10.1111/gcb.16885>
- Highlighted by Qiu J, Feng S, Yuan W (2023), Upward-moving mountain treelines: An indicator of changing climate. *Global Change Biology*, 29, 6832–6833. <https://doi.org/10.1111/gcb.16954>
78. Crimmins TM, Vogt E, Brown CL, Dalan D, Manangan A, Robinson G, Song Y, **Zhu K**, Katz DSW (2023), Volunteer-contributed observations of flowering often correlate with airborne pollen concentrations. *International Journal of Biometeorology*, 67, 1363–1372. <https://doi.org/10.1007/s00484-023-02506-3>
77. Bogdziewicz M, Acuña M-CA, Andrus R, Ascoli D, Bergeron Y, Brveiller D, Boivin T, Bonal R, Caignard T, Cailleret M, Calama R, Calderon SD, Camarero JJ, Chang-Yang C-H, Chave J, Chianucci F, Cleavitt NL, Courbaud B, Cutini A, Curt T, Das AJ, Davi H, Delpierre N, Delzon S, Dietze M, Dormont L, Farfan-Rios W, Gehring CA, Gilbert GS, Gratzer G, Greenberg CH, Guignabert A, Guo Q, Hackett-Pain A, Hampe A, Han Q, Hoshizaki K, Ibanez I, Johnstone JF, Journé V, Kitzberger T, Knops JMH, Kunstler G, Kobe R, Lageard JGA, LaMon-

tagne JM, Ledwon M, Leininger T, Limousin J-M, Lutz JA, Macias D, Marell A, McIntire EJB, Moran E, Motta R, Myers JA, Nagel TA, Naoe S, Noguchi M, Oguro M, Kurokawa H, Ourcival J-M, Parmenter R, Perez-Ramos IM, Piechnik L, Podgórski T, Poulsen J, Qiu T, Redmond MD, Reid CD, Rodman KC, Šamonil P, Holik J, Scher CL, Van Marle HS, Seget B, Shibata M, Sharma S, Silman M, Steele MA, Straub JN, Sun I-F, Sutton S, Swenson JJ, Thomas PA, Uriarte M, Vacchiano G, Veblen TT, Wright B, Wright SJ, Whitham TG, **Zhu K**, Zimmerman JK, Zywiec M, Clark JS (2023), Linking seed size and number to trait syndromes in trees. *Global Ecology and Biogeography*, 32, 683–694. <https://doi.org/10.1111/geb.13652>

2022

76. Xu Z, Johnson DJ, **Zhu K**, Lin F, Ye J, Yuan Z, Mao Z, Fang S, Hao Z, Wang X (2022), Interannual climate variability has predominant effects on seedling survival in a temperate forest. *Ecology*, e3643. <https://doi.org/10.1002/ecy.3643>.
75. Qiu T, Andrus R, Aravena M-C, Ascoli D, Bergeron Y, Berretti R, Berveiller D, Bogdziewicz M, Boivin T, Bonal R, Bragg DC, Caignard T, Calama R, Camarero JJ, Chang-Yang C-H, Cleavitt NL, Courbaud B, Courbet F, Curt T, Das AJ, Daskalakou E, Davi H, Delpierre N, Delzon S, Dietze M, Calderon SD, Dormont L, Espelta J, Fahey TJ, Farfan-Rios W, Gehring CA, Gilbert GS, Gratzner G, Greenberg CH, Guo Q, Hackett-Pain A, Hampe A, Han Q, Hille Ris Lambers J, Hoshizaki K, Ibanez I, Johnstone JF, Journé V, Kabeya D, Kilner CL, Kitzberger T, Knops JMH, Kobe RK, Kunstler G, Lageard JGA, LaMontagne JM, Ledwon M, Lefevre F, Leininger T, Limousin J-M, Lutz JA, Macias D, McIntire EJB, Moore CM, Moran E, Motta R, Myers JA, Nagel TA, Noguchi K, Ourcival J-M, Parmenter R, Pearse IS, Perez-Ramos IM, Piechnik L, Poulsen J, Poulton-Kamakura R, Redmond MD, Reid CD, Rodman KC, Rodriguez-Sanchez F, Sanguinetti JD, Scher CL, Schlesinger WH, Schmidt Van Marle H, Seget B, Sharma S, Silman M, Steele MA, Stephenson NL, Straub JN, Sun I-F, Sutton S, Swenson JJ, Swift M, Thomas PA, Uriarte M, Vacchiano G, Veblen TT, Whipple AV, Whitham TG, Wion AP, Wright B, Wright SJ, **Zhu K**, Zimmerman JK, Zlotin R, Zywiec M, Clark JS (2022), Limits to reproduction and seed size-number trade-offs that shape forest dominance and future recovery. *Nature Communications*, 13, 2381. <https://doi.org/10.1038/s41467-022-30037-9>
74. Maschler J, Bialic-Murphy L, Wan J, Andresen LC, Zohner CM, Reich PB, Lüscher A, Schneider MK, Müller C, Moser G, Dukes JS, Schmidt IK, Bilton M, **Zhu K**, Crowther TW (2022), Links across ecological scales: Plant biomass responses to elevated CO<sub>2</sub>. *Global Change Biology*, 28, 6115-6134. <http://doi.org/10.1111/gcb.16351>
73. Katz D, Vogt E, Manangan A, Brown CL, Dalan D, **Zhu K**, Song Y, Crimmins TM (2022), Observations from the USA National Phenology Network can be leveraged to model airborne pollen. *Aerobiologia*. <https://doi.org/10.1007/s10453-022-09774-3>
72. Jung CG, Xu X, Shi Z, Niu S, Xia J, Sherry R, Jiang L, **Zhu K**, Hou E, Luo Y (2022), Warmer and wetter climate promotes net primary production in C<sub>4</sub> grassland with additional enhancement by hay-harvesting. *Ecosphere*, 13(1):e3899. <https://doi.org/10.1002/ecs2.3899>
71. Journé V, Andrus R, Aravena M-C, Ascoli D, Berretti R, Berveiller D, Bogdziewicz M, Boivin

T, Bonal R, Caignard T, Calama R, Camarero JJ, Chang-Yang C-H, Courbaud B, Courbet F, Curt T, Das AJ, Daskalakou E, Davi H, Delpierre N, Delzon S, Dietze M, Donoso Calderon S, Dormont L, Maria Espelta J, Fahey TJ, Farfan-Rios W, Gehring CA, Gilbert GS, Gratzner G, Greenberg CH, Guo Q, Hackett-Pain A, Hampe A, Han Q, Lambers JHR, Hoshizaki K, Ibanez I, Johnstone JF, Kabeya D, Kays R, Kitzberger T, Knops JMH, Kobe RK, Kunstler G, Lageard JGA, LaMontagne JM, Leininger T, Limousin J-M, Lutz JA, Macias D, McIntire EJB, Moore CM, Moran E, Motta R, Myers JA, Nagel TA, Noguchi K, Ourcival J-M, Parmenter R, Pearse IS, Perez-Ramos IM, Piechnik L, Poulsen J, Poulton-Kamakura R, Qiu T, Redmond MD, Reid CD, Rodman KC, Rodriguez-Sanchez F, Sanguinetti JD, Scher CL, Marle HSV, Seget B, Sharma S, Silman M, Steele MA, Stephenson NL, Straub JN, Swenson JJ, Swift M, Thomas PA, Uriarte M, Vacchiano G, Veblen TT, Whipple AV, Whitham TG, Wright B, Wright SJ, **Zhu K**, Zimmerman JK, Zlotin R, Zywiec M, Clark JS (2022), Globally, tree fecundity exceeds productivity gradients. *Ecology Letters*, 25(6):1471–1482. <https://doi.org/10.1111/ele.14012>

70. Donnelly A, Yu R, Jones K, Belitz M, Li B, Duffy K, Zhang X, Wang J, Seyednasrollah B, Gerst K, Li D, Kaddoura Y, **Zhu K**, Morissette J, Ramey C, Smith K (2022), Exploring discrepancies between in situ phenology and remotely derived phenometrics at NEON sites. *Ecosphere*, 13(1): e3912. <https://doi.org/10.1002/ecs2.3912>

2021

69. Zhong Y, Chu C, Myers JA, Gilbert GS, Lutz JA, Stillhard J, **Zhu K**, Thompson J, Baltzer JL, He F, LaManna JA, Davies SJ, Aderson-Teixeira KJ, Burslem DFRP, Alonso A, Chao K-J, Wang X, Gao L, Orwig DA, Yin X, Sui X, Su Z, Abiem I, Bissiengou P, Bourg N, Butt N, Cao M, Chang-Yang C-H, Chao W-C, Chapman H, Chen Y-Y, Coomes DA, Cordell S, Oliveira AA de, Du H, Fang S, Giardina CP, Hao Z, Hector A, Hubbell SP, Janík D, Jansen PA, Jiang M, Jin G, Kenfack D, Král K, Larson AJ, Li B, Li X, Li Y, Lian J, Lin L, Liu F, Liu Y, Liu Y, Luan F, Luo Y, Ma K, Malhi Y, McMahon SM, McShea W, Memiaghe H, Mi X, Morecroft M, Novotny V, O'Brien MJ, Ouden J den, Parker GG, Qiao X, Ren H, Reynolds G, Samonil P, Sang W, Shen G, Shen Z, Song G-ZM, Sun I-F, Tang H, Tian S, Uowolo AL, Uriarte M, Wang B, Wang X, Wang Y, Weiblen GD, Wu Z, Xi N, Xiang W, Xu H, Xu K, Ye W, Yu M, Zeng F, Zhang M, Zhang Y, Zhu L, Zimmerman JK (2021), Arbuscular mycorrhizal trees influence the latitudinal beta-diversity gradient of tree communities in forests worldwide. *Nature Communications*, 12(1):3137. <https://doi.org/10.1038/s41467-021-23236-3>

68. Yang X, **Zhu K**, Loik ME, Sun W (2021), Differential responses of soil bacteria and fungi to altered precipitation in a meadow steppe. *Geoderma*, 384, 114812. <https://doi.org/10.1016/j.geoderma.2020.114812>

67. Wang F, Sanders CJ, Santos IR, Tang J, Schurech M, Kirwan ML, Kopp RE, **Zhu K**, Li X, Yuan J, Liu W, Li Z (2021), Global blue carbon accumulation in tidal wetlands increases with climate change. *National Science Review*, 8, nwaa296. <https://doi.org/10.1093/nsr/nwaa296>

66. Song Y, Zajic CJ, Hwang H, Hakkenberg CR, **Zhu K** (2021), Widespread mismatch between phenology and climate in human-dominated landscapes. *AGU Advances*, 2(4):



e2021AV000431. <https://doi.org/10.1029/2021AV000431>

- Featured in Editor's Highlight: [The Flowers that Bloom in the Spring \(but Later\)](#)

65. Reimer JR, Arroyo-Esquivel J, Jiang J, Scharf HR, Wolkovich EM, **Zhu K**, Boettiger C (2021), Noise can create or erase long transient dynamics. *Theoretical Ecology*, 14:685–95. <https://doi.org/10.1007/s12080-021-00518-6>
  - Honorable Mention of 2022 Outstanding Paper Award, Theoretical Ecology Section, Ecological Society of America.
64. Qiu T, Aravena M-C, Andrus R, Ascoli D, Bergeron Y, Berretti R, Bogdziewicz M, Boivin T, Bonal R, Caignard T, Calama R, Camarero JJ, Clark CJ, Courbaud B, Delzon S, Calderon SD, Farfan-Rios W, Gehring CA, Gilbert GS, Greenberg CH, Guo Q, Lambers JHR, Hoshizaki K, Ibanez I, Journé V, Kilner CL, Kobe RK, Koenig WD, Kunstler G, LaMontagne JM, Ledwon M, Lutz JA, Motta R, Myers JA, Nagel TA, Nuñez CL, Pearse IS, Piechnik Ł, Poulsen JR, Poulton-Kamakura R, Redmond MD, Reid CD, Rodman KC, Scher CL, Marle HSV, Seget B, Sharma S, Silman M, Swenson JJ, Swift M, Uriarte M, Vacchiano G, Veblen TT, Whipple AV, Whitham TG, Wion AP, Wright SJ, **Zhu K**, Zimmerman JK, Żywiec M, Clark JS (2021), Is there tree senescence? The fecundity evidence. *Proceedings of the National Academy of Sciences*, 118(34):e2106130118. <https://doi.org/10.1073/pnas.2106130118>
63. Qin C, Bartelme R, Chung YA, Fairbanks D, Lin Y, Liptzin D, Muscarella C, Naithani K, Peay K, Pellitier P, St. Rose A, Stanish L, Werbin Z, **Zhu K** (2021), From DNA sequences to microbial ecology: Wrangling NEON soil microbe data with the neonMicrobe R package. *Ecosphere*, 12(11):e03842. <https://doi.org/10.1002/ecs2.3842>
62. Nagy RC, Balch JK, Bissell EK, Cattau ME, Glenn NF, Halpern BS, Ilangakoon N, Johnson B, Joseph MB, Marconi S, O'Riordan C, Sanovia J, Swetnam TL, Travis WR, Wasser LA, Woolner E, Zarnetske P, Abdulrahim M, Adler J, Barnes G, Bartowitz KJ, Blake RE, Bombaci SP, Brun J, Buchanan JD, Chadwick KD, Chapman MS, Chong SS, Chung YA, Corman JR, Couret J, Crispo E, Doak TG, Donnelly A, Duffy KA, Dunning KH, Duran SM, Edmonds JW, Fairbanks DE, Felton AJ, Florian CR, Gann D, Gebhardt M, Gill NS, Gram WK, Guo JS, Harvey BJ, Hayes KR, Helmus MR, Hensley RT, Hondula KL, Huang T, Hundertmark WJ, Iglesias V, Jacinthe P-A, Jansen LS, Jarzyna MA, Johnson TM, Jones KD, Jones MA, Just MG, Kaddoura YO, Kagawa-Vivani AK, Kaushik A, Keller AB, King KBS, Kitzes J, Koontz MJ, Kouba PV, Kwan W-Y, LaMontagne JM, LaRue EA, Li D, Li B, Lin Y, Liptzin D, Long WA, Mahood AL, Malloy SS, Malone SL, McGlinchy JM, Meier CL, Melbourne BA, Mietkiewicz N, Morisette JT, Moustapha M, Muscarella C, Musinsky J, Muthukrishnan R, Naithani K, Neely M, Norman K, Parker SM, Perez Rocha M, Petri L, Ramey CA, Record S, Rossi MW, SanClements M, Scholl VM, Schweiger AK, Seyednasrollah B, Sihi D, Smith KR, Sokol ER, Spaulding SA, Spiers AI, St Denis LA, Staccione AP, Stack Whitney K, Stanitski DM, Stricker E, Surasinghe TD, Thomsen SK, Vasek PM, Xiaolu L, Yang D, Yu R, Yule KM, **Zhu K** (2021), Harnessing the NEON data revolution to advance open environmental science with a diverse and data-capable community. *Ecosphere*, 12(12), e03833. <https://doi.org/10.1002/ecs2.3833>
61. Liu L, **Zhu K**, Krause SMB, Li S, Wang X, Zhang Z, Shen M, Yang Q, Lian J, Wang X, Ye W,

Zhang J (2021), Changes in assembly processes of soil microbial communities during secondary succession in two subtropical forests. *Soil Biology and Biochemistry*, 154, 108144. <https://doi.org/10.1016/j.soilbio.2021.108144>

60. Jones J, Groffman PM, Blair J, Davis FW, Dugan H, Euskirchen ES, Frey SD, Harms T, Hinckley E, Kosmala M, Loberg S, Malone S, Novick K, Record S, Rocha AV, Ruddell B, Stanley EH, Sturtevant C, Thorpe A, White T, Wieder WR, Zhai L, **Zhu K** (2021), Synergies among environmental science research and monitoring networks: A research agenda. *Earth's Future*, 9, e2020EF001631. <https://doi.org/10.1029/2020EF001631>
59. Freeman BG, Song Y, Feeley KJ, **Zhu K** (2021), Montane species track rising temperatures better in the tropics than in the temperate zone. *Ecology Letters*, 24, 1697-1708. <https://doi.org/10.1111/ele.13762>
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- 2020
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20. Lankau RA, **Zhu K**, Ordonez A (2015), Mycorrhizal strategies of tree species correlate with trailing range edge responses to current and past climate change. *Ecology*, 96, 1451-1458. <https://doi.org/10.1890/14-2419.1>

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18. Terborgh J, **Zhu K**, Álvarez-Loayza P, Cornejo-Valverde F (2014), How many seeds does it take to make a sapling? *Ecology*, 95, 991-999. <https://doi.org/10.1890/13-0764.1>
17. Clark JS, Gelfand AE, Woodall CW, **Zhu K** (2014), More than the sum of the parts: forest climate response from joint species distribution models. *Ecological Applications*, 24, 990-999. <https://doi.org/10.1890/13-1015.1>
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14. Woodall CW, Westfall JA, **Zhu K**, Johnson DJ (2013), Assessing the effect of snow/water obstructions on the measurement of tree seedlings in a large-scale temperate forest inventory. *Forestry*, 86, 421-427. <https://doi.org/10.1093/forestry/cpt013>
13. Clark JS, Bell DM, Kwit MC, Powell A, **Zhu K** (2013), Dynamic inverse prediction and sensitivity analysis with high-dimensional responses: application to climate-change vulnerability of biodiversity. *Journal of Agricultural, Biological, and Environmental Statistics*, 18, 376-404. <https://doi.org/10.1007/s13253-013-0139-9>

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12. **Zhu K**, Woodall CW, Clark JS (2012), Failure to migrate: lack of tree range expansion in response to climate change. *Global Change Biology*, 18, 1042-1052. <https://doi.org/10.1111/j.1365-2486.2011.02571.x>
  - Top 4% cited article (25 out of 608) in Web of Science.
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  - Cited in textbook Smith TM and Smith RL (2015), *Elements of Ecology*, (9th edition, Pearson, page 601).
  - Featured by United Press International (UPI), American Association for the Advancement of Science (AAAS) *EurekAlert!*, *USA Today*, Climate Central, *Conservation Magazine*, *The Charlotte Observer*, North Carolina Public Radio WUNC, Duke University, and others.
11. **Zhu K**, Ghosh S, Gelfand AE, Clark JS (2012), New approaches to FIA data for understanding distribution, abundance, and response to climate change. In: *Moving from Status to Trends: Forest Inventory and Analysis (FIA) Symposium 2012*, USDA Forest Service, Northern Research Station, General Technical Report NRS-P-105. <https://www.nrs.fs.fed.us/pubs/42676>
10. Ghosh S, Gelfand AE, **Zhu K**, Clark JS (2012), The k-ZIG: flexible modeling for zero-inflated counts. *Biometrics*, 68, 878-885. <https://doi.org/10.1111/j.1541-0420.>

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9. Clark JS, Bell DM, Kwit M, Stine A, Vierra B, **Zhu K** (2012), Individual-scale inference to anticipate climate-change vulnerability of biodiversity. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 367, 236-246. <https://doi.org/10.1098/rstb.2011.0183>

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8. Wang YS, Chu CJ, **Zhu K**, Shen ZH (2011), Effects of inter-specific variability on biomass allocation: a hierarchical Bayesian approach. *Ecological Informatics*, 6, 341-344. <https://doi.org/10.1016/j.ecoinf.2011.08.003>
7. Clark JS, Bell DM, Hersh MH, Kwit MC, Moran E, Salk C, Stine A, Valle D, **Zhu K** (2011), Individual-scale variation, species-scale differences: inference needed to understand diversity. *Ecology Letters*, 14, 1273-1287. <https://doi.org/10.1111/j.1461-0248.2011.01685.x>

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6. **Zhu K**, Gao Q, Zhang ZC, Zhou C (2008), A calibration problem in applying eddy-covariance technique to measure Bowen ratio. *Journal of Beijing Normal University (Natural Science)*, 44, 207-211.
5. **Zhu K**, Gao Q, Li X, Yang X (2008), Quantifying regional ecosystem services based on simulation using the SWAT model for the upper-mid Yellow River basin. In: *Proceedings of the 5th International SWAT Conference*, Beijing, China.
4. Zhang ZC, Liu JS, **Zhu K**, Tao Y, Shao ZY, Tian YQ (2008), Temporal patterns and driving factors of CO<sub>2</sub> flux at different soil depth profiles on typical steppe of Inner Mongolia. *Ecology and Environment*, 17, 2024-2030.
3. Tian YQ, Gao Q, Zhang ZC, Zhang Y, **Zhu K** (2009), The advances in study on plant photosynthesis and soil respiration of alpine grasslands on the Tibetan Plateau. *Ecology and Environmental Sciences*, 18, 711-721.
2. Liu Y, Yue JW, Li J, Cai HC, Qin M, Xu J, **Zhu K**, Peng C (2007), Research and application of PowerCMS middleware in information updating of agricultural e-commerce. *New Zealand Journal of Agricultural Research*, 50, 951-958.
1. Chen XH, Chen J, Yang W, **Zhu K** (2008), Study on combined classifier based on error analysis. *Journal of Remote Sensing*, 12, 683-691.

## Presentations

### INVITED SEMINARS

2024

Ohio State University, School of Earth Sciences, Columbus, OH.

University of Michigan, School for Environment and Sustainability, Ann Arbor, MI.



- 2023 Yale University, School of the Environment, New Haven, CT.  
University of Michigan, Michigan Institute for Data Science, Ann Arbor, MI.  
University of Michigan, Department of Ecology and Evolutionary Biology, Ann Arbor, MI.
- 2022 University of California, Santa Cruz, Department of Statistics, Santa Cruz, CA.  
University of California, Davis, Department of Evolution and Ecology, Davis, CA.  
University of Connecticut, Department of Natural Resources and the Environment, Storrs, CT.  
University of Michigan, School for Environment and Sustainability, Ann Arbor, MI.
- 2021 New Phytologist Tansley Medal Winner webinar (online).  
University of California, Santa Cruz, Department of Earth and Planetary Sciences, Santa Cruz, CA (online).  
University of California, Santa Cruz, Department of Computer Science and Engineering, Santa Cruz, CA (online).  
Northern Arizona University, Department of Biological Sciences, Flagstaff, AZ (online).  
Temple University, Department of Biology, Philadelphia, PA (online).  
Ecological Society of America, Sino-Ecologists Association Overseas (online).
- 2020 University of California, Santa Cruz, Department of Environmental Studies, Santa Cruz, CA (online).  
Chinese Academy of Sciences, Biodiversity Committee and Chinese Forest Biodiversity Monitoring Network, Beijing, China (online).
- 2019 University of Georgia, Odum School of Ecology, Athens, GA.  
University of California, Santa Cruz, Department of Environmental Studies, Santa Cruz, CA.
- 2018 University of California, Santa Cruz, Department of Applied Mathematics and Statistics, Santa Cruz, CA.
- 2017 Stanford University, Stanford Complexity Group, Stanford, CA.  
Virginia Polytechnic Institute and State University, Department of Forest Resources and Environmental Conservation, Blacksburg, VA.  
University of California, Riverside, Department of Environmental Sciences, Riverside, CA.  
University of Oklahoma, Department of Microbiology and Plant Biology, Norman, OK.  
University of California, Santa Cruz, Department of Environmental Studies, Santa Cruz, CA.  
University of California, Davis, Department of Land, Air and Water Resources, Davis, CA.
- 2016 Beijing Normal University, State Key Laboratory of Earth Surface Processes and Resource Ecology, Beijing, China.  
Chinese Academy of Sciences, Institute of Botany, Beijing, China.  
Chinese Academy of Sciences, Institute of Tibetan Plateau Research, Beijing, China.

East China Normal University, School of Ecological and Environmental Sciences, Shanghai, China.

Sun Yat-sen University, School of Life Sciences, Guangzhou, China.

Rice University, Department of BioSciences, Houston, TX.

2015 University of Texas, Arlington, Department of Biology, Arlington, TX.  
Rice University, Department of BioSciences, Houston, TX.  
Carnegie Institution for Science, Department of Global Ecology, Stanford, CA.  
Stanford University, Department of Biology, Stanford, CA.

2014 Duke University, Nicholas School of the Environment, Durham, NC.

2013 Stanford University, Department of Biology, Stanford, CA.  
North Carolina State University, Department of Forestry and Environmental Resources, Raleigh, NC.  
Peking University, Department of Ecology, Beijing, China.  
Chinese Academy of Sciences, Institute of Botany, Beijing, China.

2012 Duke University, Department of Biology, Durham, NC.  
Duke University, Nicholas School of the Environment, Durham, NC.

2011 Beijing Normal University, College of Resources Science and Technology, Beijing, China.  
Duke University, Nicholas School of the Environment, Durham, NC.

#### CONTRIBUTED CONFERENCES

2024 Ecological Society of America, Annual Meeting, Long Beach, CA (invited).

2023 Ecological Society of America, Annual Meeting, Portland, OR.

2022 American Geophysical Union, Fall Meeting, Chicago, IL.  
Ecological Society of America, Annual Meeting, Montréal, Québec, Canada (invited).

2021 American Geophysical Union, Fall Meeting, New Orleans, LA.  
Ecological Society of America, Annual Meeting, Long Beach, CA (online).

2020 Ecological Society of America, Annual Meeting, Salt Lake City, UT (online).

2019 American Geophysical Union, Fall Meeting, San Francisco, CA.  
National Ecological Observatory Network (NEON) Science Summit, Boulder, CO.  
National Institute for Mathematical and Biological Synthesis, Knoxville, TN.  
Biennial UC Santa Cruz Plant Sciences Symposium, Santa Cruz, CA.

2018

- American Geophysical Union, Fall Meeting, Washington, DC.  
Ecological Society of America, Annual Meeting, New Orleans, LA.
- 2017 Ecological Society of America, Annual Meeting, Portland, OR.  
National Center for Ecological Analysis and Synthesis, Santa Barbara, CA.  
National Institute for Mathematical and Biological Synthesis, Knoxville, TN.
- 2016 American Geophysical Union, Fall Meeting, San Francisco, CA.  
Ecological Society of America, Annual Meeting, Fort Lauderdale, FL.
- 2015 American Geophysical Union, Fall Meeting, San Francisco, CA.  
Ecological Society of America, Annual Meeting, Baltimore, MD.
- 2014 American Geophysical Union, Fall Meeting, San Francisco, CA.  
Ecological Society of America, Annual Meeting, Sacramento, CA.
- 2013 Ecological Society of America, Annual Meeting, Minneapolis, MN.  
National Center for Atmospheric Research, Next Generation Climate Data Products Workshop, Boulder, CO.  
National Science Foundation, Macrosystems Research Training Workshop: Integrating Evidence on Forest Response to Climate Change, Durham, NC.  
International Biogeography Society, Biennial Conference, Miami, FL.
- 2012 USDA Forest Service, Forest Inventory and Analysis (FIA) Symposium, Baltimore, MD.  
National Science Foundation, Research Coordination Network – Forecasts of Resource and Environmental Changes: Data Assimilation Science and Technology (RCN-FORECAST) Initiative Conference, Woods Hole, MA.  
Ecological Society of America, Annual Meeting, Portland, OR.  
National Science Foundation, Coweeta Long Term Ecological Research (LTER) Summer Symposium, Otto, NC.
- 2011 Ecological Society of America, Annual Meeting, Austin, TX.  
National Science Foundation, Coweeta Long Term Ecological Research (LTER) Mid-Term Review, Otto, NC.  
Virginia Polytechnic Institute and State University, North American Forest Ecology Workshop, Roanoke, VA.
- 2008 Beijing Normal University, International Soil and Water Assessment Tool (SWAT) Conference, Beijing, China.  
National Science Foundation of China, Forum on Integrated Eco-hydrology Study of Inland Water Basin, Lanzhou, China.

## Media Appearances

- 2024 University of Michigan, [SEAS Associate Professor Kai Zhu: How climate change affects forest and grassland ecosystems](#).  
University of Michigan, [Climate change threatens global forest carbon sequestration, study finds](#).
- 2023 *The Daily Herald*, [Climate change lengthening pollen season, making allergies worse](#).  
University of Michigan, [Meet the future: Big data and sustainability solutions](#).
- 2021 University of California, Santa Cruz, [New study shows plants struggle to keep pace with climate change in human-dominated landscapes](#).  
University of California, Santa Cruz, [Quantitative ecologist Kai Zhu wins NSF funding for climate change research and education](#).  
*Popular Science*, [Why forests in the Andes are crucial to fighting climate change](#).  
NPR-member radio station KAZU, [What a decade of counting seeds tells us about future West Coast forests](#).  
University of California, Santa Cruz, [UC Santa Cruz faculty recognized for excellence in ecology](#).  
*Good Times Santa Cruz*, [Study finds climate change alters West Coast trees](#).  
University of California, Santa Cruz, [Forest monitoring efforts contribute to new understanding of climate change impacts](#).
- 2020 University of California, Santa Cruz, [Quantitative ecologist wins Tansley Medal for plant science contributions](#).  
Stanford University, [Fire history and plant community drive changes in soil microbiome, outweighing global change factors](#).
- 2019 University of California, Santa Cruz, [Major NSF grant supports research on soil fungi](#).
- 2018 *The Guardian*, [Climate change will make hundreds of millions more people nutrient deficient](#).  
United Press International, [Forest growth limited over next 60 years, study finds](#).  
American Association for the Advancement of Science, [New research calculates capacity of North American forests to sequester carbon](#).  
University of California, Santa Cruz, [New research calculates capacity of North American forests to sequester carbon](#).  
University of California, Santa Cruz, [Soil fungi may help determine the resilience of forests to environmental change, according to UC Santa Cruz study](#).
- 2016 Associated Press, [Future climate change field test doesn't make Earth greener](#).  
*The Guardian*, [New study undercuts favorite climate myth 'more CO<sub>2</sub> is good for plants'](#).  
American Institute of Physics, [California grasslands grow less, not more, under climate change](#).  
Rice University, [Warmer, wetter climate would impair California grasslands](#).  
Carnegie Institution for Science, [Grassland tuned to present suffers in a warmer future](#).  
Rice University, [Ocean acidification already slowing coral reef growth](#).
- 2015 Associated Press, [Figuring the odds of Earth's global hot streak](#).

- 2013 North Carolina Public Radio WUNC, [Climate change speeding up life cycles of trees.](#)  
 Duke Chronicle, [Study examines effect of climate change on forest turnover.](#)  
 Duke University, [Climate change may speed up forests' life cycles.](#)
- 2011 United Press International, [Trees not adapting well to climate change.](#)  
 American Association for the Advancement of Science, [Forests not keeping pace with climate change.](#)  
 USA Today, [Most U.S. forests not adapting to climate change.](#)  
 Climate Central, [Can trees keep up with climate change?](#)  
 Conservation Magazine, [Failure to migrate.](#)  
 The Charlotte Observer, [Eastern forests not adapting quickly to climate change.](#)  
 North Carolina Public Radio WUNC, [Rising temps tough on some trees.](#)  
 Duke University, [Forests not keeping pace with climate change.](#)

## Professional Activities

### GRANT PROPOSAL PANEL REVIEWS

- 2024 National Aeronautics and Space Administration, Future Investigators in NASA Earth and Space Science and Technology.  
 National Science Foundation, Directorate for Biological Sciences, Division of Environmental Biology.
- 2022 National Science Foundation, Directorate for Computer and Information Science and Engineering, Office of Advanced Cyberinfrastructure.
- 2021 National Science Foundation, Directorate for Biological Sciences, Division of Biological Infrastructure.  
 National Science Foundation, Directorate for Biological Sciences, Division of Environmental Biology.
- 2019 National Aeronautics and Space Administration, Research Opportunities in Space and Earth Science.
- 2018 Department of Agriculture, National Institute of Food and Agriculture.  
 University of California, Institute for Mexico and the United States.

### GRANT PROPOSAL AD HOC REVIEWS

- 2023 European Research Council, Advanced Grant.
- 2022 UK Research and Innovation, Natural Environment Research Council.  
 Poland National Science Centre.
- 2019 National Science Foundation, Directorate for Biological Sciences, Division of Environmental Biology.  
 UK Research and Innovation, Natural Environment Research Council.

- 2018 Rocky Mountain Biological Laboratory.
- 2017 National Science Foundation, Directorate for Biological Sciences, Division of Environmental Biology.  
Department of Defense, Strategic Environmental Research and Development Program.
- 2015 National Science Foundation, Directorate for Biological Sciences, Division of Environmental Biology.
- 2014 National Science Foundation, Directorate for Biological Sciences, Division of Environmental Biology.

#### JOURNAL EDITORIAL BOARDS

- 2024 Editor, British Ecological Society Cross Journal Special Feature, *Functional Ecology*, *Journal of Animal Ecology*, *Journal of Ecology*, *Methods in Ecology and Evolution*, *People and Nature*
- 2023– Advisor, *New Phytologist*
- 2023 Committee Member, Editor-in-Chief Search Committee, *Frontiers in Ecology and the Environment*
- 2022– Associate Editor, *Frontiers in Ecology and the Environment*

#### JOURNAL MANUSCRIPT REVIEWS

- Acta Oecologica* (2014)
- Advances in Water Resources* (2013)
- Agricultural and Forest Meteorology* (2018, 2020)
- American Naturalist* (2017)
- Annals of Applied Statistics* (2019)
- Biology Letters* (2016)
- BMC Plant Biology* (2018)
- Canadian Journal of Forest Research* (2020)
- Carbon Balance and Management* (2021)
- Climatic Change* (2013)
- Data-Enabled Discovery and Applications* (2017)
- Earth System Science Data* (2018)
- Ecography* (2012, 2014a, 2014b, 2015, 2016, 2019, 2023)
- Ecological Applications* (2015, 2018, 2022a, 2022b)
- Ecology* (2013a, 2013b, 2016, 2019, 2020, 2022)
- Ecology and Evolution* (2015)
- Ecology Letters* (2014a, 2014b, 2016, 2017a, 2017b, 2018a, 2018b, 2018c, 2019, 2020a, 2020b, 2022, 2023a, 2023b)
- Ecosphere* (2019, 2020)
- Ecosystems* (2013)

*Environmental Conservation* (2013)  
*Environmental Research Letters* (2020, 2021, 2022)  
*European Journal of Forest Research* (2010)  
*Forest Ecology and Management* (2013)  
*Forests* (2018)  
*Frontiers in Ecology and Evolution* (2020)  
*Frontiers in Ecology and the Environment* (2018)  
*Frontiers in Marine Science* (2019)  
*Functional Ecology* (2016, 2017)  
*Global Change Biology* (2013, 2015a, 2015b, 2015c, 2015d, 2015e, 2017, 2019, 2022a, 2022b, 2023)  
*Global Ecology and Biogeography* (2015, 2016, 2018, 2019a, 2019b, 2020)  
*Global Ecology and Conservation* (2021)  
*Journal of Arid Environments* (2020)  
*Journal of Biogeography* (2012a, 2012b, 2013, 2015, 2017)  
*Journal of Ecology* (2014a, 2014b, 2017a, 2017b, 2017c, 2018a, 2018b, 2018c, 2019, 2021)  
*Journal of Plant Ecology* (2012)  
*Methods in Ecology and Evolution* (2022)  
*National Science Review* (2017, 2021)  
*Nature* (2022)  
*Nature Climate Change* (2016, 2021)  
*Nature Communications* (2018, 2020)  
*Nature Ecology and Evolution* (2020, 2023a, 2023b, 2023c, 2024)  
*Nature Geoscience* (2020)  
*New Phytologist* (2018a, 2018b, 2019, 2022)  
*Oecologia* (2015)  
*PLOS ONE* (2015, 2017a, 2017b)  
*Philosophical Transactions of the Royal Society B: Biological Sciences* (2016)  
*Proceedings of the National Academy of Sciences* (2012, 2015, 2017a, 2017b, 2018, 2019a, 2019b, 2022, 2023, 2024)  
*Remote Sensing* (2018, 2019a, 2019b, 2019c)  
*Remote Sensing of Environment* (2022)  
*Science* (2022)  
*Science of the Total Environment* (2017, 2018)  
*Scientific Reports* (2014, 2018)  
*Soil Biology and Biochemistry* (2018)  
*Transactions in GIS* (2012)

BOOK PROPOSAL REVIEWS

2017

Oxford University Press

## SYNERGISTIC ACTIVITIES

- 2024 Convener, American Geophysical Union, Fall Meeting, Organized Session.
- 2023–2024 Advisor, New Phytologist Next Generation Scientists Symposium, Organizing Committee.
- 2023 Convener, American Geophysical Union, Fall Meeting, Organized Session.
- 2022 Convener, American Geophysical Union, Fall Meeting, Organized Session.
- 2021–2024 Committee Member, Ecological Society of America, Publications Committee.
- 2019–2020 Elected Member, National Ecological Observatory Network, Data Standards Technical Working Group.  
Elected Member, National Ecological Observatory Network, Ecological Forecasting Technical Working Group.
- 2019 Faculty Member, National Ecological Observatory Network, Data Education Scholars Faculty Mentoring Network.  
External Reviewer, Department of Agriculture Forest Service.
- 2013 Co-organizer, Ecological Society of America, Annual Meeting, Organized Oral Session.

## University Service

- 2024 Committee Member, University of Michigan, School for Environment and Sustainability, Climate Finance Faculty Search Committee.  
Committee Chair, University of Michigan, School for Environment and Sustainability, Faculty Third Year Review Select Committee.
- 2023– Committee Member, University of Michigan, Institute for Global Change Biology, Faculty Executive Committee.
- 2023 Committee Member, University of Michigan, Michigan Institute for Data Science, Program Committee.
- 2022– Committee Member, University of Michigan, Institute for Global Change Biology, Faculty Steering Committee.  
Committee Member, University of Michigan, Institute for Global Change Biology, Postdoc Selection Committee.
- 2022–2023 Committee Member, University of Michigan, School for Environment and Sustainability, Sustainable Systems Faculty Search Committee.
- 2022 Faculty Panelist, University of California, Santa Cruz, NSF CAREER Information Session.
- 2021–2022 Committee Chair, University of California, Santa Cruz, Department of Environmental Studies, Awards Committee.  
Committee Member, University of California, Santa Cruz, Department of Environmental Studies, Graduate Committee.  
Committee Member, University of California, Santa Cruz, Department of Environmental Studies, Chair Succession Committee.



- Committee Member, University of California, Santa Cruz, Jean H. Langenheim Graduate Fellowship in Plant Ecology and Evolution & Hardman Native Plant Award Committee.
- 2021 Committee Member, University of California, Santa Cruz, Jean H. Langenheim Graduate Fellowship in Plant Ecology and Evolution & Hardman Native Plant Award Committee.
- 2019–2020 Committee Member, University of California, Santa Cruz, Department of Environmental Studies, Curriculum Committee.  
Department Representative, University of California, Santa Cruz, Division of Social Sciences, Global Health – Health Data Faculty Search Committee
- 2019 Panelist, University of California, Santa Cruz, Doris Duke Conservation Scholars Program. External Reviewer, Ecological Society of America, Early Career Ecologist Section.
- 2018–2019 Committee Chair, University of California, Santa Cruz, Department of Environmental Studies, Awards Committee.  
Committee Member, University of California, Santa Cruz, Department of Environmental Studies, Chair Succession Committee.
- 2018 Member, University of California, Santa Cruz, Data Science Strategic Academic Planning Themed Academic Working Group.  
Committee Member, University of California, Santa Cruz, Jean H. Langenheim Graduate Fellowship in Plant Ecology and Evolution & Hardman Native Plant Award Committee.
- 2017–2018 Committee Member, University of California, Santa Cruz, Department of Environmental Studies, Personnel and Awards Committee.
- 2015 Panelist, Stanford University, Chinese Students and Scholars Symposium.  
Committee Member, Stanford University, Association of Chinese Students and Scholars.
- 2014 Co-host, Stanford University, Graduate Summer Institute, Jasper Ridge Tour.
- 2013 Committee Member, Duke University, University Program in Ecology Symposium *Ecology across Scales*.
- 2011 International Student Representative, Duke University, Nicholas School of the Environment, Fall Orientation Committee.
- 2010–2011 Committee Member, Duke University, Chinese Student and Scholar Association.
- 2009–2010 Committee Member, Duke University, Nicholas School of the Environment, PhD Student Government.

## Advising & Mentoring

### POSTDOCTORAL SCHOLAR ADVISOR

- 2024– Hengxing Zou  
(Co-advised with Brian C. Weeks)  
University of Michigan, Institute for Global Change Biology Postdoctoral Fellow
- 2023– Yiluan Song  
(Co-advised with Yang Chen)

- University of Michigan, Eric and Wendy Schmidt AI in Science Postdoctoral Fellow
- 2023– Wenqi Luo  
(Co-advised with Donald R. Zak)  
University of Michigan, Institute for Global Change Biology Postdoctoral Fellow
- 2022– Liting Zheng  
(Co-advised with Peter B. Reich)  
University of Michigan, Institute for Global Change Biology Postdoctoral Fellow
- 2021–2022 Michael Van Nuland  
(Co-advised with Kabir G. Peay)  
University of California, Santa Cruz & Stanford University
- 2020–2022 Peter T. Pellitier  
(Co-advised with Kabir G. Peay)  
University of California, Santa Cruz & Stanford University  
NSF Postdoctoral Research Fellowships in Biology
- 2019 Brian S. Steidinger  
(Co-advised with Kabir G. Peay)  
University of California, Santa Cruz & Stanford University  
Humboldt Research Fellowship for Experienced Researchers
- 2018 Lan Liu  
(Co-advised with Jian Zhang)  
University of California, Santa Cruz & East China Normal University
- 2017–2018 Cong Wang  
University of California, Santa Cruz & University of Texas, Arlington

#### DOCTORAL STUDENT ADVISOR

- 2023– Jiali Zhu  
University of Michigan, School for Environment and Sustainability
- 2023– Tim Muhich  
(Co-advised with Michaela T. Zint)  
University of Michigan, School for Environment and Sustainability
- 2023– Yi Liu  
University of Michigan, School for Environment and Sustainability
- 2023– Shike Zhang  
University of Michigan, School for Environment and Sustainability
- 2018–2023 Yiluan Song  
University of California, Santa Cruz, Department of Environmental Studies  
Regent's Fellowship & Hammett Fellowship  
E.C. Pielou Award, Ecological Society of America

- 2018–2022 Clara Qin  
University of California, Santa Cruz, Department of Environmental Studies  
Chancellor’s Fellowship & Regent’s Fellowship  
Ford Foundation Predoctoral Fellowship Honorable Mention
- 2021–2022 Hayes Devaney  
(Co-advised with Nicole Feldl)  
University of California, Santa Cruz, Department of Earth and Planetary Sciences
- 2019–2022 Sarah Lummis  
(Co-advised with Kristy J. Kroeker)  
University of California, Santa Cruz, Department of Ecology and Evolutionary Biology

DOCTORAL STUDENT COMMITTEE MEMBER

- 2024– Hitaishi Desai  
Advisor: Inés Ibáñez  
University of Michigan, School for Environment and Sustainability
- 2024– Tomas Fuentes-Rohwer  
Advisor: María Natalia Umaña  
University of Michigan, Department of Ecology and Evolutionary Biology
- 2023– Anna Yue Yu  
Advisor: Neil H. Carter  
University of Michigan, School for Environment and Sustainability
- 2023– Yingxiao Zhang  
Advisor: Allison Steiner  
University of Michigan, Department of Climate and Space Sciences and Engineering
- 2023– Charlotte Probst  
Advisor: Brian C. Weeks  
University of Michigan, School for Environment and Sustainability
- 2022 Zach Horton  
Advisor: Thanasis Kottas  
University of California, Santa Cruz, Department of Statistics
- 2022 Carrie Hamilton  
Advisor: Jeffrey Bury  
University of California, Santa Cruz, Department of Environmental Studies
- 2022 Sifat Chowdhury  
Advisor: Yu Zhang  
University of California, Santa Cruz, Department of Electrical and Computer Engineering
- 2022 Shuangjie Zhang  
Advisor: Juhee Lee  
University of California, Santa Cruz, Department of Statistics

- 2021–2022 Christina Blebea  
 Advisor: Karen D. Holl  
 University of California, Santa Cruz, Department of Environmental Studies
- 2021–2022 Ted Liu  
 Advisor: Galina Hale  
 University of California, Santa Cruz, Department of Economics
- 2020–2022 Siyu Luo  
 Advisor: J. Elliott Campbell  
 University of California, Santa Cruz, Department of Environmental Studies
- 2020– Melanie K. Taylor  
 Advisor: Nina Wurzburger  
 University of Georgia, Odum School of Ecology
- 2019–2021 Brook Constantz  
 Advisor: Karen D. Holl  
 University of California, Santa Cruz, Department of Environmental Studies
- 2019–2022 Jon Detka  
 Advisor: Gregory S. Gilbert  
 University of California, Santa Cruz, Department of Environmental Studies
- 2019–2022 Daniel Hastings  
 Advisor: Michael E. Loik  
 University of California, Santa Cruz, Department of Environmental Studies
- 2019–2020 David Shaw  
 Advisor: Chris Benner  
 University of California, Santa Cruz, Department of Environmental Studies
- 2018–2021 Anna Nisi  
 Advisor: Christopher C. Wilmers  
 University of California, Santa Cruz, Department of Environmental Studies
- 2018–2019 Graeme Baird  
 Advisor: Carol Shennan  
 University of California, Santa Cruz, Department of Environmental Studies
- 2017–2022 Nazanin Rezaei  
 Advisor: Adam Millard-Ball  
 University of California, Santa Cruz, Department of Environmental Studies
- 2016–2020 J. Therese Lamperty  
 Advisor: Amy E. Dunham  
 Rice University, Department of BioSciences

MASTER'S STUDENT MENTOR

2023–

- Xiuyu Cao  
University of Michigan, School for Environment and Sustainability
- 2022–2024 Ruoyu Wu  
University of Michigan, School for Environment and Sustainability
- 2022 Jessica Pan  
University of California, Santa Cruz, Department of Computer Science and Engineering
- 2022 Chuangbo Tong  
University of California, Santa Cruz, Department of Computer Science and Engineering
- 2019–2020 Ross Davison  
University of California, Santa Cruz, Graduate Program in Coastal Science and Policy
- 2019 Kaixin Liu  
University of California, Santa Cruz, Department of Computer Science and Engineering
- 2019 Diana Gerardo  
University of California, Santa Cruz, Department of Statistics
- 2019 Mary Silva  
University of California, Santa Cruz, Department of Statistics
- 2018–2020 Erica Mullins  
University of California, Santa Cruz, Department of Environmental Studies
- 2018 Brett Stacy  
University of California, Santa Cruz, Department of Applied Mathematics and Statistics
- 2014–2015 Clara Qin  
Stanford University, Department of Biology & Department of Statistics
- 2013–2014 Siyu Qin  
Duke University, Nicholas School of the Environment

UNDERGRADUATE STUDENT MENTOR

- 2023– Oviyan Anbarasu  
University of Michigan, Data Science
- 2023– Ziyu Zhou  
University of Michigan, Statistics
- 2023 Chenyang Zhang  
University of Michigan, Mathematics & Data Science
- 2023 Zhe Chen  
University of Michigan, Computer Science
- 2023 Chun Ho Ries Cheung  
University of Michigan, Computer Science
- 2022 Tyler Morton

- University of California, Santa Cruz, Computer Science and Engineering
- 2022 Sammy Tesfai  
University of California, Santa Cruz, Computer Science and Engineering
- 2021 Luke Hamilton  
University of California, Santa Cruz, Earth and Planetary Sciences
- 2021 Megan T. Cao  
University of California, Santa Cruz, Environmental Studies & Economics
- 2020–2021 Benjamin K. Weaver  
University of California, Santa Cruz, Environmental Studies
- 2020 Caitlin A. Schilt  
University of California, Santa Cruz, Environmental Studies & Economics
- 2020–2021 Noa Mills  
University of California, Santa Cruz, Mathematics & Computer Science and Engineering
- 2019–2020 Priscilla Lam  
University of California, Santa Cruz, Environmental Studies & Computer Science and Engineering
- 2018–2021 Christopher Zajic  
University of California, Santa Cruz, Earth and Planetary Sciences
- 2018 William Jiajie Li  
University of California, Santa Cruz, Earth and Planetary Sciences
- 2018–2019 Grace Reed  
University of California, Santa Cruz, Environmental Studies

#### VISITING SCHOLAR AND STUDENT HOST

- 2024 Carolina Arguiano  
National University of La Plata, Argentina
- 2023– Pengcheng Liu  
East China Normal University, China
- 2023– Yuan Li  
Taiyuan University of Science and Technology, China
- 2023 Shijing Liang  
Southern University of Science and Technology, China

## Courses

### INSTRUCTOR

- 2024– Natural Resource Statistics  
University of Michigan
- 2019–2022 Data Science for the Environment  
University of California, Santa Cruz
- 2019–2021 General Ecology  
University of California, Santa Cruz
- 2018–2021 Landscape Ecology  
University of California, Santa Cruz
- 2016 Design and Analysis of Biological Experiments  
Rice University
- 2016 Bayesian Analysis for Ecologists  
Sun Yat-sen University

### GUEST LECTURER

- 2017–2021 Research Approaches in Environmental Studies  
University of California, Santa Cruz
- 2018 Ecology and Society  
University of California, Santa Cruz
- 2018 Climate Change Ecology  
University of California, Santa Cruz
- 2018 Graduate Research Seminar  
University of California, Santa Cruz
- 2016 Core Course in Ecology and Evolutionary Biology  
Rice University

### TEACHING ASSISTANT

- 2014 Landscape Analysis and Management  
Duke University
- 2009 Spatial-Temporal Environmental Models  
Duke University
- 2007 Methods and Practices of Ecosystem Modeling  
Beijing Normal University
- 2006 Principles of Terrestrial Ecosystem Ecology  
Beijing Normal University

Last updated: May 17, 2024