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 and AI in Society
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

2024– Forest Futures: Geospatial data science and artificial intelligence for sustainable forestry in Michigan
PI: **Kai Zhu**, co-PIs: Joshua P. Newell, Dimitrios Gounaridis
US Department of Agriculture, McIntire-Stennis Cooperative Forestry Research Program

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

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

2019–2024 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

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– Corporate biodiversity footprints
PI: **Kai Zhu**, co-PI: Brian C. Weeks, Eric Zou
University of Michigan, School for Environment and Sustainability

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– 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

2023–2024 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

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: 5836, h-index: 37, i10-index: 72.
Mentee authors underlined.

In review

103. Wu R, Song Y, Head JR, Katz DS, Peay KG, Shedden K, **Zhu K** (in review) Fungal spore seasons advanced across the US over two decades of climate change. https://doi.org/10.1101/2024.10.21.619107

102. Song Y, Millard-Ball A, Fox N, Van Berkel D, Agrawal A, **Zhu K** (in review) Biological changes, political ideology, and scientific communication shape human perceptions of pollen seasons. https://doi.org/10.1101/2024.07.30.605525

101. Song Y, Barnes M, Browning DM, Bybee-Finley KA, Dahlin KM, Munch SB, Ponce-Campos GE, Youngflesh C, Zuckerberg B, **Zhu K** (in review) Ecological synchrony in human-modified landscapes under a changing climate. https://doi.org/10.1101/2024.11.09.621137

In press

100. Song Y, Katz DSW, Zhu Z, Beaulieu C, **Zhu K** (in press) Predicting reproductive phenology of wind-pollinated trees via PlanetScope time series. *Science of Remote Sensing*. https://doi.org/10.1016/j.srs.2025.100205

99. Pellitier P, Kling M, Qin C, Van Nuland M, **Zhu K**, Peay K (in press) Wind patterns influence the dispersal and assembly of North American soil fungal communities. *Ecology Letters*.

98. Liang S, Ziegler AD, Reich PB, **Zhu K**, Wang D, Jiang X, Chen D, Ciais P, Zeng Z (in press) Climate mitigation potential for targeted forestation after considering climate change, fires, and albedo. *Science Advances*.

97. Hogan JA, Lichstein J, Helmer E, Craig M, Fricke E, Heinrich V, Kannenberg S, Koven C, Klein Goldewijk K, Lapola D, Li Y, Malhi Y, Quinn J, Roe S, Terrer C, Vilanova E, Walker A, **Zhu K**, Ellis E (in press) Anthromes and forest carbon responses to global change. *Plants, People, Planet*. https://doi.org/10.1002/ppp3.10609

2024

96. **Zhu K**, Song Y, Lesage JC, Luong JC, Bartolome JW, Chiariello NR, Dudney J, Field CB, Hallett LM, Hammond M, Harrison SP, Hayes GF, Hobbs RJ, Holl KD, Hopkinson P,

Larios L, Loik ME, Prugh LR (2024) Rapid shifts in grassland communities driven by climate change. *Nature Ecology and Evolution*, 8, 2252. https://doi.org/10.1038/s41559-024-02552-z

- Featured in Research Briefing: Grassland communities rapidly respond to climate change to settle climatic debts. *Nature Ecology and Evolution* (2024). https://doi.org/10.1038/s41559-024-02561-y.
- Blogged in Springer Nature Research Communities: Uncovering rapid grassland community changes with long-term observational and experimental data.
- Reported in *EurekAlert!*, *ScienceDaily*, *Monterey Herald*.
- Translated into Chinese.

95. 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

94. 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

93. Van Nuland ME, Qin C, Pellitier P, **Zhu K**, Peay KG (2024) Climate mismatches with ectomycorrhizal fungi contribute to migration lag in North American tree range shifts. *Proceedings of the National Academy of Sciences*, 121, e2308811121. https://doi.org/10.1073/pnas.2308811121

92. Mills KL, Bennitt E, **Zhu K**, Bartlam-Brooks HLA, Hubel TY, Wilson AM, Carter NH, Sanders NJ (2024) Dynamic primary resources, not just wild prey availability, underpin lion depredation of livestock in a savanna ecosystem. *Ecology and Evolution*, 14, e70208. https://doi.org/10.1002/ece3.70208

91. Li Y, Svenning J-C, Zhou W, **Zhu K**, Abrams JF, Lenton TM, Ripple WJ, Yu Z, Teng SN, Dunn RR, Xu C (2014) Green spaces provide substantial but unequal urban cooling globally. *Nature Communications*, 15, 7108. https://doi.org/10.1038/s41467-024-51355-0

90. Li Y, Fang L, Cao G, Mi W, Lei C, **Zhu K**, Bi Y (2024) Reservoir regulation-induced variations in water level impact cyanobacterial bloom by the changing physiochemical conditions. *Water Research*, 259, 121836. https://doi.org/10.1016/j.watres.2024.121836

89. Journé V, Bogdziewicz M, Courbaud B, Kunstler G, Qiu T, Acuña MA, Ascoli D, Bergeron Y, Berveiller D, Boivin T, Bonal R, Caignard T, Cailleret M, Calama R, Camarero JJ, Chang-Yang C, Chave J, Chianucci F, Curt T, Cutini A, Das A, Daskalakou E, Davi H,

Delpierre N, Delzon S, Dietze M, Calderon SD, Dormont L, Espelta JM, Farfan-Rios W, Fenner M, Franklin J, Gehring C, Gilbert G, Gratzer G, Greenberg CH, Guignabert A, Guo Q, Hacket-Pain A, Hampe A, Han Q, Hanley ME, Lambers JHR, Holík J, Hoshizaki K, Ibanez I, Johnstone JF, Knops JMH, Kobe RK, Kurokawa H, Lageard J, LaMontagne J, Ledwon M, Lefèvre F, Leininger T, Limousin J, Lutz J, Macias D, Mårell A, McIntire E, Moran EV, Motta R, Myers J, Nagel TA, Naoe S, Noguchi M, Norghauer J, Oguro M, Ourcival J, Parmenter R, Pearse I, Pérez-Ramos IM, Piechnik Ł, Podgórski T, Poulsen J, Redmond MD, Reid CD, Samonil P, Scher CL, Schlesinger WH, Seget B, Sharma S, Shibata M, Silman M, Steele M, Stephenson N, Straub J, Sutton S, Swenson JJ, Swift M, Thomas PA, Uriarte M, Vacchiano G, Whipple A, Whitham T, Wright SJ, **Zhu K**, Zimmerman J, Żywiec M, Clark JS (2024) The relationship between maturation size and maximum tree size from tropical to boreal climates. *Ecology Letters*, 27, e14500. https://doi.org/10.1111/ele.14500

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://doi.org/10.5703/1288284317679

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
    - Honorable Mention of 2023 Best Article Award, *Landscape Ecology*.

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, Hacket-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, Vacchiano 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, Hacket-Pain A, Hampe A, Han Q, Hoshizaki K, Ibanez I, Johnstone JF, Journé V, Kitzberger T, Knops JMH, Kunstler G, Kobe R, Lageard JGA, LaMontagne 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, Gratzer G, Greenberg CH, Guo Q, Hacket-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 CO2. *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_4 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, Gratzer G, Greenberg CH, Guo Q, Hacket-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**, Morisette 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

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    - Awarded New Phytologist Tansley Medal for Excellence in Plant Science. https://doi.org/10.1111/nph.17028
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23. Albright R, Hosfelt J, Kwiatkowski L, Maclaren JK, Mason BM, Nebuchina Y, Ninokawa A, Pongratz J, Ricke KL, Rivlin T, Schneider K, Sesboüé M, Shamberger K, Silverman J, Wolfe K, **Zhu K**, Caldeira K (2016) Reversal of ocean acidification enhances net coral reef calcification. *Nature*, 531, 362-365. https://doi.org/10.1038/nature17155
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    - Leading paper in the cover of September 2015 issue of *Ecology*.

21. Woodall CW, Russell MB, Walters BF, D'Amato AW, **Zhu K**, Saatchi SS (2015) Forest production dynamics along a wood density spectrum in eastern US forests. *Trees - Structure and Function*, 29, 299-310. https://doi.org/10.1007/s00468-014-1083-1

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19. **Zhu K**, Woodall CW, Ghosh S, Gelfand AE, Clark JS (2014) Dual impacts of climate change: forest migration and turnover through life history. *Global Change Biology*, 20, 251-264. https://doi.org/10.1111/gcb.12382
    - Featured by North Carolina Public Radio WUNC, *The Chronicle*, Duke University, and others.

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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15. Woodall CW, **Zhu K**, Westfall JA, Oswalt CM, D'Amato AW, Walters BF, Lintz HE (2013) Assessing the stability of tree ranges and influence of disturbance in eastern US forests. *Forest Ecology and Management*, 291, 172-180. https://doi.org/10.1016/j.foreco.2012.11.047

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.
    - Recommended by Faculty of 1000 ("Must Read").
    - 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.1541-0420.2011.01729.x

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_2 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

2025 Purdue University, Department of Forestry and Natural Resources, West Lafayette, IN.

2024 Oklahoma State University, Department of Natural Resource Ecology and Management, Stillwater, OK (online).
Sino-Ecologists Association Overseas (online).
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 American Geophysical Union, Annual Meeting, Washington, DC.
International Symposium on Modern Ecology, Xishuangbanna, Yunnan, China (online).
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

2025 The Earth Call, How has climate change affected grasslands?
Santa Cruz Sentinel, Study focuses on effect of climate change on California's grasslands.

2024 *Monterey Herald*, Climate change swiftly remaking the region's grasslands, study finds.
University of Michigan, Grasslands live in the climate change fast lane.
University of Michigan, Study shows climate change is moving tree populations away from the soil fungi that sustain them.
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_2 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

Promotion and tenure reviews

2024 University of California, Santa Barbara

2020 Stanford University

2019 US Department of Agriculture Forest Service

Grant proposal panel reviews

2025 Joint Fire Science Program, Graduate Research Innovation.

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 US 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

2023– 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
Advances in Water Resources
Agricultural and Forest Meteorology
American Naturalist
Annals of Applied Statistics
Biology Letters
BMC Plant Biology
Canadian Journal of Forest Research

Carbon Balance and Management
Climatic Change
Data-Enabled Discovery and Applications
Earth System Science Data
Ecography
Ecological Applications
Ecology
Ecology and Evolution
Ecology Letters
Ecosphere
Ecosystems
Environmental Conservation
Environmental Research Letters
European Journal of Forest Research
Forest Ecology and Management
Forests
Frontiers in Ecology and Evolution
Frontiers in Ecology and the Environment
Frontiers in Marine Science
Functional Ecology
Global Change Biology
Global Ecology and Biogeography
Global Ecology and Conservation
Journal of Arid Environments
Journal of Biogeography
Journal of Ecology
Journal of Plant Ecology
Methods in Ecology and Evolution
National Science Review
Nature
Nature Climate Change
Nature Communications
Nature Ecology and Evolution
Nature Geoscience
New Phytologist
Oecologia
PLOS ONE
Philosophical Transactions of the Royal Society B: Biological Sciences
Proceedings of the National Academy of Sciences
Remote Sensing
Remote Sensing of Environment
Science
Science of the Total Environment
Scientific Reports
Soil Biology and Biochemistry

Transactions in GIS

Book proposal reviews

2017 Oxford University Press

Synergistic activities

2024 Primary Convener, American Geophysical Union, Annual 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.

2013 Co-organizer, Ecological Society of America, Annual Meeting, Organized Oral Session.

University Service

2024–2025 Committee Member, University of Michigan, School for Environment and Sustainability, Doctoral Admissions Committee.
Committee Member, University of Michigan, School for Environment and Sustainability, Presidential Postdoctoral Fellows Search Committee.

2024 Committee Chair, University of Michigan, School for Environment and Sustainability, Faculty Third Year Review Select Committee.
Committee Chair, University of Michigan, School for Environment and Sustainability, Lecturer Interim Review Committee.
Committee Member, University of Michigan, School for Environment and Sustainability, Climate Finance Faculty Search Committee.
Committee Member, University of Michigan, School for Environment and Sustainability, Global Change Biology Research Scientist Search Committee.
Reviewer of Fellowship Applications, University of Michigan, Michigan Institute for Data and AI in Society.

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— Kara C. Dobson
(Co-advised with Peter B. Reich)
University of Michigan, Institute for Global Change Biology

2024— Shengxi Gui
(Co-advised with Benjamin P. Goldstein)
University of Michigan, School for Environment and Sustainability

2024— Hengxing Zou
(Co-advised with Brian C. Weeks)
University of Michigan, Institute for Global Change Biology

2023— Yiluan Song
(Co-advised with Yang Chen)
University of Michigan, Michigan Institute for Data and AI in Society
Eric and Wendy Schmidt AI in Science Fellow

2023— Wenqi Luo
(Co-advised with Donald R. Zak)
University of Michigan, Institute for Global Change Biology

2022—2024 Liting Zheng
(Co-advised with Peter B. Reich)
University of Michigan, Institute for Global Change Biology

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
Eugene Cota-Robles Fellowship

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— Emma Dawson-Glass
Advisors: Nathan J. Sanders & Marjorie G. Weber
University of Michigan, Department of Ecology and Evolutionary Biology

2024— Collin Richter

Advisor: Johannes Foufopoulos
University of Michigan, School for Environment and Sustainability

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– Charlotte Probst
Advisor: Brian C. Weeks
University of Michigan, School for Environment and Sustainability

2023–2024 Yingxiao Zhang
Advisor: Allison Steiner
University of Michigan, Department of Climate and Space Sciences and Engineering

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

2020–2024 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

2024— Neal Harbaugh
University of Michigan, School for Environment and Sustainability

2024— Xu Qiang
University of Michigan, School for Environment and Sustainability

2024— Richard O'Keefe
University of Michigan, School for Environment and Sustainability

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

2025— Jia Xi
University of Michigan, Statistics

2024— Kai Sheng
University of Michigan, Computer Science

2024— Carby Wu
University of Michigan, Computer Science

2023—2024 Oviyan Anbarasu
University of Michigan, Data Science

2023—2024 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 graduate students and scholars host

2024 Carolina Arguiano
National University of La Plata, Argentina
Fulbright Scholarship

2023—2024 Pengcheng Liu
East China Normal University, China

2023—2024 Yuan Li
Taiyuan University of Science and Technology, China

2023 Shijing Liang
Southern University of Science and Technology, China

High school students

2023—2024 Tanay Panja
Huron High School

Courses

Instructor

2025— Environmental Data Science
University of Michigan

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

2024 Principles of Ecology
University of Michigan

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

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