

X. Ben Wu

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Education:

Postdoctoral:	The Ohio State University	Wetland Ecology		1992-1995
Graduate:	University of Tennessee	Ecology	Ph.D.	1991
	University of Tennessee	Management Sci.	M.S.	1990
	University of Tennessee	Ecology	M.S.	1988
Undergraduate:	Lanzhou University (China)	Botany	B.S.	1982

Experience:

1995-present Texas A&M University

Presidential Professor for Teaching Excellence (2009-present), Arthur and Wilhelmina Doré Thaman University Professor for Undergraduate Teaching Excellence (2017-2020), John Kincaid University Professor for Undergraduate Teaching Excellence (2012-2015), Associate Dean of Faculties and Director of Center for Teaching Excellence (2009-2014)

Associate Dean for Faculty Affairs, College of Agriculture and Life Sciences (2019-2023)

Professor (2007-present), Associate Department Head for Graduate Programs (2007-2009), Associate Professor (2001-2006), and Assistant Professor (1995-2000), Department of Ecology and Conservation Biology

1992-1995 The Ohio State University

Adjunct Assistant Professor (1994-95), Postdoctoral Research Associate (1993-1995), and University Postdoctoral Fellow (1992-1993), School of Natural Resources

1987-1991 Tennessee Valley Authority

EIS Consultant, Land Between the Lakes (1990-1991); Ecologist, Forest Resources (1989-1990); and Intern, Land Between the Lakes (1987-1988)

1985-1991 The University of Tennessee

Teaching/Research Assistant, Graduate Program in Ecology (1988-1989 and 1986-1987); and Hilton Smith Graduate Fellow, Graduate School (1987-1988)

Teaching Activities:

Undergraduate Courses

- ECCB 205 - Fundamentals of Ecology (3 SCH, co-teach with M. Mateos)

This service course with large classes (up to 500 students in 2 sections) uses blended and active learning to help students develop deeper understanding of ecology and the scientific process, and to enhance critical thinking and integrative learning skills. SimUText Ecology (interactive learning system based on simulations), our own online modules, and (5-week long) authentic ecological inquiry (individual) projects with collaborative learning and peer review approaches are used for online (outside class) learning activities. Peer instruction/think-pair-share activities based on key concepts and common misconceptions of ecology, case studies, and mini-lectures are used for in-class learning activities. Frequent formative and summative assessments are used for and of learning. Taught over 12,000 students in this course since 1995.

- RENR 215 - Fundamentals of Ecology Laboratory (1 SCH)
Served as faculty coordinator in 1995-2005 and taught one section in 1995-1998.

Graduate Courses

- ECCB 660 - Landscape Analysis and Modeling (3 SCH, both in-person and online sections)
Introduction to concepts and quantitative methods of spatial analysis and their applications. This blended course uses weekly lecture videos and online quizzes to develop conceptual understanding, extensive hands-on exercises on methods and software with real-world problems, online and in-class discussions of current literature, research projects based on students' own dissertation/thesis research, and project reports in journal manuscript format with peer review and revision. Taught since 1997 and had over 340 students in the course.

Graduate Student Program

- Served as **chair/co-chair** for 38 graduate students (20 PhD and 18 Masters).
Current students – PhD (4): Weiqian Gao (ECCB), Xavier Jaime (ECCB), Jose Mata (ECCB), Justin Wied (ECCB); MS (1): Emily Monroe (ESSM)
- Served as a **committee member** for 119 graduate students (76 PhD and 43 Masters).
Current students - PhD (9): Pio Bradicich (ENTO), Steven Evans (RWF), Mengqu Han (GEOG), Billy Hales (GEOG), Christopher Hinojosa (GEOG), Ben Hoose (RWF), Mei-Kuei Lu (ECCB), Mickey Parker (WFSC), Hailey Schmidt (ECCB); MS (4): Alyssa Freeman (RWF), Zach Johnson (WFSC), Kaylee Lovejoy (RWF), Gracie Lugo (RWF).

Funding (since 2019, total 49)

Acquired over \$25,050,000 research funds (over 94% external) as PI or co-PI; directly responsible for directing over \$6,397,000 of these funds.

- Synthesis, research and outreach of climate change mitigation practices: A collaborative research and outreach effort with Southern Plains Climate Hub and NRCS, USDA-ARS, \$403,509, 2024-2027, PI.
- Rapid assessment protocol for disaster response (RapDR) – A hyper-resolution satellite imagery and deep learning enabled decision support tool, USDA-NIFA, \$300,000, 2024-2025, co-PI.
- Promoting climate-smart agricultural practices to reduce risk and impacts of drought, wildfire and woody encroachment on livestock production, USDA-NIFA, \$1,500,000, 2023-2028, PI.
- Enhancing livestock production from rangelands in the Great Plains, USDA-NIFA, \$9,994,340, 2019-2025, co-PI.

Publications (since 2019, total 110)

- Concilio AL, Macik ML, Wu XB. 2024. An Interrupted Case Study on Urban Prairie Restoration. *CourseSource* 11. <https://doi.org/10.24918/cs.2024.10>
- Kim J, Popescu SC, Lopez RR, Wu XB, Silvy NJ. 2024. Assessing hurricane impact on vegetation and endangered deer habitat using airborne lidar and multispectral images. *Global Ecology and Conservation* 53: e03007. <https://doi.org/10.1016/j.gecco.2024.e03007>.
- Kim J, Popescu SC, Lopez RR, Wu XB, Silvy NJ. 2024. Modeling the impact of sea level rise on endangered deer habitat. *Journal of Environmental Management* 360: 121010. <https://doi.org/10.1016/j.jenvman.2024.121010>.
- Cheng H, Jin B, Luo K, Zhang X, Pei J, Zhang Y, Han L, Tang J, Li F, Sun G, Wu XB. 2023. Seasonal resource selection of free-ranging Zhongwei goats in the semi-arid grassland. *Animal* 17:10, 100972, <https://doi.org/10.1016/j.animal.2023.100972>.

- Jaime XA, Angerer JP, Yang C, Walker J, Mata J, Tolleson D, Wu XB. 2023. Exploring Effective Detection and Spatial Pattern of Prickly Pear Cactus (*Opuntia* Genus) from Airborne Imagery before and after Prescribed Fires in the Edwards Plateau. *Remote Sensing* 2023, 15, 4033. <https://doi.org/10.3390/rs15164033>
- Jin B, Cheng H, Sun G, Li F, Wu XB. 2022. Multi-parallel structure and a generalized conceptual model of livestock track network. *Catena* 216, <https://doi.org/10.1016/j.catena.2022.106380>.
- Li Z, Angerer JP, Jaime X, Yang C, Wu XB. 2022. Estimating rangeland fine fuel biomass in western Texas using high-resolution aerial imagery and machine learning. *Remote Sensing* 14:4360, <https://doi.org/10.3390/rs14174360>.
- Li Z, Angerer JP, Wu XB. 2022. The impacts of wildfires of different burn severities on vegetation structure across the western United States rangelands. *Science of the Total Environment* 845: 157214, <https://doi.org/10.1016/j.scitotenv.2022.157214>.
- Li Z, Angerer JP, Wu XB. 2022. Prefire vegetation structure of high severity wildfires in non-herbaceous dominated rangelands in the western United States. *Earth's Future* 10(10), e2021EF002624. <https://doi.org/10.1029/2021EF002624>.
- Macik M, Wu XB, Sandoval C. 2022. Impact of authentic inquiry on undergraduate students' self-reported understanding of scientific practices. *Education Research International* 2022, 8137386. <https://doi.org/10.1155/2022/8137386>.
- Wilcox BP, Fuhlendorf SD, Walker JW, Twidwell D, Wu XB, Goodman LE, Treadwell M, Birt A. 2022. Saving imperiled grassland biomes by recoupling fire and grazing: A case study from the Great Plains. *Frontiers in Ecology and the Environment* 20(3): 179–186, <https://doi.org/10.1002/fee.2448>.
- Li W, Hooper D, Wu L, Bakker J, Gianuca A, Wu XB, Taube F, Wang C, Bai Y. 2021. Grazing regime alters plant community structure via patch-scale diversity in semiarid grasslands, *Ecosphere*, 12.6: e03547. <https://doi.org/10.1002/ecs2.3547>.
- Li Z, Angerer JP, Wu XB. 2021. Temporal patterns of large wildfires and their burn severity in rangelands of western United States. *Geophysical Research Letters*, 48, e2020GL091636. <https://doi.org/10.1029/2020GL091636>.
- Wu XB, Sandoval C, Knight SL, Jaime XA, Macik M, Schielack JF. 2021. Web-based authentic inquiry experiences in large introductory classes consistently associated with significant learning gains for all students. *International Journal of STEM Education*, 8, 31. doi10.1186/s40594-021-00290-3.
- Cheleuitte-Nieves C, Perotto-Baldivieso HL, Wu XB, Cooper SM. 2020. Environmental and landscape influences on the spatial and temporal distribution of a cattle herd in a South Texas rangeland. *Ecological Processes* 9:39. <https://doi.org/10.1186/s13717-020-00245-6>.
- Kim J, Popescu SC, Lopez RR, Wu XB, Silvy NJ. 2020. Vegetation mapping of No Name Key, Florida using lidar and multispectral remote sensing. *International Journal of Remote Sensing* 41.24: 9469-9506. <https://doi.org/10.1080/01431161.2020.1800125>.
- Jin B, Sun G, Zhang Y, Zou M, Ni X, Luo K, Zhang X, Cheng H, Li F, Wu XB. 2019. Goat track networks facilitate efficiency in movement and foraging. *Landscape Ecology* 34:2033–2044. <https://doi.org/10.1007/s10980-019-00877-w>.
- Miller KS, Brennan LA, Perotto-Baldivieso HL, Hernandez F, Grahmann ED, Okay AZ, Wu XB, Peterson M, Hannusch H, Mata J, Robles J, Shedd T. 2019. Correlates of habitat fragmentation and northern bobwhite abundance in the Gulf Prairie Landscape Conservation Cooperative. *Journal of Fish and Wildlife Management*. 10:3-18. <https://doi.org/10.3996/112017-JFWM-094>.
- Zhou Y, Boutton TW, Wu XB. 2019. A Three-Dimensional Assessment of Soil $\delta^{13}\text{C}$ in a Subtropical Savanna: Implications for Vegetation Change and Soil Carbon Dynamics. *Soil Systems* 3(4), 73. <https://doi.org/10.3390/soilsystems3040073>.

Abstracts for conference presentations (181)

Conference	# abstracts
Ecological Society of America	52
Society for Range Management	37
American Geophysical Union	10
Society of Wetland Scientists	7
International Association for Landscape Ecology	7
American Educational Research Association	5
Other conferences	63

Invited Presentations

Gave over 90 invited talks on landscape ecology, restoration ecology, ecology education, and faculty professional development in teaching, at professional conferences and academic institutions.

Professional Activities:

- Member of: NSF Committee of Visitors (COV) for 4 grant programs under NSF's Division of Undergraduate Education (2016); National Academies Committee on Barriers and Opportunities in Completing 2- and 4-Year STEM Degrees (2013-2016); External Review Committee for: Oregon State University Natural Resources Undergraduate Program (2016), University of Puerto Rico Environ. Science Graduate Program (2016) and Lanzhou University Undergraduate Programs (2017).
- Member of: Board of Directors, BioQUEST Curriculum Consortium (2020-present); Steering Committee of NSF-funded Faculty Developer Network for Undergraduate Biology (FDN-UBE) (2014-2020); Advisory Board, NSF-funded Deep Teaching Residency (DTR) Program (2021-present); Advisory Board, USDA NIFA-funded Sustainably Colocating Agricultural and Photovoltaic Electricity Systems (SCAPES) project (2021-present).
- Chair, Asian Ecology Section of Ecological Society of America (ESA) (1997-1998); Co-Chair, International Affairs Committee (2006-2008) Society for Range Management (SRM); Member, Steering Committee of *Rangeland Ecology and Management* (2006-2009); Journal editorial board member: *Acta Prataculturae Sinica* (2015-present), *Ecological Processes* (2011-present; Associate Editor), *Chinese Journal of Applied Ecology* (1996-2017), *Journal of Integrative Plant Biology* (2005-2007), *Ecological Engineering* (1997-2007).
- Co-facilitator, Inclusive Teaching Faculty Fellows (ITFF) Program, Texas A&M University (2020-2021); Co-chair, Quality Enhancement Plan (QEP) committee for the decennial reaffirmation of accreditation of Texas A&M University (2011-2012); Co-chair, Faculty Teaching and Learning Portal committee (2009-2014); Activity Leader, Roadmap workshops for early-career academics, TAMU ADVANCE program (2011-2014); Chair, Search Committee for Associate Dean of Faculties (2011); Chair, Search Committee for Department Head of Agricultural Leadership, Education & Communications (2018-19), Member of over 20 university-level committees.
- Chair, Awards Committee (2023-present); Chair, Tenure and Promotion Committee (2015-2019); Project Director (2007-2012), Sloan Minority PhD Program in Ecosystem Science and Management; Chair, Graduate Programs Committee of ESSM (2007-2009); Co-chair, Exploratory Committee for the merger of Departments of Rangeland Ecology and Management and Forest Science (2006); Chair, Committee for Development of BS degree program in Ecological Restoration (2004-2006); Member of 14 departmental committees.
- Co-facilitator, over 50 workshops (1-3 hour) on topics such as active and inquiry-based learning, engaging students with technology, blended learning, teaching large classes, peer review of teaching, decoding the discipline, habits and skills of successful new faculty, strategies and tactics for

recruiting to improve diversity and excellence, and strategies and tactics for retention through inclusive promotion evaluation. Co-designer and co-facilitator, five intensive (2-5 days) training workshops on teaching and learning and academic leadership for faculty and academic administrators in the US, Middle East, and Asia.

Awards and Honors:

- Dean's Outstanding Achievement Award in Faculty Mentoring, College of Agriculture and Life Sciences, Texas A&M University, 2023.
- Dean's Outstanding Achievement Award in Administration, College of Agriculture and Life Sciences, Texas A&M University, 2022.
- Vice Chancellor's Award in Excellence for Team Research, Texas A&M AgriLife, 2022.
- US Department of Agriculture National Award for Excellence in College and University Teaching in Food and Agricultural Sciences, 2018.
- Arthur and Wilhelmina Doré Thaman University Professor for Undergraduate Teaching Excellence, Texas A&M University, 2017.
- Dean's Outstanding Achievement Award in Teaching, College of Agriculture and Life Sciences, Texas A&M University, 2017.
- Distinguished Achievement Awards for Teaching (University-Level), Association of Former Students of Texas A&M University, 2016.
- SEC Faculty Achievement Award, Southeastern Conference Universities, 2015.
- John Kincaid University Professor for Undergraduate Teaching Excellence, Texas A&M University, 2012.
- Presidential Professor for Teaching Excellence Award, Texas A&M University, 2009.
- Award for Innovative Excellence in Teaching, Learning, and Technology, the International Conference on College Teaching and Learning, 2009.
- Distinguished Achievement Awards for Teaching (College-Level), Association of Former Students of Texas A&M University, 2008.
- Dick Kleberg, Jr. Endowed Lectureship at the King Ranch Institute for Ranch Management, Texas A&M University-Kingsville, 2007
- Michael Breheny Prize for the Best Paper in *Environment and Planning B*, 2006.
- Vice Chancellor's Award in Excellence for Graduate Teaching, Texas A&M AgriLife, Texas A&M University System, 2005.
- Graduate Teacher of the Year Awards, Department of Ecosystem Science and Management, Texas A&M University, 2001, 2002 and 2005.
- Best Student Poster, Society of American Foresters (SAF) National Convention, Richmond, VA, 1992.
- University Postdoctoral Fellowship, The Ohio State University, 1992.
- Science Alliance Fellowship Awards, University of Tennessee Science Alliance Center of Excellence, 1986, 1987, 1988, 1989, 1990 and 1991.
- National Alumni Association Graduate Fellowships, University of Tennessee National Alumni Association, 1988-1989 and 1989-1990.
- Hilton A. Smith Graduate Fellowship, University of Tennessee, 1987-1988.
- Carlos Campbell Memorial Research Fellowship, Great Smoky Mountains Conservation Association, 1986-1987.