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-), John Kincaid University Professor for Undergraduate Teaching Excellence (2012-2015), Associate Dean of Faculties and Director of Center for Teaching Excellence (2009-2014),

Professor (2007-), Associate Department Head for Graduate Programs (2007-2009), Associate Professor (2001-2006), and Assistant Professor (1995-2000), Department of Ecosystem Science and Management.

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).

1982-1984 Lanzhou University, China

Assistant Lecturer, Department of Biology.

Selected Awards and Honors:

- Southeastern Conference Faculty Achievement Award, 2015.
- John Kincaid University Professor for Undergraduate Teaching Excellence, 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 Agriculture, 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.
- Hundred-Talent Program Scholar, Chinese Academy of Sciences, 2004-2007.
- V.F. and Gertrude Neuhaus Teaching Scholar, College of Agriculture and Life Sciences, Texas A&M University, 2000.
- Wakonse Fellow of College Teaching, College of Agriculture and Life Sciences, Texas A&M University, 1997.
- Best Student Poster, Society of American Foresters (SAF) National Convention, Richmond, VA, 1992.
- University Postdoctoral Fellowship, The Ohio State University, 1991-1992.
- 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, 1988-89 and 1989-90.
- Hilton A. Smith Graduate Fellowship, University of Tennessee, 1987-88.
- Carlos Campbell Memorial Research Fellowship, Great Smoky Mountains Conservation Association, 1986-87.

Professional Activities:

- Member, National Research Council Committee on *Barriers and Opportunities in Completing 2- and 4-Year STEM Degrees* (2013-present); Member, Steering Committee of NSF-funded *Faculty Development Network for Undergraduate Biology (FDN-UB)* (2014-present); Member, International Advisory Committee of the Computer Network Information Center, Chinese Academy of Sciences (2009-present);
- Chair, Asian Ecology Section of the Ecological Society of America (ESA) (1997-1998); Co-Chair, International Affairs Committee (2006-2008) Society for Range Management (SRM); Member, Steering Committee of the journal Rangeland Ecology and Management (2006-2009).
- Journal editorial board member: *Acta Prataculturae Sinica* (2015-present), *Chinese Journal of Applied Ecology* (1996-present), *Ecological Processes* (2011-present), *Journal of Integrative Plant Biology* (2005-2007), *Ecological Engineering* (1997-2007).
- Member of grant review panels: NSF (3 panels); USDA (3 panels); USEPA (5 panels).
- Symposium/special session organizer: "Landscape Analysis for Rangeland Assessment and Monitoring" (2002, with Neil West), "Wetland and Riparian Restoration in Urbanizing Landscapes" (2005, with W.J. Mitsch), and "Grasslands of Northern China: Ecology and Contemporary Issues" (2006, with X. Han and J. Wu) at SRM annual meetings. "E-learning in Ecology Education" (2007, with K.M. Klemow and J. Taylor), ESA meeting.
- Co-chair, Quality Enhancement Plan (QEP) committee for the decennial reaffirmation of accreditation of the University (2011-2012); Co-chair, Faculty Teaching and Learning Portal committee (2009-2014); Activity Leader, *Roadmap workshops for early-career academics*, Texas A&M ADVANCE program (2011-2014); Project Director (2007-2012), Sloan Minority Ph.D. Program in Ecosystem Science and Management; Chair, Graduate Programs Committee of Ecosystem Science and Management (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), Texas A&M University.

Teaching Activities:

Undergraduate Courses

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

  Introduction to principles of ecology based on the ecosystems framework. This is a service course with large classes (up to 250 students in each of the 2 sections) and diverse students from more than 40 majors. A blended-learning approach is used to engage students outside of class with online adaptive test-to-learn exercises and weekly quizzes with alternative questions and multiple takes to help students develop better understanding and mastery. In class, we engage students using Socratic methods and active learning activities such as clicker questions, think-pair-share/peer instruction, and case studies to facilitate both deeper understanding and skill development. We have also developed and implemented two 5-week long web-based ecological inquiry projects (using remote BearCam photos and a virtual learning environment) which integrated authentic scientific inquiries with collaborative learning and calibrated peer review approaches.

  Taught in Fall semesters of 1995-2002, 2004-2014. Over 7,900 students have taken this course.

- RENR 215 - Fundamentals of Ecology Laboratory (1 SCH)

  Introduction to the general principles and inquiry process, sampling procedures and equipment, and data analysis and interpretation for field investigations of the biotic and abiotic components of ecosystems and their interactions. This field-oriented lab course is designed to emphasize hands-on experiences and ecological integration using active and collaborative learning and intensive writing approaches.

  Served as faculty coordinator for both Spring and Fall of 1995-2001 and Fall of 2002, 2004 and 2005. Taught one section for 7 semesters in 1994-1998.

Graduate Courses

- ESSM 660 - Landscape Analysis and Modeling (3 SCH)

  Introduction to concepts and methods of spatial analysis (landscape pattern analysis and modeling, spatial statistics) and their applications, with an emphasis on natural resource studies. The teaching approaches include lectures coupled with web-based group and class discussions of current literature, use of our own published works to bring additional insights to the scientific inquiry process, extensive hands-on lab exercises to solve real-world problems, term projects based on students' own dissertation/thesis research, and preparation of project reports as journal manuscripts using the peer review process.

  Taught in Spring of 1997-2003, 2005-2015. Over 250 PhD and MS students from 14 departments in 5 colleges have taken this course.

- RLEM 689 - Landscape Ecology and Conservation (3 SCH)

  Introduction to concepts of landscape ecology and their applications in natural resource conservation.

  Taught in Summer of 2003-2005 for participants of the Information Technology in Science (ITS) Center for Teaching and Learning Cohort II and III "Landscape Ecology and Conservation" team.

- RLEM 681 – Seminar: Quantitative Methods in Landscape Ecology (1 SCH)
- RLEM 681 – Seminar: Spatial Simulation in Landscape Studies (1 SCH)

- RLEM 681 – Seminar: Ecological Restoration (1 SCH)
- NR 760 - Ecosystem Modeling (3 SCH)

Graduate Student Program

- Served as chair/co-chair for 15 PhD and 16 MS students.
- Served as a committee member for 57 PhD and 33 MS students from 7 departments of 5 colleges.

Faculty Development Activities:

- Conducted with C. Sandoval and J. August a 3-day workshop "*Advanced Training Program for Academic Administrators on Teaching and Learning*", November 24-26, 2014, Nanjing, China.
- Conducted with V. Lee a 5-day workshop "*Academic Leadership in the Learning-centered University*", August 4-8, 2014, Durham, NC.
- Conducted with B. Harmon a 2-day workshop "*Inquiry-based Approaches in Undergraduate Science Courses: Learning Science through Science Process*", May 13-14, 2014, at *The Institute for Pedagogy in the Liberal Arts*, Oxford, GA.
- Conducted with V. Lee a 2.5-day workshop "*Teaching & Learning Workshop at Jazan University*", February 10-12, 2013, Jazan, Saudi Arabia.
- Conducted with V. Lee a 5-day workshop "*Building a Culture of Teaching Excellence at Jazan University*", July 9-13, 2012, Ann Arbor, MI.
- Conducted numerous (2-3 hour) workshops in the US and China 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, and habits and skills of new faculty who succeed.
- Served as a member of the Planning Committee (2009-2014) to design and facilitate the annual *Wakonse South Conference on College Teaching*.
- Serving as a Steering Committee member (2014-present) for the NSF-funded *Faculty Development Network for Undergraduate Biology (FDN-UB)*.

Selected grants (last 5 years):

(Over 4.9 million since joining Texas A&M University)

- Enhancing blended and active learning in a large ecology course, Texas A&M University, $75,000, 2015-2016, PI.
- Virtual Ecological Inquiry (VEI) - A virtual environment for inquiry-based learning and education research, NSF-CCLI/TUSE, $199,950, 2010-2014, PI.
- Sustaining rangelands in the Southern Great Plains in the 21st century: Adapting to and mitigating for climate change (planning grant), USDA-AFRI, $50,000, 2010-2011, co-PI.
- A graduate program in forest resources: Developing integrated expertise in forest resource, conservation, and restoration, USDA-AFRI, $340,000, 2009-2014, co-PI.
- Strengthening educational capacities in geospatial science and technology for agricultural and natural resources management, USDA CSREES-HSI, $290,000, 2008-2011, co-PI.
- Development of data-based validation framework for state-and-transition models, USDA CSREES, $464,000, 2007-2011, co-PI.

Selected Publications (last 5 years)

*(Total 70 journal articles and 8 book chapters; * student or postdoc advised or co-advised)*

Rho P*, Wu XB, Smeins FE, Silvy NJ, Peterson MJ. 2015 Regional land cover patterns, changes and potential relationships with scaled quail (*Callipepla squamata*) abundance. *Journal of Ecology and Environment* 38(2):185-193.

Li W*, Zhan S, Lan Z, Wu XB, Bai Y. 2015. Scale-dependent patterns and mechanisms of grazing-induced biodiversity loss: Evidence from a field manipulation experiment in semiarid steppe. *Landscape Ecology* doi:10.1007/s10980-014-0146-4.

Webb AM, Knight SL, Wu XB, Schielack JF. 2014. Teaching science with web-based inquiry projects: An exploratory investigation. *International Journal of Virtual and Personal Learning Environments* 5(2):57-68.

DeMaso SJ, Hernandez F, Brennan LA, Silvy NJ, Grant WE, Wu XB, Bryant FC. 2014. Short- and Long-Term Influence of Brush Canopy Cover on Northern Bobwhite Demography in Southern Texas. *Rangeland Ecology and Management* 67:99–106.

Ansley RJ, Mirik M, Heaton CB, Wu XB. 2013. Woody cover and grass production in a mesquite savanna: geospatial relationships and precipitation. *Rangeland Ecology and Management* 66:621–633.

Bagchi S*, Briske DD, Bestelmeyer BT, Wu XB. 2013. Assessing resilience and state-transition models with historical records of cheatgrass *Bromus tectorum* invasion in North American sagebrush-steppe. *Journal of Applied Ecology* 50(5):1131-1141..

Gilad O*, Wu XB, Armstrong F. 2013. Assessing the feasibility for reintroducing desert bighorn sheep to Guadalupe Mountains National Park: Habitat, migration corridors and challenges. *Applied Geography* 41:96-104.

Bai E*, Boutton TW, Liu F*, Wu XB, Archer SR. 2013. ^{15}N isoscapes in a subtropical savanna parkland: spatial-temporal perspectives. *Ecosphere* 4(1):4. http://dx.doi.org/10.1890/ES12-00187.1

Liu F*, Archer SR, Gelwick F, Bai E*, Boutton TW, Wu XB. 2013. Woody plant encroachment into grasslands: Spatial patterns of functional group distribution and community development. *PLoS ONE* 8(12): e84364.

Bagchi S*, Briske DD, Wu XB, Mcclaran MP, Bestelmeyer BT, Fernández-Giménez ME. 2012. Empirical assessment of state-and-transition models with a long-term vegetation record from the Sonoran Desert. *Ecological Applications* 22(2):400–411.

Bai E*, Boutton TW, Liu F*, Wu XB, Hallmark CT, Archer SR. 2012. Spatial variation of soil δ13C and its relation to carbon input and soil texture in a subtropical lowland woodland. *Soil Biology & Biochemistry* 44:102-112.

Bai E*, Boutton TW, Liu F*, Wu XB, Archer SR. 2012. Spatial patterns of soil δ13C reveal grassland-to-woodland successional processes. *Organic Geochemistry* 42:1512–1518.

Fowler DA, Matthews PR, Schielack JF, Webb RC, Wu XB. 2012. The power of inquiry as a way of learning in undergraduate education at a large research university, In: Lee VS. (Ed.) *The Power of Inquiry as a Way of Learning in Undergraduate Education*. Jossey-Bass, San Francisco, CA.

Simmons ME*, Wu XB, Whisenant SG. 2012. Responses of pioneer and later-successional plant assemblages to created microtopographic variation and soil treatments in riparian forest restoration. *Restoration Ecology* 20(3):291–425.

Wu XB, Griffing L, Herbert B, Acheson G, Knight SL. 2012. Bridging current science and classrooms: The learning community perspective. In: Schielack JF, Knight SL. (Eds) *An*

Information Technology-based Learning Ecology Model to Promote Science Education Leadership. Teachers College Press, New York, NY.

Bestelmeyer BT, Wu XB, Brown JR, Fuhlendorf SD, Fults GA. 2011. A landscape approach to rangeland conservation practices. pp 337-370, in *Conservation Benefits of Rangeland Practices: Assessment, Recommendations, and Knowledge Gaps*. USDA Natural Resources Conservation Service, Washington, DC.

DeMaso SJ, Hernández F, Brennan LA, Silvy NJ, Grant WE, Wu XB. 2011. A population model to simulate northern bobwhite population dynamics in southern Texas. *Journal of Wildlife Management* 75(2):319–332.

Knapp CN, Fernández-Giménez ME, Briske DD, Bestelmeyer BT, Wu XB. 2011. An assessment of state-and-transition models: Perceptions following two decades of development and implementation. *Rangeland Ecology & Management* 64(6):598-606.

Liu F*, Wu XB, Bai E*, Boutton TW, Archer SR. 2011. Quantifying soil organic carbon in complex landscapes: An example of grassland undergoing encroachment of woody plants. *Global Change Biology* 17:1119–1129.

Liu F*, Wu XB, Bai E*, Boutton TW, Archer SR. 2011. Impact of woody proliferation on soil carbon in subtropical savanna: Spatial distribution, uncertainty and sampling strategy. In: Han X, Wu Y (Eds) *Ecological Vision: Challenge, Response and Strategy*. Higher Education Press, Beijing.

Perotto-Baldivieso HL*, Wu XB, Peterson MJ, Smeins FE, Silvy NJ, Schwertner TW. 2011. Flooding-induced landscape changes along dendritic stream networks and implications for wildlife habitat. *Landscape and Urban Planning* 99:115–122.

Simmons ME*, Wu XB, Whisenant SG. 2011. Plant and soil responses to created microtopography and soil treatments in bottom land hardwood forest restoration. *Restoration Ecology* 19(1):136-146.