

Curriculum Vitae

Ai Wen

Department of Biology, University of Northern Iowa
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EDUCATION:

- Ph.D.:** Ecology and Evolution Graduate Program, Rutgers Univ. 2003-2010
Graduate Certificate: Graduate Certificate in GIS. Center for Remote Sensing & Spatial Analysis, Rutgers Univ. 2007-2009
B.S.: Ecology and Environmental Biology, Peking Univ., P. R. China 1998-2002

TEACHING:

- Assistant Professor, University of Northern Iowa 2019-
 Introductory Biology: Organismal Diversity (biology for major students)
 Entomology (lecture and lab)
 Life: the Natural World (biology for non-major students)
- Adjunct Professor, University of Northern Iowa 2013-2019
 Life: the Natural World (biology for non-major students)
 Capstone: Environment, Technology and Society
 Laboratory of General Biology: Organismal Diversity
 Introductory Biology: Organismal Diversity (biology for major students)
 Laboratory of Life: Continuity and Change (biology for non-major students)
- Lecturer, University of Michigan Fall 2011
 Food, Energy and the Environment
- Teaching Assistant, Rutgers University 2004-2010
 General Biology 101, 102
 Head Teaching Assistant for Principles of Biology (for non-biological majors)

RESEARCH EXPERIENCE:

- PI** Evaluating CRP vegetation response subsequent to haying and grazing by means of mid-contract management and emergency use in drought-prone regions 2022-
 Advisor for student research project "Genetic Diversity of Brown-belted Bumblebees in Restored Prairies in NE Iowa; advisee: Emma Simpson, Clarissa Bruns 2019-
PI Quantitative assessment of the association between CRP cover quality and mid-contract management approaches in major CRP regions 2018-

- Co-PI** Assessment of Conservation Reserve Program Grasslands for Compliance, Durability and Wildlife Habitat. (PI: Dr. Laura Jackson; Mark Vandever) 2016-2017
- Collaborated Research with the UNI Tallgrass Prairie Center 2017-2019
- Seed mix experiments and analysis of native seed supply for the pollinator habitat initiative
- Collaborated Research with the Practical Farmers of Iowa and local farmers 2014-
- Pollinator community ecology, pollinator-plant interaction and ecosystem services in vegetable farms
- Postdoctorate Research Fellow, University of Michigan 2010-2013
- Application of ecological methods in human oral and reproductive microbiome study
- Ph.D. thesis research, Rutgers University 2005-2010
- Habitat value of active and abandoned cranberry farms: avian and anuran distribution and the post abandonment succession. New Jersey.
- Survey team leader, Wildlife Conservation Society July 2005
- Wildlife trade along the China-Mongolia border. Inner Mongolia Province, China.
- Research Assistant, Peking University and Washington Zoo May-Aug 2004
- Population and distribution of Asiatic Black Bear (*Ursus thibetanus*). Tang Jiahe Natural Preserve, Sichuan Province, China.
- Research Assistant, Institute of Biophysics, CAS, Beijing, China Sep 2001-Jun 2002
- Visual Behavior of the Fruit Fly (*Drosophila melanogaster*).
- Research Assistant, Peking University, Guangxi, China Jun-Jul 2001, Jun-Aug 2002
- Conservation of White-headed Langur (*Trachypithecus leucocephalus*). Peking University Chongzuo Natural Preserve, Guangxi Province, China.

FUNDING AND GRANTS:

- 2024 **co-PI** Influence of emergency haying and grazing on Conservation Reserve Program vegetation, grassland birds and pollinators across a precipitation gradient USGS **\$190,284**
- 2023 CHAS Faculty Support Fund (spring and fall) **\$500 each**
- 2021 **co-PI** Evaluating CRP vegetation response subsequent to haying and grazing by means of mid-contract management and emergency use in drought-prone regions USDA Farm Service Agency (FSA) **\$188,592**
- 2019 UNI Faculty Summer Fellowship; **\$3,600**
- 2019 Pre-Tenure Faculty Grant, University of Northern Iowa; **\$1,475**
- 2019 **co-PI** Evaluation of the Conservation Reserve Program Pollinator Habitat Conservation Practice (CP-42) on Central Iowa Farms; Iowa Academy of Science; **\$5,000** PI: Mark Myers
- 2019 **PI** Additional funding from 2018 Quantitative assessment of the association between CRP cover quality and mid-contrast management approaches in major CRP regions; **\$10,000** Co-PI: Dr. Kenneth Elgersma
- 2018 **PI** Quantitative assessment of the association between CRP cover quality and mid-contract management approaches in major CRP regions; **\$27,011** Co-PI: Dr. Kenneth Elgersma, Dr. Laura Jackson
- 2016 **co-PI** USGS CRP field quality survey in Iowa and Missouri **\$47,000** PI: Mark Vandever, Laura Jackson
- 2013 Veridian Credit Union Community Engagement Fellowship Award **\$3,000** Co-PI: Kenneth Elgersma, Laura Jackson

2013 University of Northern Iowa Capacity Building Grant **\$1,500**. Co-PI: Kenneth Elgersma

2008 New Jersey Water Resource Research Institute **\$5000**

2006 New Jersey Water Resource Research Institute **\$5000**

2005 Pre-Dissertation Research Award, Graduate School-New Brunswick, Rutgers University **\$1600**

2003 Excellence Fellowship, Graduate School, New Brunswick, Rutgers University **\$20,000**

PUBLICATIONS:

- Elgersma, K., Magee, D. & **Wen, A.** (2024) Conservation Reserve Program Vegetation Affects Occupancy of an Invasive Grass and Invasive Forb. *Ecological Restoration*, 42(1): 54-63.
- Elgersma, K., Vandever, V. & **Wen, A.** (2023) Mid-contract Management Alters Conservation Reserve Program Vegetation in the Central and Western United States. *Ecological Restoration*, 41(4): 169-179.
<https://muse.jhu.edu/pub/19/article/911491>
- Vandever, M., Elgersma, K., Cater, S., **Wen, A.**, Welty, J., Arkle, R., Assal, T., Pilliod, D., Mushet, D. & Iovanna, R. (2022) Persistence and quality of vegetation cover in expired Conservation Reserve Program fields. *Ecosphere*, 14(1): e4359. <https://esajournals.onlinelibrary.wiley.com/doi/full/10.1002/ecs2.4359>
- Wen, A.**, Elgersma, E., Sherrard, M., Jackson, L., Meissen, J. & Myers, M. (2022) Wild bee visitors and their association with sown and unsown floral resources in reconstructed pollinator habitats within an agriculture landscape. *Insect Conservation and Diversity*, 15(1): 102-113.
<https://onlinelibrary.wiley.com/doi/10.1111/icad.12539>
- Vandever, M., Cater, S., Assal, T., Elgersma, K., **Wen, A.**, Welty, J., Arkle, R. & Iovanna, R. (2021) Evaluating establishment of conservation practices in the Conservation Reserve Programs across the western United States. *Environmental Research Letters*, 16 074011 (<https://iopscience.iop.org/article/10.1088/1748-9326/ac06f8>)
- Vandever, M.W., Carter, S.K., Assal, T.J., Elgersma, K., **Wen, A.**, Welty, J., Arkle, R., and Iovanna, R., (2021) Presence of erosional features and cover of grasses, forbs, and bare ground on fields enrolled in grassland, wetland, and wildlife practices of the Conservation Reserve Program in the central and western United States from 2016 to 2018: U.S. Geological Survey data release, <https://doi.org/10.5066/P9XCC65W>
- Wen, A.**, Weyant, R.J., McNeil, D.W., Crout, R.J., Neiswanger, K., Marazita, M.L., Foxman, B. (2017) Bayesian Analysis of the Association between Family-Level Factors and Siblings' Dental Caries. *Journal of Dental Research Clinical & Translational Research*, 2(3): 278-286.
- Foxman, B, Luo, T, Srinivasan, U, Ramadugu, K, **Wen, A.**, Goldberg, D, Shedden, K, Crout, R, McNeil, D, Weyant, RJ, Marazita, M. (2016) The effects of family, dentition and dental careis on the salivary microbiome. *Annals of Epidemiology*, 26(5): 348-354.
- Wen, A.** (2015) Association between habitat characteristics, human activities and Anuran species in a wetland agricultural landscape. *Journal of Herpetology*, 49(4): 594-601.
- Wen, A.**, Srinivasan, U., Goldberg, D., Owen, J., Marrs, C.F., Misra, D., Wing, D.A., Ponnaluri, S., Miles-Jay, A., Bucholz, B., Abbas, K., Foxman, B. (2014) Selected vaginal bacteria and risk of preterm birth: an ecological perspective. *Journal of Infectious Diseases*, 209(7): 1087-1094. Epub 2013 Nov 22.
- Foxman, B., **Wen, A.**, Srinivasan, U., Goldberg, D., Marrs, C.F., Owen, J., Wing, D.A., Misra, D. (2014) Mycoplasma, bacterial vaginosis-associated bacteria BVAB3, race and risk of preterm birth in a high-risk cohort. *American Journal of Obstetric and Gynecology*, 210(3): 226.e1-7. Epub 2013 Oct 4.

Foxman, B., **Wen, A.**, Srinivasan, U., Zhang, L., Marrs, C.F., Goldberg, D., Weyant, R., McNeil, D., Crout, R., Marazita, M. (2014) Exploring the effect of dentition, dental decay and familiarity on oral health using metabolomics. *Infection, Genetics and Evolution*, 22:201-207. Epub 2013 Sept 27.

Wen, A., D. Goldberg, C.F. Marrs, R.J. Weyant, M.L. Marazita, U. Srinivasan, L. Zhang, R. Crout, D.W. McNeil, B. Foxman. (2012) Caries resistance as a function of age in an initially caries-free population. *Journal of Dental Research*, 91(7): 671-675.

Srinivasan, U., S. Ponnaluri, L. Villareal, B. Gillespie, A. **Wen**, A. Miles, B. Bucholz, C.F. Marrs, R.K. Lyer, D. Misra, B. Foxman. (2012) Gram stains: a resource for retrospective analysis of bacterial pathogens in clinical studies. *Plos One*, 7(10): e42898. doi: 10.1371/journal.pone.0042898. Epub 2012 Oct 11

Foxman, B., K.J. Elgersma, **A. Wen**, M. Buxton, L. Zhang, and C. Barbosa-Cesnik (2011). Reply to Eells et al. Daily Cranberry Prophylaxis to Prevent Recurrent Urinary Tract Infections May Be Beneficial in Some Populations of Women. *Clinical Infectious Diseases* 52: 1394-1395. (with erratum published in Clin Infect Dis 54(2): 309)

Liu, G., H. Seiler, **A. Wen**, T. Zars, K. Ito, R. Wolf, M. Heisenberg, L. Liu. (2006) Distinct memory traces for two parameters of visual pattern recognition in the Drosophila brain. *Nature*, 439: 551-556.

Ai Wen & Li Liu. (2003). Drosophila as a Model to Study Human Neurodegenerative Diseases. *Progress in Biochemistry and Biophysics* (in Chinese), 30(3): 357-362.

Ai Wen & Li Liu. (2002). Molecular Mechanism of Learning and Memory in *Drosophila*. *Progress in Biochemistry and Biophysics* (in Chinese), 29 (5): 60-673.

MANUSCRIPTS IN REVIEW/REVISION:

Bruns, C., Demastes, J., Berendzen, P., **Wen, A***. Genetic diversity of *Bombus griseocollis* in restored prairie grassland habitat in the U.S. Midwest. Restoration Ecology. (in revision)

MANUSCRIPTS IN PREP:

Madsen, K., Jackson, L., Sherrard, M., Elgersma, K., **Wen, A.** Long-term productivity of high-diversity prairie biomass feedstocks. (in prep)

AWARDS:

December, 2019, Summer Fellowship, University of Northern Iowa, Graduate College. \$3,600.

Spring 2018, Excellence in Liberal Arts Teaching, University of Northern Iowa

ORAL PRESENTATIONS:

Wen, A., Elgersma, E., Sherrard, M., Jackson, L., Meissen, J. & Myers, M. (2021) Are we planting the right forbs to restore the plant-pollinator network in the Tallgrass Prairie Habitat? *Day of Insects*, Reiman Gardens, Ames, Iowa. March 27, 2021.

Srinivasan, U., **Wen, A.**, Marrs, C., Zhang, L., Weyant, R., McNeil, D., Marazita, M., Crout, R., Foxman, B. 2012 Exploring the effect of dentition, dental decay and familiarity on oral health using metabolomics. 11th International Conference on Molecular Epidemiology and Evolutionary Genetics of Infectious Diseases.

Wen, A. 2010. Anuran's habitat selection in active and abandoned cranberry farms in the Pine Barrens, New Jersey. 95th Ecological Society of America Annual Meeting. Aug. 1-6, 2010, Pittsburgh, PA.

Wen, A. 2009. Effects of agriculture's legacy on wetland succession and its implication on restoration. Society of Wetland Scientists Annual Meeting. June 21-26, 2009, Madison, WI.

Wen, A. 2008. Seed bank composition and its function in farmland succession in abandoned cranberry farms. Invited talk. Annual meeting of the Firman E. Bear Chapter of the Soil and Water Conservation Society.

Wen, A. 2007. The habitat use by birds of active and abandoned cranberry farms in the Pine Barrens of New Jersey. 92nd Ecological Society of America Annual Meeting. **2007.** Ecological Society of America Annual Meeting. Aug. 5-10, 2007, San Jose, CA.

POSTER PRESENTATIONS:

Dickey, E. and A Wen (2023) Changes in floral resources and the “bee plants” within CRP-42 restorations in northeast Iowa. UNI Summer Undergraduate Research Program Poster Session, 7/28/2023

Haynes, M, B Jack and A Wen (2022) Using environmental DNA (eDNA) to assess pollinator communities in Cedar Valley. UNI Summer Undergraduate Research Program Poster Session, 7/29/2022

Hughes, H and A Wen (2022) Macrophotography: a closer look at our world. Iowa NASA Student Research Symposium, Iowa City, IA, 04/02/2022

Murray, T and A Wen (2020) Insect community diversity on campus prairies with different ages. Virtual UNI Summer Undergraduate Research Program Poster Session, 7/31/2020

Eagan, A, G Brown and A Wen (2019). Assessing CP-42 habitat value for bees using the Floral Resource Index. UNI Summer Undergraduate Research Program Poster Session, 8/2/2019

Johnson, P, K Elgersma and A Wen (2019). Sown and unsown floral resources both support bee abundance. UNI Summer Undergraduate Research Program Poster Session, 8/2/2019

Willoughby, O, A Burgert, N Theel, and **A Wen** (2018). Correlation between wild bee populations and vegetative resources in the conservation reserve program’s pollinator enhancement plantings. UNI Summer Undergraduate Research Program Poster Session, 7/27/2018.

Madsen, K, C Dolan, M Myers and **A Wen** (2017). Bee and Butterfly Response to Floral Resources in Central Iowa Prairie Restorations. UNI Summer Undergraduate Research Program Poster Session, 7/28/2017.

Ridgway, A, KJ Elgersma, S Hendrix, M Myers, B Hokscho, and **A Wen** (2015). Density and diversity of bees in the Midwestern agricultural landscape: comparing vegetable and biofuel production to native remnant prairies. Ecological Society of America Annual Meeting, Baltimore, MD, 8/12/2015.

Jensen, J, A Ridgway, **A Wen**, and K Elgersma (2015). Wild Bee Abundance and Diversity in Relation to Landscapes Surrounding Iowa Vegetable Farms. UNI Summer Undergraduate Research Program Poster Session, 7/31/ 2015.

Nettleton, B, A Ridgway, **A Wen**, and K Elgersma (2015). Comparing Bee Diversity and Abundance in Candidate Biomass Crops. UNI Summer Undergraduate Research Program Poster Session, 7/31/2015.

Elgersma, K., **Wen, A.**, Herben, T., Currie, W., Goldberg, D. Estimating dynamic allocation to clonal plant growth using static measurements. 98th Ecological Society of America Annual Meeting, Aug 3-9, 2013, Minneapolis, MN

Wen, A., Srinivasan, U., Goldberg, D., Owen, J., Marrs, C.F., Misra, D., Wing, D.A., Foxman, B. **2013.** Vaginal microbial community and risk of preterm birth: an ecological perspective. 98th Ecological Society of America Annual Meeting, Aug 3-9, 2013, Minneapolis, MN.

Betsy Foxman, **Ai Wen**, Usha Srinivasan, Mariana Rosenthal, Carl Marrs, Lixin Zhang, Jean Li, Richard Crout, Daniel W. McNeil, Mary Marazita. **2013.** Does similarity of oral microbiome explain why dental decay runs in families? Cell Symposia: Microbiome & Host Health, 12-14 May 2013, Lisbon, Portugal.

Srinivasan, U., **Wen, A.**, Zhang, L., Marrs, C., Goldberg, D., Thomas, J., Weyant, R., Crout, R., McNeil, D., Marazita, M., Foxman, B. **2012**. Exploring bacterial community structure of dental decay using Illumina deep sequencing: a pilot. International Society for Microbial Ecology bi-annual meeting.

Srinivasan, U., **Wen, A.**, Zhang, L., Farrer, E., Marrs, C., Goldberg, D., Thomas, J., Weyant, R., Crout, R., McNeil, D., Marazita, M., Foxman, B. **2010**. Does oral bacterial diversity predict progression to caries in children? Results of a pilot study. International Society for Microbial Ecology bi-annual meeting.

Wen, A. 2008. Species composition in the seedbank of abandoned cranberry farms: from a restoration perspective. 93rd Ecological Society of America Annual Meeting. Aug. 3-8, 2008, Milwaukee, WI.

REVIEWERS:

Forest Science 2009-2013

Journal of Public Health Dentistry 2015-

PeerJ 2023-

Insect Conservation and Diversity 2023-

(Review Editor) Frontier in Ecology and Evolution 2023-

PROFESSIONAL SERVICES:

Member of Practical Farmers of Iowa 2014-

Board member of Iowa Organic Association 2015-

Executive committee member of Iowa Organic Association 2021-2024

STUDENT MENTOR SERVICES:

Faculty advisor to student organization “Student Nature Society” 2019-

Faculty advisor to student organization “Be the Match” at UNI 2017-

Oct. 2013 Nominated as an Honorary Sideline Coach by students from the UNI Volleyball Team

SKILLS:

Statistics: conventional (multivariate analysis, regression analysis, zero-inflated poisson modeling, non-parametric analysis, etc.), information theory and Bayesian statistics (including Bayesian hierarchical models)

Genetics research: ecological analysis using deep-sequencing data

GIS: ArcGIS and ERDAS

Computer programming skills: R; Visual Basic; WinBugs

Pollinator survey: pan-trapping and sweep netting; native bee species level identification

Avian survey: transect and point survey; mist netting; usage of Distance software (for bird population survey)

Amphibian survey: anuran vocal transect and point survey; anuran vocal identification; mist-net survey; population multinomial and latent class modeling

Small mammal: mark-recapture technique

Languages: fluent in English and Mandarin