

Timothy L. Dickson

(updated February 2023)

Department of Biology
University of Nebraska Omaha (UNO)
Omaha, NE 68182 USA

<http://GrasslandEcology.com>
tdickson@unomaha.edu
Office phone: +1 (402) 554-2619

EDUCATION

Ph.D. in Ecology and Evolutionary Biology, Main advisor: Dr. Bryan L. Foster,
University of Kansas 2006, Phi Kappa Phi

B.A. in Biology with a concentration in Environmental Studies, St. Olaf College 1999,
cum laude with departmental distinction

APPOINTMENTS

University of Nebraska Omaha (2013-present)

Associate professor (2019-present): Work primarily on teaching and research related to ecosystem restoration.

Assistant professor (2013-2019)

W.K. Kellogg Biological Station, Michigan State University (2011-2013)

Research associate: Worked primarily with Dr. Katherine Gross.

Missouri Botanical Garden (2011)

Research associate: Worked primarily with Dr. George Yatskievych.

Tyson Research Center, Washington University in St. Louis (2009-2010)

Field station staff scientist: Worked primarily with Dr. Jon Chase.

Iowa State University (2005-2008)

Post-doctoral research associate: Worked primarily with Dr. Brian Wilsey.

University of Kansas (2000-2006)

Ph.D. student: Primarily advised Dr. Bryan Foster with Drs. Craig Freeman, Kelly Kindscher, Helen Alexander, and J. Chris Brown also serving on dissertation committee.

MacArthur Agro-Ecology Research Center, Archbold Biological Station Florida (2000)

Research internship: Advised by Dr. Patrick Bohlen.

Cedar Creek Natural History Area, University of Minnesota (1999)

Research internship: Advised by Dr. Charles Mitchell.

PEER-REVIEWED PUBLICATIONS (h-index = 18; 18 publications cited 18+ times)

- 28) Daleo, P., J. Alberti, E.J. Chaneton, O. Iribarne, P.M. Tognetti, J.D. Bakker, E.T. Borer, M. Bruschetti, A.S. MacDougall, J. Pascual, M. Sankaran, E.W. Seabloom, S. Wang, S. Bagchi, L.A. Brudvig, J.A. Catford, C.R. Dickman, **T.L. Dickson**, and 22 additional authors. 2023. Environmental heterogeneity modulates the effect of biodiversity on the spatial variability of grassland biomass. *Nature communications* (in press).
- 27) **Dickson, T.L.**, B. Poynor, and C.J. Helzer. 2023. Cattle graze central US milkweeds at least as much as grasses, even under patch-burn-grazing management. *Rangeland Ecology and Management* 87:158-166.
- 26) Zhu, L., **T.L. Dickson**, Z. Zhang, A. Dere, J. Xu, T. Bragg, W. Tappich, and G. Lu. 2021. Effects of burning and mowing on the soil microbiome of restored tallgrass prairie. *European Journal of Soil Science* 72:385-399.
- 25) Borer, E.T., W.S. Harpole, P.B. Adler, C.A. Arnillas, M.N. Bugalho, M.W. Cadotte, M.C. Caldeira, S. Campana, C.R. Dickman, **T.L. Dickson**, and 25 additional authors. 2020. Nutrients cause grassland biomass to outpace herbivory. *Nature communications* 11:1-8.
- 24) **Dickson, T.L.** 2019. Burning and mowing similarly increase prairie plant production in the spring, but not due to increased soil temperatures. *Ecosphere* 10:e02606.
- 23) **Dickson, T.L.**, B.A. Hayes, and T.B. Bragg. 2019. Effects of 34 years of experimentally manipulated burn seasons and frequencies on prairie plant composition. *Rangeland Ecology and Management* 72:82-91.
- 22) Catano, C.P., **T.L. Dickson**, and J.A. Myers. 2017. Dispersal and neutral sampling mediate contingent effects of disturbance on plant beta-diversity: a meta-analysis. *Ecology Letters* 20:347-356.
- 21) Edens-Meier, R.M., G. Brown, J. Zweck, J. Edens, **T.L. Dickson**, H. Nonnenmacher, E. Westhus, and P. Bernhardt. 2017. Reproductive ecology of *Asclepias meadii* Torr. (Apocynaceae), a federally threatened species. *The Journal of the Torrey Botanical Society* 144:218-229.
- 20) Stahlheber, K.A., B. Watson, **T.L. Dickson**, R. Disney, and K.L. Gross. 2016. Balancing biofuel production and biodiversity: Harvesting frequency effects on production and community composition in planted tallgrass prairie. *Biomass and Bioenergy* 92:98-105.
- 19) **Dickson, T.L.** and K.L. Gross. 2015. Can the Results of Biodiversity-Ecosystem Productivity Studies Be Translated to Bioenergy Production? *PLoS ONE* 10: e0135253.
- 18) Werling, B.P., **T.L. Dickson**, R.I. Isaacs, H. Gaines, C. Gratton, K.L. Gross, H. Liere, C.M. Malmstrom, T.D. Meehan, L. Ruan, B.A. Robertson, G.P. Robertson, T.M. Schmidt, A.C. Schrottenboer, T.K. Teal, J.K. Wilson, and D.A. Landis. 2014. Perennial grasslands enhance

biodiversity and multiple ecosystem services in bioenergy landscapes. *Proceedings of the National Academy of Sciences* 111:1652-1657.

17) **Dickson, T.L.**, G.G. Mittelbach, H.L. Reynolds, and K.L. Gross. 2014. Height and clonality traits determine plant community responses to fertilization. *Ecology* 95:2443–2452.

16) Hallett, L.M., J.S. Hsu, E.E. Cleland, S.L. Collins, **T.L. Dickson**, E.C. Farrer, L.A. Gherardi, K.L. Gross, R.J. Hobbs, L. Turnbull, and K.N. Suding. 2014. Biotic mechanisms of community stability shift along a precipitation gradient. *Ecology* 95:1693-1700.

15) **Dickson, T.L.** and K.L. Gross. 2013. Plant community responses to long-term fertilization: changes in functional group abundance drive changes in species richness. *Oecologia* 173:1513-1520.

14) Cleland, E.E., S.L. Collins, **T.L. Dickson**, E.C. Farrer, K.L. Gross, L.A. Gherardi, L.M. Hallett, R.J. Hobbs, J.S. Hsu, K.N. Suding, and L. Turnbull. 2013. Sensitivity of grassland plant community composition to spatial versus temporal variation in precipitation. *Ecology* 94:1687-1696.

13) **Dickson, T.L.**, J.L. Hopwood, and B.J. Wilsey. 2012. Do priority effects benefit invasive plants more than native plants? An experiment with six grassland species. *Biological Invasions* 14:2617-2624.

12) **Dickson, T.L.** and B.L. Foster. 2011. Fertilization decreases plant biodiversity even when light is not limiting. *Ecology Letters* 14:380-388.

11) Foster, B.L., E.J. Questad, C.D. Collins, C.A. Murphy, **T.L. Dickson**, and V.H. Smith. 2011. Seed availability constrains plant species sorting along a soil fertility gradient. *Journal of Ecology* 99:473-481.

10) **Dickson, T.L.** and C.E. Mitchell. 2010. Herbivore and fungal pathogen exclusion affects the seed production of four common grassland species. *PLoS ONE* 5: e12022.

9) **Dickson, T.L.**, B.J. Wilsey, R.R. Busby, and D.L. Gebhart. 2010. *Melilotus officinalis* (yellow sweetclover) causes large changes in community and ecosystem processes in both the presence and absence of a cover crop. *Biological Invasions* 12:65-76.

8) **Dickson, T.L.** and W.H. Busby. 2009. Forb species establishment increases with decreased grass seeding density and with increased forb seeding density in a northeast Kansas, USA experimental prairie restoration. *Restoration Ecology* 17:597-605.

7) **Dickson, T.L.** and B.J. Wilsey. 2009. Biodiversity and tallgrass prairie decomposition: the relative importance of species identity, evenness, richness, and micro-topography. *Plant Ecology* 201:639-649.

- 6) **Dickson, T.L.** and B.L. Foster. 2008. The relative importance of the species pool, productivity, and disturbance in regulating grassland plant species richness: a field experiment. *Journal of Ecology* 96:937-946.
- 5) **Dickson, T.L.**, B.J. Wilsey, R.R. Busby, and D.L. Gebhart. 2008. Grassland plant composition alters vehicular disturbance effects in Kansas, USA. *Environmental Management* 41:676-684.
- 4) Foster, B.L. and **T.L. Dickson**. 2004. Grassland diversity and productivity: The interplay of resource availability and propagule pools. *Ecology* 85:1541-1547.
- 3) Foster, B.L., **T.L. Dickson**, C. Murphy, I.S. Karel, and V.H. Smith. 2004. Propagule pools mediate community assembly and diversity-ecosystem regulation along a grassland productivity gradient. *Journal of Ecology* 92:435-449.
- 2) Foster, B.L., V.H. Smith, **T.L. Dickson**, and T. Hildebrand. 2002. Invasibility and compositional stability in a grassland community: relationships to diversity and extrinsic factors. *Oikos* 99:300-307.
- 1) **Dickson, T.L.**, M. Swift, and H. Shierholz. 2000. A comparison of stream segment and quadrat mussel sampling techniques. *BIOS* 71:42-49.

FUNDING / HONORS

- PI for \$5,000 grant from The Nature Conservancy (TNC) “TNC sampling of milkweeds in grazed fields in central Nebraska” (2019)
- Senior Personnel for \$1,000,000 grant from National Science Foundation “NSF S-STEM Track II: EMPLOYEE: Empowering undergraduates via Mentorship, Professional development, Leadership, and Opportunities for Youth EngagEment” (2019-2024)
- PI with Dr. James Hayes from UNO Geography / Geology for \$22,894 grant from UNO Fund for Investing in the Research Enterprise “A closer look: How does spatial resolution change remotely sensed estimates of bioenergy and correlated ecological variables?” (2015-2016)
- PI for \$5,000 grant from UNO University Committee on Research and Creative Activity “Effects of Prairie Fire and Mowing on Soil Temperature” (2013)
- PI for \$10,000 grant from W.K. Kellogg Foundation “Alfalfa Persistence and Grazing Intensity in a Grass Forage Mix” (2012)
- Co-PI with Dr. Tiffany Knight for \$721,000 grant from National Science Foundation “Mechanisms of Species-Area Relationships in Ozark Glades” (2010-2015)
- PI for \$7,500 glade restoration grant from Missouri Department of Conservation “Glade Restoration at West Tyson County Park in Collaboration with Tyson Research Center, Shaw Nature Reserve, and Community Volunteers” (2009)
- \$1,000 travel grant to Ecological Society of America meeting from Strategic Environmental Research and Development Program (2005)
- \$14,000 dissertation fellowship from the University of Kansas Graduate School (2004)
- Initiated into Phi Kappa Phi Honor Society (2004)
- \$500 University of Kansas Field Stations and Ecological Reserves Small Grant (2003)

- Braun Award for best student poster at national Ecological Society of America meeting (2003)
- \$600 Tri-Beta Biological Honor Society undergraduate research grant (1998)

TEACHING

- Instructor: “Design and Analysis of Biological Research (BIOL 8250)” for University of Nebraska Omaha graduate students (2020-present)
- Instructor: “Foundations of Ecology (BIOL 8060)” literature discussion course for University of Nebraska Omaha graduate students (2017)
- Guest Lecturer: “Environmental Problems and Solutions (ENVN 2010)” for University of Nebraska Omaha undergraduate students (2016-present)
- Instructor: “Restoration Ecology (BIOL 4420 / 8426)” for University of Nebraska Omaha undergraduate and graduate students (2014-present)
- Instructor: “Ecology (BIOL 3340 / 8345)” for University of Nebraska Omaha undergraduate and graduate students (2014-present)
- Instructor: “Introductory Biology II (Organismal) (BIOL 1750)” for University of Nebraska Omaha undergraduate students (2013-present)
- Instructor: “Practical Skills in Environmental Biology Research” for Washington University undergraduate students (2010)
- Instructor: “Experimental Ecology” for Washington University undergraduate students (2009)
- Guest Lecturer: “Environmental Studies” for Des Moines Area Community College (2007-2008)
- Guest Lecturer: “Principles of Biology (Organismal)” for Iowa State University undergraduate students (2006-2008)
- Teaching Assistant: “Principles of Organismal Biology Laboratory” for University of Kansas undergraduate students (2002-2004)
- Teaching Assistant: “Biometry (Introductory Statistics)” for University of Kansas graduate students (2001-2002)
- Teaching Assistant: “Non-Majors Introductory Biology Laboratory” for University of Kansas undergraduate students (2001-2002)

MENTORING ACTIVITIES

- Primary mentor for six UNO Biology M.S. students on independent research projects (2014-present)
- Primary mentor for three UNO Fund for Undergraduate Scholarly Experiences:
 - “Analysis of Soil Microorganisms from Agricultural Land and Restored Prairie at Glacier Creek Preserve” (2017)
 - “Establishment of Milkweed Seeds under Different Conditions” (2016)
 - “The Effects of Competition for Water and Light on the Establishment of Prairie Wildflower Seedlings” (2015)
- Mentor for UNO Teacher-Researcher Partnership Program:
 - “The Effect of Row-Crop Agriculture and Prairie Restoration on Soil Organic Matter” (2017)

- Mentored a Research Experiences for Undergraduates (REU) and 2 undergraduate students on their research projects related to plant diversity and biofuels at Michigan State University (2013).
- Helped to mentor a M.S. and REU student on their biofuel research projects at Michigan State University (2012).
- Mentored two REU students on their independent research projects focused on ecology of glade plants and ecosystem characteristics at Washington University (2010).
- Supervised four high school students from urban St. Louis on research projects at Washington University (2009-2010)
- Coordinated program that paired 24 high school students with research mentors at Washington University as part of the National Science Foundation Research Fellowship program at Tyson Research Center (2009-2010).
- Hired and supervised undergraduates to assist with maintaining and sampling field experiments at Iowa State University (2006-2008).
- Supervised undergraduates who assisted with maintaining experiments and collecting data at the University of Kansas (2002-2004).

SYNERGISTIC ACTIVITIES

Journal Reviewer

- Agronomy Journal; American Journal of Botany; Applied Vegetation Science; Biological Invasions; Community Ecology; Ecography; Ecological Restoration; Ecosphere; Functional Ecology; Global Change Biology; Journal of Applied Ecology; Journal of Biogeography; Journal of Ecology; Journal of Vegetation Science; Oecologia; Plant Ecology; Plant Ecology & Diversity; PLoS ONE; Remote Sensing; Restoration Ecology

Current Grant Reviewer

- U.S. National Science Foundation: Division of Environmental Biology
- Weaver Grants (The Nature Conservancy)

Past Reviewer

- Netherlands Organization for Scientific Research (2009)
- Biology textbook chapters for Jones and Bartlett publisher (2009)

Professional Memberships

- Society for Range Management (2021-present)
- Society for Ecological Restoration (2002-present)
- Ecological Society of America (2000-present)
- The Nature Conservancy (1998-present)
- American Society of Agronomy (2006-2009)

Service and Outreach

- Reviewer for UNO Graduate Research and Creative Activity (GRACA) grants (2014-present)

- Member of the following committees within UNO Biology: Graduate Program Committee (2017-present); Dual Enrollment Committee (2015-2018); UNO Biology Preserves Committee (2015-present)
- Member of the Turkey Creek Preserve Oversight Committee (2015-2022) and Turkey Creek Preserve Director (2019-2022)
- Moderator for University of Nebraska Omaha Student Research and Creative Activity Fair (2014-2019)
- Presented Fire Effects on Plant Diversity and Soil Temperature work to Tallgrass Prairie & Oak Savanna Fire Science Consortium (2015)
- Presented to Michigan Wild Ones Native Plant Organization (2013)
- Presented at Kellogg Biological Station Field Day (2012)
- Judge for Ecological Society of America Braun poster award (2010-present)
- Presented Glade Restoration work to Missouri Native Plant Society (2010)
- Led Plant Section of St. Louis BioBlitz (2010)
- Organized Symposium on Invasive Species at American Society of Agronomy (2009)
- Attended and voted at University of Kansas Ecology and Evolutionary Biology faculty meetings as Graduate Student Voting Representative (2002-2004)
- Co-Organized New Graduate Student Orientation for University of Kansas Ecology and Evolutionary Biology Department (2001-2003)
- Founder and first president of St. Olaf College Environmental Coalition student organization (1998-1999)

STATISTICAL SKILLS: Structural Equation Modeling; Multivariate Statistics (MANOVA, Multiple Linear Discriminant Function, Cluster Analysis, etc.); Multiple-Linear Regression; basic statistics (ANOVA, Regression, Chi-Square test, etc.); basic Bayesian and Maximum Likelihood statistics

COMPUTER SKILLS: SAS, R, SPSS, MINITAB, PC-ORD, and LISREL statistical programs; Microsoft web page editors, Access, Excel, PowerPoint, and Word; ArcView and ArcGIS; Adobe Photoshop; familiarity with GPS systems; C++, SCHEME, and Visual Basic programming languages

SECOND LANGUAGE SKILLS: Competent in reading, writing, and speaking German

INVITED AND CONTRIBUTED FIRST-AUTHOR PRESENTATIONS

2019

Contributed oral presentation – National meeting of America’s Grasslands Conference

2018

Contributed oral presentation - Nutrient Network Workshop at University of Minnesota

Invited oral presentation – Kansas Biological Survey / University of Kansas

2017

Contributed oral presentation - National meeting of the Ecological Society of America

Invited oral presentation – University of Nebraska-Lincoln Agronomy & Horticulture Department

2016

Contributed oral presentation – Nutrient Network Workshop at University of Minnesota

2015

Contributed oral presentation - National meeting of the Ecological Society of America

Invited oral presentation – Tallgrass Prairie & Oak Savanna Fire Science Consortium meeting at UNO

Invited oral presentation – University of Nebraska-Lincoln Extension’s EUREKA conference

2014

Invited oral presentation – Wichita State University Department of Biological Sciences

2013

Contributed oral presentation - National meeting of the Ecological Society of America

Invited oral presentation – University of Nebraska, Lincoln Biology Department

Seminar speaker – Bowling Green State University, Ohio Biology Department

Seminar speaker – University of Nebraska, Omaha Biology Department

Seminar speaker – University of Texas, El Paso Biology Department

2012

Invited oral presentation – National meeting of the Ecological Society of America

Poster presentation – Great Lakes Bioenergy Research Center Retreat

Invited oral presentation – Grand Valley State University, Michigan Biology Department

Seminar speaker – North Dakota State University Biology Department

Seminar speaker – University of Texas, Arlington Biology Department

2011

Seminar speaker - University of Oklahoma Botany and Microbiology Department

Seminar speaker - University of Nebraska, Omaha Biology Department

2010

Contributed oral presentation - National meeting of the Ecological Society of America

2009

Invited oral presentation - National meeting of the American Society of Agronomy

2008

Contributed oral presentation - National meeting of the American Society of Agronomy

Contributed oral presentation - North American Prairie Conference

2007

Poster presentation - National meeting of the Ecological Society of America

Contributed oral presentation - National meeting of the American Society of Agronomy

2006

Contributed oral presentation - National meeting of the Ecological Society of America
Contributed oral presentation - National meeting of the American Society of Agronomy

2005

Contributed oral presentation - National meeting of the Ecological Society of America

2004

Contributed oral presentation - National meeting of the Ecological Society of America

2003

Contributed oral presentation - National meeting of the Ecological Society of America
Contributed oral presentation - Midwest Ecology and Evolution Conference
Poster presentation - USA meeting of the Society for Ecological Restoration

2002

Poster presentation - National meeting of the Ecological Society of America

1999

Poster presentation - National meeting of the North American Benthological Society