

Ava Hoffman

ECOLOGIST · DATA SCIENTIST

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EDUCATION

2019 Ph.D. Ecology

Colorado State University · Fort Collins, CO

2012 B.S. Biology

University of Virginia · Charlottesville, VA

PROFESSIONAL EXPERIENCE

2019-2020 **The Boston Consulting Group** · Data Scientist · Boston, MA

2018-2019 **Insight Data Science** · Insight Data Science Fellow · Remote Program

2017-2018 **US Department of Agriculture** · NIFA-AFRI Predoctoral Fellow · Colorado State University · Fort Collins, CO

2012-2013 **DuPont Pioneer** · Laboratory Assistant · Biotechnology Division · Wilmington, DE

2011-2012 **University of Virginia** · Undergraduate Researcher · Department of Biology · Charlottesville, VA

2011 **Coweeta Hydrologic Laboratory LTER and United States Forest Service** · Research Intern · Otto, NC

2010 **Virginia Commonwealth University** · Research Assistant · Richmond, VA

FELLOWSHIPS | GRANTS | AWARDS

Total received: \$118,112

2018 **Colorado State University** · Research Mentoring to Advance Inclusivity in STEM Research Grant (\$2500)

2017-2018 **Colorado State University** · School of Global Environmental Sustainability Leadership Fellowship

2016-2018 **United States Department of Agriculture** · NIFA-AFRI Predoctoral Fellowship (\$94,999)

2016 **City of Boulder Open Space and Mountain Parks** · Research Grant (\$5669)

2016-2017 **Colorado State University** · Vice President of Research Graduate Fellow (\$3125)

2016 **The Nature Conservancy** · J.E. Weaver Competitive Grant (\$1000)

2016 **The Ecological Society of America** · 'Hackathon' beginner app developer first place award

2016 **Colorado State University** · Graduate Degree Program in Ecology Small Research Grant (\$2000)

2016 **Colorado State University** · Graduate Degree Program in Ecology Travel Grant (\$175)

2015-2016 **Colorado State University** · Graduate Degree Program in Ecology Teaching Fellowship

2015 **Colorado State University** · Harold Harrington Fellowship (\$1900)

2014-2015 **Colorado State University** · Stavros Family Fund Recipient (\$3021)

2014-2015 **Colorado State University** · Department of Biology Travel Awards (\$2258)

2014 **National Science Foundation** · Graduate Research Fellowship Program (Honorable Mention)

2014 **Colorado State University** · Sharon E. and David E. Kabes Scholarship (\$590)

2013 **Colorado State University** · Graduate Fellowship Award (\$1000)

2012 **University of Virginia** · Undergraduate Research Travel Grant (\$1000)

PUBLICATIONS

2020 **Hoffman, AM** and MD Smith. Nonlinear drought plasticity reveals intraspecific diversity in a dominant grass species. *Functional Ecology*.

2020 Knapp, AK, A Chen, RJ Griffin-Nolan, LE Baur, CJW Carroll, JE Gray, **AM Hoffman**, X Li, AK Post, IJ Slette, SL Collins, Y Luo, MD Smith. Resolving the Dust Bowl paradox of grassland responses to extreme drought. *PNAS*.

2020 **Hoffman, AM**, JA Bushey, TW Ocheltree, MD Smith. Genetic and functional variation across regional and local scales is associated with climate in a foundational prairie grass. *New Phytologist*.

PUBLICATIONS (CONTINUED)

- 2020 KR Wilcox, SE Koerner, DL Hoover, AK Borkenhagen, DE Burkepile, SL Collins, **AM Hoffman**, KP Kirkman, AK Knapp, T Strydom, DI Thompson, and MD Smith. Rapid recovery of ecosystem function following extreme drought in a South African savanna-grassland. *Ecology*.
- 2019 **Hoffman, AM**, H Perretta*, NP Lemoine, and MD Smith. Blue grama grass genotype affects palatability and preference by semi-arid steppe grasshoppers. *Acta Oecologia*.
- 2019 Griffin-Nolan, RJ, D Blumenthal, S Collins, T Farkas, **AM Hoffman**, K Mueller, TW Ocheltree, MD Smith, AK Knapp. Shifts in plant functional composition following long-term drought in grasslands. *Journal of Ecology*.
- 2019 Smith, MD, SE Koerner, AK Knapp, ML Avolio, FA Chaves, EM Denton, J Dietrich, DJ Gibson, J Gray, **Hoffman, AM**, DL Hoover, KJ Komatsu, A Silletti, KR Wilcox, Q Yu, and JM Blair. Mass ratio effects underlie ecosystem responses to environmental change. *Journal of Ecology*.
- 2018 **Hoffman, AM** and MD Smith. Thinking inside the box: Tissue culture for plant propagation in a key ecological species, *Andropogon gerardii*. *American Journal of Plant Sciences*.
- 2018 Knapp, AK, C Carroll, RJ Griffin-Nolan, IJ Slette, F Chaves, L Baur, AJ Felton, JE Gray, **AM Hoffman**, NP Lemoine, W Mao, A Post, MD Smith. A reality check for climate change experiments: do they reflect the real world? *Ecology*.
- 2018 Griffin-Nolan, RJ, JA Bushey, CJW Carroll, A Challis, J Chieppa, M Garbowski, **AM Hoffman**, AK Post, IJ Slette, D Spitzer, D Zambonini, TW Ocheltree, DT Tissue, AK Knapp. Trait selection and community weighting are key to understanding ecosystem responses to changing precipitation regimes. *Functional Ecology*.
- 2018 **Hoffman, AM**, ML Avolio, AK Knapp, MD Smith. Co-dominant grasses differ in gene expression under experimental climate extremes in native tallgrass prairie. *PeerJ*.
- 2017 **Hoffman, AM** and MD Smith. Gene expression differs in codominant prairie grasses under drought. *Molecular Ecology Resources*.
- 2017 Avolio, ML, **AM Hoffman**, MD Smith. Linking gene regulation, physiology, and plant biomass allocation in *Andropogon gerardii* in response to drought. *Plant Ecology*.
- 2016 Lemoine, NP, **AM Hoffman**, A Felton, L Baur, F Chaves, J Gray, Q Yu, MD Smith. Underappreciated problems of low statistical power in ecological field studies. *Ecology*.
- 2016 Smith, MD, **AM Hoffman**, ML Avolio. Gene expression patterns of two dominant tallgrass prairie species differ in response to warming and altered precipitation. *Scientific Reports*.
- 2012 Mellor, KE, **AM Hoffman**, MP Timko. Use of ex vitro composite plants to study the interaction of cowpea (*Vigna unguiculata* L.) with the root parasitic angiosperm *Striga gesnerioides*. *Plant Methods*.
- 2012 **Hoffman, AM** Estimating tree transpiration accurately depends on wood type and species: a study of four southern Appalachian tree species. *The Oculus*.
- 2011 Zinnert, JC, JD Nelson, **AM Hoffman**. Effects of salinity on physiological responses and the photochemical reflectance index in two co-occurring coastal shrubs. *Plant & Soil*.
- 2010 Zinnert, JC, JD Nelson, JK Vick, **AM Hoffman**, DR Young. Rethinking chlorophyll responses to stress: Fluorescence and reflectance remote sensing in a coastal environment. *Proceedings of the 4th International Workshop on Remote Sensing of Vegetation Fluorescence*, Valencia, Spain.
- In review **Hoffman, AM**, NP Lemoine, TW Ocheltree. Metabolomic and physiological responses to nitrogen addition in dominant semi-arid grassland species. *Manuscript available upon request*.
- In review Bushey, JA, **AM Hoffman**, TW Ocheltree, S Gleason, MD Smith. Water limitation reveals local adaptation and plasticity in the drought tolerance strategies of *Bouteloua gracilis*. *Environmental and Experimental Botany*. *Manuscript available upon request*.

*Denotes undergraduate mentee

TEACHING

2016	Data visualization using R and ggplot (guest lecture)	Colorado State University
2014-2016	Molecular and General Genetics (Recitation)	Colorado State University
2016	Community Ecology (Recitation)	Colorado State University
2015	Foundations of Ecology (Recitation, guest lectures)	Colorado State University
2012	Organic Chemistry Lab II	University of Virginia
2011	Organic Chemistry Lab I	University of Virginia

STUDENT MENTORING

2018	Maddie Swall · RMAIS mentee	Colorado State University
2016-2017	Holly Perretta · REU student	Colorado State University
2017	Abigail Lock · Research Assistant	Colorado State University
2016	Brigitte Gaudreault · Laboratory Research Assistant	Colorado State University
2015	Daniel Robotham · Honors Thesis student Thesis committee member	Colorado State University
2014-2015	Brianna Magbual · Research Assistant	Colorado State University
2014	Destiny Brown · Research Assistant	Colorado State University

PRESENTATIONS

- 2020 **Ecological Society of America** · *Remote*
Gene expression reveals different drought response strategies in dominant dryland grass populations.
- 2018 **Ecological Society of America** · *New Orleans, LA*
Plastic prairie: Genetic diversity and local adaptation within blue grama grass.
- 2018 **Front Range Student Ecology Symposium** · *Fort Collins, CO*
Dominant grasses in drylands: linking species and traits to global change in ecosystems.
- 2017 **Colorado State University Drought Symposium** · *Fort Collins, CO*
Phenotypic diversity within dominant blue grama grass across an aridity gradient. [Third place winner](#)
- 2017 **Front Range Open Space Research Symposium** · *Boulder, CO*
Phenotypic diversity within dominant blue grama grass across an aridity gradient. [Invited speaker](#)
- 2017 **Ecological Society of America** · *Portland, OR*
Phenotypic diversity within dominant blue grama grass across an aridity gradient.
- 2017 **Front Range Student Ecology Symposium** · *Fort Collins, CO*
Phenotypic diversity within dominant blue grama grass across a precipitation gradient.
- 2016 **Ecological Society of America** · *Fort Lauderdale, FL*
Thresholds of drought response differ in a tallgrass prairie population.
- 2016 **Vice President Office of Research Fellowship Symposium** · *Fort Collins, CO*
Breaking down the drought portfolio in grasslands. [3-Minute Thesis Invited Speaker](#)
- 2015 **Graduate Student Forum** · *Fort Collins, CO*
 π X: Introduction and tricks of the trade. [Invited speaker](#)
- 2015 **Ecological Society of America** · *Baltimore, MD*
Genotypes of a tallgrass prairie species respond differently to drought, despite high plasticity within populations. [Invited Speaker](#)
- 2015 **Front Range Student Ecology Symposium** · *Fort Collins, CO*
Genotypes of a tallgrass prairie species respond differently to drought, despite high plasticity in populations.
- 2015 **Graduate Student Forum** · *Fort Collins, CO*
Predicting diversity: Old hypotheses, new critiques, and why you should be paying attention. [Invited speaker](#)
- 2014 **Colorado State University Plant Supergroup** · *Fort Collins, CO*
Within-population variation under drought in a tallgrass prairie species. [Invited speaker](#)
- 2014 **Ecological Society of America** · *Sacramento, CA*
Gene expression in co-dominant prairie grasses: comparing transcriptomes using RNA-seq and de novo assembly.
- 2012 **Ecological Society of America** · *Portland, OR*
Composite plants: A novel method for gene screening in cowpea.

PROFESSIONAL SERVICE

Peer review: *Global Change Biology* · *Journal of Ecology* · *New Phytologist* · *Plant Ecology* · *Plos One* · *Agronomy* · *Plant Biology* · *Plants*

- 2011 - 2020 **Ecological Society of America** · Member
- 2016 - 2017 **Front Range Student Ecology Symposium** · Undergraduate research poster judge
- 2015 - 2016 **Graduate Degree Program in Ecology** · Executive Committee Student Representative
- 2015 - 2016 **Front Range Student Ecology Symposium** · Abstract Selection and Review Committee member
- 2015 **Colorado State University Department of Biology** · Faculty search committee student organizer
- 2014 - 2015 **Front Range Student Ecology Symposium** · Executive Board Member
- 2013 - 2014 **Front Range Student Ecology Symposium** · Webmaster
- 2011 - 2014 **Ecological Society of America** · Student Volunteer

COMMUNITY ENGAGEMENT

- 2016 **Colorado Odyssey of the Mind** · Science fair judge · *Fort Collins, CO*
- 2014-2015 **Bella Romero Elementary School** · science fair judge and guest educator · *Greeley, CO*