

Rachel Stein, Ph.D.

Post Doctoral Research Associate – Wildlife Ecologist
School of Natural Resources
University of Nebraska-Lincoln
Lincoln, NE 68583-0961
rstein5@unl.edu

Education

Ph.D., Natural Resources *May 2023*
University of Idaho, Moscow, ID

Master of Science, Natural Resources *Dec 2017*
University of Idaho, Moscow, ID

Bachelor of Science, Biology *Dec 2014*
University of Nebraska-Omaha, Omaha, NE

Professional Interests

Behavioral Ecology of Mammals, Wildlife-Habitat Interactions, Predator-Prey Relationships, Sensory Ecology, Remote Sensing, Science Communication and Outreach

Research Experience

Post Doctoral Research Associate – Wildlife Ecologist *Aug 2023 – Present*
School of Natural Resources, University of Nebraska-Lincoln
The effects of predation, human activity, forage availability, and physical condition on mule deer in Nebraska

Doctoral Student *Aug 2019-May 2023*
Department of Fish and Wildlife Sciences, University of Idaho
Integrating data on sensory cues into habitat ecology

Research Technician *May – Oct 2018*
United States Geological Survey
Management of plague in a prairie ecosystem

Research Technician *May – Aug 2017*
Department of Natural Resources and Society, University of Idaho
Understanding the relationship between needle fluorescence and volatile organic compound emittance in lodgepole pines (*Pinus contorta*)

Masters Student *Aug 2016 – Dec 2017*
McCall Outdoor Science School, Department of Natural Resources and Society, University of Idaho
Did you hear that? Implementing acoustics in a place-based education program

Undergraduate Volunteer Research Assistant

Jan 2013 – Aug 2016

Departments of Biology and Psychology, University of Nebraska-Omaha

Dr. Jeremy White Lab

- Maternity colony of northern long-eared myotis (*Myotis septentrionalis*) in a human-made structure in Nebraska
- Nebraska white-nose syndrome survey

Callitrichid Research Center

- Oxytocin, vasopressin, and interest in marmosets (*Callithrix jacchus*)
- Marmoset's response to inequity following manipulation of the oxytocin system
- The influence of a novel oxytocin amino-acid sequence on pair bond maintenance in a cooperatively breeding primate

Dr. James Wilson Lab

- Why are melanistic fox squirrels spreading in Omaha, Nebraska? An assessment of overwinter body condition, behavior, and skin temperature

Publications (published or in review)

Stein, R.M., Eitel, K., Rachlow, J.L. (*in review*). Integration of lidar remote sensing into a multi-modal experiential wildlife course. *Journal of College Science Teaching*.

Stein, R.M., Rachlow, J.L. 2023. Acoustic ecology of terrestrial mammals: A new Signaller- Receiver Conceptual Framework. *Mammal Review* 53: 143-157.

Stein, R.M., Lecigne, B., Eitel, J.U.H., Johnson, T.R., McGowan, C., Rachlow, J.L. 2022. Vegetation and vantage point influence visibility across diverse ecosystems: Implications for animal ecology. *Frontiers in Ecology and Evolution*, 10: 911051.

Stein, R.M., White, J.A. 2016. Maternity colony of northern long-eared myotis (*Myotis septentrionalis*) in a human made structure in Nebraska. *Transactions of Nebraska Academy of Sciences*, 36: 1-5.

Manuscripts in Preparation (*mentored undergraduate student)

*Allred, C.R., **Stein, R.M.**, Lecigne, B., Eitel, J.U.H., Johnson, T.R., Rachlow, J.L. (*in prep*). Evaluating methods of viewshed estimation. *Methods in Ecology and Evolution*.

Stein, R.M., Lecigne, B., Johnson, T.R., Eitel, J.U.H., Rachlow, J.L. (*in prep*). Under cover: the nuanced influence of visual habitat properties on resource selection by prey. *Ecosphere*.

Honors and Awards

Total Awarded: \$51,900

Anna M. Jackson Award. 2023. American Society of Mammalogists **(\$2,000).**

Third Place. 2022. University of Idaho Three Minute Thesis Competition **(\$500).**

Travel Award. 2022. American Society of Mammalogists **(\$400).**

Curt Berklund Graduate Research Scholar Award. 2022. University of Idaho College of Natural Resources **(\$10,000).**

Graduate Research Grant. 2022. Phi Kappa Phi **(\$1,500).**

Summer Internship. 2021. NASA Idaho Space Grant Consortium **(\$7,000).**

Graduate Fellowship. 2020. NASA Idaho Space Grant Consortium **(\$27,000).**

Grant-in-Aid of Research. 2020. American Society of Mammalogists **(\$1,500).**

Graduate Student Scholarship. 2020. Idaho Chapter of the Wildlife Society **(\$2,000).**

Teaching Experience

Teaching Assistant

University of Idaho 2017, 2019-2023

WLF 492: Wildlife Management

FOR 526: Fire Ecology

WLF 448: Population Ecology

NRS 472/572: Remote Sensing of the Environment

WLF 315: Wildlife Laboratory Techniques

NRS 235: Society and Natural Resources

Instructor

University of Idaho 2021, 2022

WLF 220: Principles of Ecology

WLF 404: Red Squirrel Habitat Sampling

Metropolitan Community College, Omaha, NE, 2018-2019

BIOL 1010: General Biology

BIOL 1010L: General Biology Lab

Field Instructor

McCall Outdoor Science School, University of Idaho 2016 – 2017

K-12 Residential and Outreach Programs

PATH International Therapeutic Riding Instructor/Specialty Programs Coordinator

Heartland Equine Therapeutic Riding Academy, NE, 2013 – 2016, 2018 – 2019

Adaptive Riding Lessons

Public Riding Lessons

Life Skills Vocational Training Program

Miniature Horse On-site Learning Program

Therapeutic Carriage Driving Events

Undergraduate Senior Theses Mentored

Sarah Burgett, B.S., University of Idaho

Cory Allred, B.S., University of Idaho

Presentations (*mentored undergraduate students)

Stein, R.M., Lecigne, B., Johnson, T.R., Eitel, J.U.H., Rachlow, J.L. 2023. Integrating data on sensory cues in mammalian habitat ecology. Joint meeting of *The International Mammalogical Congress* and *The American Society of Mammalogists*. Anchorage, AK, USA.

Stein, R.M. 2023. Seeing is surviving: How habitat structure influences access to visual information and predator avoidance. *Idaho State Three Minutes Thesis Competition*. Boise, ID, USA.

Stein, R.M. 2022. Seeing is surviving: How habitat structure influences access to visual information and predator avoidance. *University of Idaho Three Minutes Thesis Competition*. Moscow, ID, USA. (Third Place).

Stein, R.M., Lecigne, B., Johnson, T.R., Eitel, J.U.H., Rachlow, J.L. 2022. Security at multiple scales: Do concealment and visibility both influence selection of habitat by a leporid? *The American Society of Mammalogists*. Tucson, AZ, USA.

Stein, R.M., Eitel, K., Rachlow, J.L. 2022. Experiential learning in three dimensions: Introducing lidar remote sensing to natural resource students. *Conference on University Education in Natural Resources*. Virtual.

*Burgett, S., **Stein, R.M.**, Rachlow, J.L. 2022. Unexpected properties influenced by an ecosystem engineer: Preliminary findings. *Idaho Chapter of the Wildlife Society*. Virtual.

Stein, R.M., Eitel, K., Gilliam, K., Rachlow, J.L. 2022. Measuring wildlife habitat: A case study on the efficacy of an experiential learning course for undergraduates. *Idaho Chapter of the Wildlife Society*. Virtual.

*Burgett, S., **Stein, R.M.**, Rachlow, J.L. 2021. Unexpected properties of habitat altered by an ecosystem engineer: A pygmy rabbit case study. *Idaho Conference of Undergraduate Research*. Virtual.

Stein, R.M., Rachlow, J.L. 2021. The role of acoustics in the behavior and ecology of Terrestrial mammals: A systematic review. *The American Society of Mammalogists*. Virtual.

*Allred, C., **Stein, R.M.**, Lecigne, B., Eitel, J.U.H., Rachlow, J.L. 2021. Going from 2- to 3- dimensional data for estimating visibility: Exploring viewsheds as a property of wildlife habitat. *Idaho Chapter of the Wildlife Society*. Virtual.

Stein, R.M., Rachlow, J.L., Lecigne, B., Eitel, J.U.H., Johnson, T., McGowan, C. 2021. Structure and perspective: How viewsheds are affected by individual position in diverse habitats. *Idaho Chapter of the Wildlife Society*. Virtual.

Stein, R.M., Rachlow, J.L. 2020. A review of the role of acoustics in the behavior and ecology of terrestrial mammals. *Idaho Chapter of the Wildlife Society*. Moscow, ID, USA.

Professional Memberships

The American Society of Mammalogists

The Wildlife Society

Professional Association of Therapeutic Horsemanship International

Professional Service

Committee Member, Inclusivity, Diversity, Equity, and Anti-bias Committee, *The American Society of Mammalogists (2023–Present)*

Committee Member, Honoraria and Travel Awards Committee, *The American Society of Mammalogists (2023–Present)*

Book Reviewer, Exploring Animal Behavior Through Sound: Volume 2, Chapter 8 Terrestrial Mammals, *Editor: Christine Erbe, Springer Link (2023)*

Reviewer, *Zoological Research (2023)*

Graduate Student Representative, College of Natural Resources Diversity and Inclusion Committee, *University of Idaho (2021-2022)*

Committee Member, Fish and Wildlife Film Festival Committee, *University of Idaho (2020-2023)*

Personal Interests

Horse Riding, Hiking, Baking, Wildlife and Landscape Photography