CARSON P. HEDBERG

Institute at Brown for Environment and Society | Dept. of Ecology, Evolution, and Organismal Biology

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1. Education

**Ph.D. University of New Mexico,** Albuquerque, NM **August 2018 - May 2025**

Department of Biology

Primary Advisor: Dr. Felisa Smith

Graduated with distinction

**M.S.** **University of New Mexico**, Albuquerque, NM **August 2018 - May 2021**

Department of Biology

Primary Advisor: Dr. Felisa Smith

**B.A. Vanderbilt University,** Nashville, TN **August 2012 - May 2016** College of Arts and Sciences

Major: Earth and Environmental Science; Minor: Environmental Studies

GPA: 3.8, *cum laude* and major honor

1. academic positions

**Postdoctoral Research Associate**, Institute at Brown for Environment and Society **2025 – 2026**

Brown University, Providence, RI

**NSF Postdoctoral Fellow**, Office of Polar Programs **2025 – 2026**

Brown University, Providence, RI

**Student Experience Project Graduate Fellow,** Center for Teaching and Learning **2023 – 2024**

University of New Mexico, Albuquerque, NM

**Teaching Assistant,** Biology Department **2020 – 2024** University of New Mexico, Albuquerque, NM

Courses: *Molecules to Cells, Genetics, Ecology and Evolution,*

*Anatomy and Physiology*

**Research Assistant**, Biology Department **2022 – 2023**

University of New Mexico, Albuquerque, NM

Supervisor: Dr. Felisa Smith

**NSF Graduate Research Fellow**, National Science Foundation **2018 – 2022**

University of New Mexico, Albuquerque, NM

**Teaching Assistant**, Earth and Environmental Science Department **2014 – 2015**

Vanderbilt University, Nashville, TN

Courses: *Life through Time, Earth Systems through Time*

1. Fellowships & Grants

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| --- | --- | --- |
| 2024 | National Science Foundation, *Postdoctoral Research Fellowship* | $335, 777 |
| 2024 | American Society of Mammalogists, *ASM Fellowship* | $20,000 |
| 2023 | University of New Mexico, *Student Conference Grant* | $600 |
| 2023 | UNM Biology Department, *Joseph Gaudin Grant* | $2,150 |
| 2023 | American Society of Mammalogists, *Student Travel Grant* | $600 |
| 2022 | UNM Graduate Student Association, *New Mexico Research Grant* | $5,000 |
| 2022 | American Society of Mammalogists, *Grant-in-aid of Research* | $1,500 |
| 2022 | UNM Graduate Studies, *Doctoral Conference Presentation Grant* | $1,200 |
| 2022 | Turner Enterprises, Inc., *Research Grant* | $9,630 |
| 2022 | Sevilleta LTER, *Summer Research Fellowship* | $4,000 |
| 2022 | UNM Biology Department, *Joseph Gaudin Grant* | $3,500 |
| 2022 | UNM Graduate Student Association, *Student Research Grant* | $500 |
| 2022 | Biology Graduate Student Association, *Research Grant* | $560 |
| 2021 | Sevilleta LTER, *Summer Research Fellowship* | $4,000 |
| 2021 | UNM Biology Department, *Joseph Gaudin Grant* | $3,000 |
| 2021 | UNM Biology Department, *Summer Research Grant* | $1,000 |
| 2021 | Biology Graduate Student Association, *Research Grant* | $300 |
| 2020 | University of New Mexico, *Research Coaching Fellowship* | $2,000 |
| 2019 | International Biogeography Society, *Student Travel Grant* | $220 |
| 2018 | National Science Foundation, *Graduate Research Fellowship* | $138,000 |

1. Awards & honors

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| 2021 | CPEG, *Graduate Student Presentation Award, 1st place* | $675 |
| 2021 | American Society of Mammalogists, *A. Brazier Howell Honoraria* | $2,000 |
| 2019 | Paleontology Society,*Graduate Student Poster Award, 2nd place* | $450 |

1. Publications
2. **Hedberg, C. P.**, & Smith, F. A. (2025). Unraveling the role of environmental and anthropogenic drivers in shaping global patterns in mammal diversity. *Ecography, e07674.*
3. Smith, F., Elliott Smith, E., **Hedberg, C. P.**, Lyons, S., Pardi, M., & Tomé, C. (2023). After the mammoths: The ecological legacy of late Pleistocene megafauna extinctions. *Cambridge Prisms: Extinction*, 1-55.
4. **Hedberg, C. P.,** Lyons, S. K., & Smith, F. A. (2021). The hidden legacy of megafaunal extinction: Loss of functional diversity and resilience over the Late Quaternary at Hall’s Cave. *Global Ecology and Biogeography*, 31, 294-307.
5. **Hedberg, C. P.**, & DeSantis, L. R. G. (2017). Dental microwear texture analysis of extant koalas: clarifying causal agents of microwear. *Journal of Zoology*, *301*(3), 206-214.
6. DeSantis, L. R. G., & **Hedberg, C. P.** (2017). Stable isotope ecology of the koala (*Phascolarctos cinereus*). *Australian Journal of Zoology*, *64* (5), 353-359.

In Preparation

1. **Hedberg, C. P**., Kartzinel, T. R., Littleford-Colquhoun, B., Spencer, S., & Smith, F. A. *In Prep*. Do oryx fit in? An unintentional test case of ungulate rewilding in New Mexico.
2. Presentations

Invited talks

1. **Hedberg, C. P.**, “Bridging paleo- and conservation ecology: A case study in the Southwestern US”. June 2025. American Society of Mammalogists Annual Meeting. West Lafayette, IN.

Oral Presentations

1. **Hedberg, C. P.**, T. R. Kartzinel, F. A.Smith, “Seasonal resource use and dietary partitioning in a novel ungulate community”. June 2024. American Society of Mammalogists Annual Meeting. Boulder, CO.
2. **Hedberg, C.** **P.,** “How do oryx fit in? Exploring mammalian biodiversity change in the Western US from the Pleistocene to the Present.” November 2023. Brown Bag Seminar Series. Department of Biology, University of New Mexico. Albuquerque, NM.
3. **Hedberg, C.**, T. R. Kartzinel, F. A.Smith, “Do Oryx fit in? Untangling dietary dynamics of a novel ungulate community in New Mexico.” July 2023. American Society of Mammalogists Annual Meeting. Anchorage, AK.
4. **Hedberg, C.**,S. K. Lyons, F. A. Smith, “Know thy neighbor: Unpacking patterns in mammal functional and phylogenetic diversity in the Anthropocene.” June 2022. American Society of Mammalogists Annual Meeting. Tucson, AZ.
5. **Hedberg, C.**,S. K. Lyons, F. A.Smith, “Know thy neighbor: Unpacking patterns in mammal functional and phylogenetic diversity in the Anthropocene.” June 2022. International Biogeography Society Biennial Conference. Vancouver, BC.
6. **Hedberg, C.**,F. A. Smith, “Know thy neighbor: Unpacking functional and phylogenetic diversity gradients in the Anthropocene.” October 2021. International Biogeography Society Early Career Biogeographers Conference (virtual).
7. **Hedberg, C.**,S. K. Lyons, F. A. Smith, “The hidden legacy of megafaunal extinction: Functional diversity and ecosystem resilience loss over the Late Quaternary.” September 2021. 2nd Crossing the Paleontological Ecological Gap Conference (virtual).
8. **Hedberg, C.**,S. K. Lyons, F. A. Smith, “The hidden legacy of megafaunal extinction: Functional diversity and ecosystem resilience loss over the Late Quaternary.” June 2021. American Society of Mammalogists Annual Meeting (virtual).
9. **Hedberg, C.**,S. K. Lyons, F. A. Smith, “The hidden legacy of megafaunal extinction: A fine-scale examination of functional diversity over the Late Quaternary.” October 2020. Society for Vertebrate Paleontology Annual Meeting (virtual).
10. **Hedberg, C**., L. R. G. DeSantis, “Clarifying causal agents of dental microwear formation as revealed by koalas.” October 2016. Society for Vertebrate Paleontology Annual Meeting, Salt Lake City, UT

Poster Presentations

1. **Hedberg, C**., Smith, F. A. “Functional Diversity Loss at the Terminal Pleistocene Extinction: A Site- Specific Analysis”. September 2019. Geological Society of America Annual Meeting, Phoenix, AZ
2. DeSantis, L., Yann, L., **Hedberg, C**., DeSantis, S. “Girls like dinosaurs too! Ways to better engage girls in paleontology.” October 2016. Society for Vertebrate Paleontology Annual Meeting, Salt Lake City, UT
3. **Hedberg, C**., Morgan, D.J., Cox, J., Balco, G., Putkonen, J., Bibby, T. “Further Investigations of Cosmogenic Ne-21 Exposure Ages of Glacial Boulders Constrained by Local Bedrock Erosion Rates in Ong Valley, Antarctica.” December 2014. American Geophysical Union Fall Meeting, San Francisco, CA
4. research experience

**Postdoctoral Research,** Biology **January 2025 - present**

Brown University, Providence, RI

Advisors: Tyler Kartzinel and Joshua Miller

* Coordinated international research collaboration among academic, Canadian government agency, and First Nation community partners
* Organized field collection and storage of remote alpine ice samples containing cryogenically preserved Holocene-age organics (e.g., dung, pollen, wood) for paleobiology and paleoclimatology research
* Characterized changes in the dietary ecology of caribou (*Rangifer tarandus caribou*) across the Holocene using fecal DNA metabarcoding and stable isotope analysis
* Analyzed caribou (*Rangifer tarandus caribou*) summer range requirements and use of climatically threatened ice patch features using 10+ years of GPS collar data

**Graduate Research,** Biology **August 2018- December 2024**

University of New Mexico, Albuquerque, NM

Advisor: Felisa Smith ([website](https://biology.unm.edu/fasmith/))

Examined the ecological role of introduced *Oryx gazella*

Characterized dietary ecology of ungulate communities in New Mexico using fecal DNA metabarcoding

* Analyzed global functional and phylogenetic diversity in modern mammals to identify environmental and anthropogenic drivers of biodiversity patterns
* Modeled changes in mammal functional diversity over the Late Quaternary to investigate the ecological effects of prolonged biodiversity erosion and the implications for modern ecosystems
* Assisted with collaborative research quantifying the ecological effects of megafaunal extinction via stable isotope analysis, ecomorphology, and community composition

**Undergraduate Research,** Earth and Environmental Science **August 2014- May 2016**

Vanderbilt University, Nashville, TN

Advisor: Larisa DeSantis ([website](https://sites.google.com/site/larisadesantisdreamlab/))

* Examined modern koala teeth using dental microwear texture analysis as an indication of diet and a proxy for surrounding environmental conditions, applied findings to paleodiet reconstruction
* Prepared samples of enamel for stable isotope analysis
* Completed an honors thesis documenting research methods and results, presented at the *Society of Vertebrate Paleontology* and published in the *Journal of Zoology*

**Undergraduate Research,** Earth and Environmental Science  **January 2013-December 2013**

Vanderbilt University, Nashville, TN

Advisor: Daniel Morgan ([website](https://my.vanderbilt.edu/danmorgan/))

* Assessed the surface exposure of Antarctic rock samples using the accumulation of cosmogenic nuclides to track glacial recession
* Presented research findings at *American Geophysical Union* poster session in December 2014

1. pedagogy and mentorship

**Student Experience Project Graduate Fellow June 2023- December 2023**

Center for Teaching and Learning

University of New Mexico, Albuquerque, NM

* Designed and facilitated semester long training series in evidence-based inclusive teaching practices for graduate teaching assistants in Biology department
* Collaborated with multi-institution working group to develop and adapt online training materials and resources for graduate teaching assistants as part of the Student Experience Project
* Presented training outcomes to stakeholder groups and educational conferences
* Facilitated graduate-led equity improvement projects within the Biology department

**Research Experience for Undergraduates (REU) Mentor June 2022- May 2023**

Sevilleta Long Term Ecological Research Site, Socorro, NM

* Mentored undergraduate student in self-directed summer research project involving field work, stable isotope analysis, and fecal DNA metabarcoding
* Trained mentee in field and laboratory methods, data analysis, and scientific writing
* Continued to serve as primary mentor for mentee’s undergraduate honors thesis project, student defended and graduated in spring 2023

**Research Coaching Fellowship January 2020- December 2020**

University of New Mexico, Albuquerque, NM

* Participated in weekly workshops on research coaching techniques, academic mentorship, and pedagogy
* Developed curriculum for teaching research practices and relevant skills to undergraduate students
* Taught 4-month seminar series to undergraduate mentees on conducting research in STEM
* Mentored two undergraduate students in ongoing research projects

**Graduate Teaching Certificate December 2024**

University of New Mexico, Albuquerque, NM

Courses and workshops:

*College Teaching Seminar* Spring 2023

*Intro to Transparent Assignment Design* November 2022

*Language and Inclusivity in the Classroom* December 2021

*Tools for Feedback and Success* October 2020

*Graduate Teaching I* Fall 2020

1. Other Professional experience

**Seasonal Interpretive Ranger December 2017 – May 2018**

Junior Ranger Program Office

Tennessee State Parks, Nashville, TN

* Presented educational programs on Tennessee wildlife, outdoor safety, natural history, and sustainability at state park events and schools across Tennessee

**Educational Program Manager November 2016 – November 2017**

AmeriCorps VISTA

Urban Green Lab, Nashville, TN

* Coordinated and facilitated mobile sustainability classroom visits to schools, businesses, and community events
* Designed curriculum to teach sustainability and environmental science to K-12 students
* Managed a volunteer base of 50+ individuals and 6 part-time interns
* Measured and evaluated impact of all outreach programs and found creative, engaging ways to present impact to stakeholders

**Interpretation Specialist June 2016 – August 2016**

Geoscientists-in-the-Park

Fossil Butte National Monument, Kemmerer, WY

* Interpreted geological and paleontological significance of site to visitors
* Developed and delivered weekly educational programs to visitor and youth groups, guided tours of visitor center exhibit and educational trails
* Demonstrated excavation of fossils from active quarry and preparation of fossil specimens for display

1. service and outreach

Professional Service

Elected Board Member, *American Society of Mammalogists* Summer 2023- present

Honoraria and Travel Award Committee, *American Society of Mammalogists* Fall 2021- present

Education and Outreach Committee, *Paleontology Society* Spring 2021- Fall 2024

Grant reviewer, *UNM Biology Graduate Student Association* Fall 2018- Fall 2024

Community Service & Outreach

Contributor and editor, *UNM BioBlog* Fall 2018- Fall 2024

Guest science educator, *Menaul School* March 2020

Geoscience collections volunteer, *New Mexico Museum of Natural History* June 2019- March 2020

Exhibit volunteer, *New Mexico Museum of Natural History* March 2019- June 2019

STEM career representative, *TWISTER conference for high school girls* Spring 2016

Public educator, *Fossils at the Fort outreach event* Spring 2013, Spring 2014

Society memberships

American Society of Mammologists, Geological Society of America, International Biogeography Society, Paleontological Society, Society of Vertebrate Paleontology