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## EDUCATION

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<b>University of Montana</b> , Missoula, MT	August 2022 – May 2025
Masters of Science in Wildlife Biology	4.0 GPA
Co-advised by Dr. Michael Schwartz and Dr. Joshua Millspaugh	
<i>Occupancy Sampling Design and Probability of Use for Mesocarnivore Species</i>	
<b>Drake University</b> , Des Moines, IA	January 2010 – December 2011
Graduated Magna Cum Laude	3.71 GPA
Bachelor of Science in Zoology, minor in Environmental Science	
<b>Kansas State University</b> , Manhattan, KS	August 2008 – December 2009
Transferred to Drake University	3.62 GPA

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## RESEARCH EXPERIENCE

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### Publications:

- Tucker, J.M., **Heiman, J.L.**, Golding, J., Barry, B., Moriarty, K., 2026. How to avoid the camera trap: the effect of camera settings on occupancy analysis and photo data workload. Stacks Journal: 26003. <https://doi.org/10.60102/stacks-26003>
- **Heiman, J.L.**, Tucker, J.M., Sells, S.N., Millspaugh, J.J., Schwartz, M.K., 2024. Leveraging local wildlife surveys for robust occupancy trend estimation. Ecological Indicators 169. <https://doi.org/j.ecolind.2024.112863>
- Devarajan, K., Fidino, M., Farris, Z.J., ...**Heiman, J.**, ...A., Zellmer, A.J., Gerber, B.D., 2025. When the wild things are: Defining mammalian diel activity and plasticity. Science Advances 11, eado3843. <https://doi.org/10.1126/sciadv.ado3843>
- **Oral presentation and published abstract:**
- **Heiman, J.**, Tucker, J., Sells, S., Millspaugh, J., Schwartz, J., and Forrester, T. 2025. Evidence of Niche Separation Between Red Foxes and Coyotes in the US Rocky Mountains. Oral presentation at the 2025 Annual Conference of The Wildlife Society; 2025 Oct; Edmonton, Alberta
- **Heiman, J.**, Tucker, J., Sells, S., Schwartz, M., and Millspaugh, J. 2023. Optimizing local surveys for broad-scale wildlife population monitoring. Oral presentation at the 2023 Annual Conference of The Wildlife Society; 2023 Nov 7; Louisville, KY
- **Heiman, J.**, Thompson, C., Nichols, B., Gese, E., and Purcell, K. 2017. Lion prey selection in the Sierra National Forest; influence of forest management and implications for mesocarnivores. Oral presentation at the 2017 Annual Meeting of the Society for Northwestern Biology Conference; 2017 Feb 28; Blue Lake, CA

### Poster Presentation:

- **Heiman, J.** and Christensen, D. 2011. Development of a Thermocouple Device to Measure Zebra Finch Nest Temperature During Incubation. Poster presented at the 8<sup>th</sup> annual Drake University Conference on Undergraduate Research in the Sciences; 2011 Apr 13; Des Moines, IA

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## PROFESSIONAL AND FIELD EXPERIENCE

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<b>Multiregional Multispecies</b>	December 2020 – Present
<b>Mesocarnivore Monitoring</b> , USFS Rocky Mountain Research Station	Jody Tucker
Missoula, MT	Principal Investigator
Full-Time, 40 hour/week	Available as reference
<b>Research Associate/Data Manager</b>	(406)880-7725
• Lead development of scalable, cross-agency database systems and data ecosystems to support broad-scale wildlife monitoring across multiple USFS regions	
• Design and implement R and Python based tools for automated data ingestion, cleaning, analysis, and reporting, improving efficiency and reproducibility of monitoring workflows	
• Create species-specific GIS-based sampling maps to guide field efforts across National Forests, integrating spatial data with ESRI ArcGIS Online platforms	

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**PROFESSIONAL AND FIELD EXPERIENCE (CONTINUED)**

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**Multiregional Multispecies Mesocarnivore Monitoring (continued)**

- Collaborate with national and regional USFS carnivore program leaders to design scientifically robust monitoring plans for mesocarnivores, including wolverine (*Gulo gulo*), fisher (*Pekania pennanti*), lynx (*Lynx canadensis*), montane red fox (*Vulpes vulpes sp.*), and marten (*Martes sp.*)
- Assist in statistical power analyses and development of general frameworks for occupancy and trend estimation across large landscapes
- Lead preparation of monitoring protocol documents detailing field data collection, data management, and reporting standards
- Coordinate with regional biologists, forest managers, and research partners to ensure interoperability and scientific rigor in monitoring efforts

**Best Friends Animal Hospital, Grace Veterinary Inc.**

Great Falls, MT

Full-Time, 40 hour/week

**Veterinary Technician**

- Provided medical care and emergency triage for domestic animals
- Trained and supervised assistants and supported surgical procedures

June 2020 – August 2022

Amanda Norton – Practice Manager

Available as reference

(406)453-2200

**Multispecies Mesocarnivore**

**Monitoring Program, University of Montana**

West Yellowstone, MT

Full-Time, 40 hour/week

**Multispecies Mesocarnivore Monitoring Technician**

- Conduct snow track surveys of wolverine (*Gulo gulo*), fisher (*Pekania pennanti*), lynx (*Lynx canadensis*), montane red fox (*Vulpes vulpes sp.*), and marten (*Martes caurina*, *Martes americana*)
- Collect eDNA snow track samples
- Backtrack target species and collect traditional DNA samples from scat, urine, and hair
- Ensure quality standards for non-invasive samples
- Safely use, maintain, and transport snowmobiles

January 2020 – April 2020

Jessie Golding – Principal Investigator

Available as reference

(858)442-9878

**Siskiyou Deer and Puma Project, University of California**

Mt. Shasta, CA

Full-Time, 40 hour/week

**Junior Specialist**

- Visit potential kill sites from mountain lions (*Puma concolor*) fitted with GPS-enabled collars
- Assist with capturing and collaring mountain lions using both trained hounds and cage traps
- Deploy and retrieve motion-triggered cameras at fresh mountain lion kill, fawn capture sites and at camera grid cell locations
- Conduct captures of black tail deer fawns (*Odocoileus hemionus*)
- Assist with captures of adult female black tail deer conducted by the California Department of Fish and Wildlife
- Conduct radio telemetry to monitor radio-collared fawns and does
- Locate and thoroughly investigate mortalities of any collared deer to determine the cause of death
- Conduct extensive vegetation surveys at deer mortality sites, and throughout the study area
- Train ten interns for, and conduct deer pellet surveys
- Use Collector for ArcGIS application to collect data while in the field
- Safely navigate in challenging terrain and weather using a handheld GPS unit, a compass, and maps

May 2018 – December 2019

Heiko Wittmer – Principal Investigator

Available as reference

+64 44637432

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**PROFESSIONAL AND FIELD EXPERIENCE (CONTINUED)**

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**National Park Service**

Yosemite National Park, CA  
Full-Time, 40 hour/week

**Terrestrial Biologist**

- Assist in the development of mountain lion research plans
- Organize and lead targeted capture efforts for Pacific fisher (*Pekania pennanti*)
- Develop, manage, and organize trail camera databases from multiple projects for later analysis
- Monitor trail cameras used for wildlife surveys
- Assist wildlife crews during feather searches and owl surveys
- Write and finalize project reports

July 2017 – April 2018  
Sarah Stock – Park Biologist  
Available as reference  
(209)379-1435

**Integral Ecology Research Center**

Blue Lake, CA  
Full-Time, 40 hour/week

**Ecological Technician**

- Assist in the development of a mountain lion research database
- Assist with clean-up of illegal marijuana grow sites
- Conduct small rodent trapping as needed
- Work with Yosemite National Park and Sierra National Forest through a cooperative agreement

July 2017 – April 2018  
Greta Wengert - Founder  
Available as reference  
(707)845-7848

**Kings River Fisher Project, United States Forest Service**

Sierra National Forest, Shaver Lake, CA  
Full-Time, 40 hour/week

**Fisher Field Technician**

**Mountain Lion Field Technician**

- Manage day-to-day operations for a crew of 2
- Visit potential kill sites from mountain lions fitted with GPS-enabled collars
- Set baited trail cameras and assist with mountain lion captures using box traps
- Organize and carry out mountain lion captures with trained hounds
- Design, build, and maintain mountain lion research Microsoft Access database, datasheets, and ArcGIS maps for daily use by the project
- Assist in coordination with the California Department of Fish and Wildlife to share data and resources
- Train and oversee California Department of Fish and Wildlife scientific aides and other project volunteers in visiting potential kill sites
- Conduct radio telemetry, both ground and aerial, for radio-collared fishers
- Locate and monitor fisher den and rest sites by the use of trail cameras and ground telemetry
- Set and check box traps daily during winter months for fishers
- Assist with processing captured fishers
- Conduct vegetation surveys around fisher rest, den, and mortality sites

April 2014 – October 2017  
Craig Thompson – Principal Investigator  
Available as reference  
(406)552-7937

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**SKILLS AND EXPERIENCE**

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**Technical Skills:**

- Strong computer skills, in-depth knowledge of R programming, R Shiny, JAGS, C++, SQL, Arcade, Bayesian modeling, Windows, Macintosh, Linux, ArcGIS, ESRI Online Applications, Access, Adobe, Presence, LOAS, GPS Plus X, CPW Photo Warehouse and Google Earth Engine
- Use of GPS products and phone apps such as Garmin handhelds, Trimble Juno S Series, CalTopo, Avenza Maps, FieldMaps, Survey123, and CyberTracker for multiple jobs and recreational use
- Excellent verbal skills, presenting to and educating the general public
- Knowledge of Montana, Midwestern, Sierra Nevada, and Northern California flora, both native and invasive
- Animal care and handling of over 55 species

## SKILLS AND EXPERIENCE *(CONTINUED)*

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### Field Research Skills:

- Trapping experience for small carnivores, mountain lions, ungulates, and small mammals, including cage trapping, hound captures, hand captures, darting, and Sherman traps
- Familiarity with both GPS and VHF wildlife collars, including those made by Vectronics, Holohil, and SirTrack
- Ground telemetry and aerial telemetry from a small plane
- Familiarity driving 4WD vehicles, both manual and automatic transmissions, in various hazardous conditions
- Experience working within and near illegal marijuana grow sites on public land
- Familiarity with navigating and working in rugged and remote terrain with adverse weather conditions
- Basic mechanical skills, including changing flat tires
- Camping and hiking for 15+ years

### Other Experience:

- Develop and led R programming workshop for incoming graduate students, August 2023, 2024
- Lead University of Montana Wildlife Biology R Users Group for students, 2023
- Co-led student initiative for training to prevent harassment and improve inclusion at field sites and in wildlife biology, 2022 – Present
- Invited Guest Speaker Committee Member 2023-2024
- Wildlife Biology Graduate Seminar Coordinator Spring 2023

## CERTIFICATIONS

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USFS Snowmobile Training – Completed January 2020  
American Heart Association CPR/AED Certification – Completed January 2020  
National Safety Council Defensive Driving 8-hour course – Completed December 2019  
First Aid Web/National Health and Safety First Aid course – Completed December 2019  
American Avalanche Association Level 1 Avalanche course – Completed March 2019  
US Forest Service Driver License - Received January 2017, still current  
ATV Safety Institute Rider Course - Completed December 2014  
Basic Aviation Safety, A-100 US Forest Service Course – Completed July 2014

## AFFILIATIONS, HONORS, AND AWARDS

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The Wildlife Society, Member, 2013 – Present  
TWS Biometrics Working Group Member, 2023 – Present  
TWS Biometrics Working Group Graduate Student Special Committee, Member, 2023 – Present, Co-Chair 2025-Present  
TWS Biometrics Working Group Student Excellence Award, 2026  
Successful completion of 1700-hour AmeriCorps term of service, December 2012

### Drake University:

Presidential Scholarship, 2010 – 2013  
Transfer Peer Mentor, Spring 2010 – Fall 2010  
Dean's List, Spring 2011  
President's List, Fall 2010, Fall 2011

**Senior Thesis:** Heiman, J. 2011. A Comparative Analysis of High Pathogenic and Low Pathogenic Avian Influenza A Protein Sequences. In collaboration with Dr. Heidi Sleister, Department of Biology, Drake University.

### Kansas State University

Foundation Scholarship, 2008-2012  
Semester Honors, Fall 2008

## REFERENCES

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### **Jody Tucker, PhD**

Relation: Supervisor  
Years known: 5  
Missoula, MT  
Deputy Director, Wildlife Ecology Program  
US Forest Service Rocky Mountain Research Station

(406)880-7725  
[jody.tucker@usda.gov](mailto:jody.tucker@usda.gov)

### **Michael Schwartz, PhD**

Relation: Masters Advisor  
Years known: 2  
Missoula, MT  
Director, National Genomics Center for Wildlife and Conservation  
Program Manager, Wildlife Ecology Program  
US Forest Service Rocky Mountain Research Station

(406)542-4161  
[michael.k.schwartz@usda.gov](mailto:michael.k.schwartz@usda.gov)

### **Josh Millspaugh, PhD**

Relation: Masters Advisor  
Years known: 2  
Syracuse, NY  
Boone and Crockett Professor of Wildlife Conservation  
University of Montana  
Campfire Conservation Fund Professor of Wildlife Conservation  
State University of New York College of Environmental Science and Forestry

(406)243-4989  
[joshua.millspaugh@esf.edu](mailto:joshua.millspaugh@esf.edu)

### **Craig Thompson, PhD**

Relation: Former Supervisor  
Years known: 9  
Vallejo, CA  
Region 5 Wildlife Ecologist  
US Forest Service

(406)452-7937  
[craig.thompson@usda.gov](mailto:craig.thompson@usda.gov)