

# Monica Cooper

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## Publications

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Gottshall, C. B., **M. Cooper**, and S.M. Emery. 2017. Activity, diversity and function of arbuscular mycorrhizae vary with changes in agricultural management intensity. *Agriculture, Ecosystems and Environment* 241: 142–149.

Ng, J., M. North, A. Arditti, **M. Cooper**, J. Lutz. 2020. Topographic variation in tree group and gap structure in Sierra Nevada mixed-conifer forests with active fire regimes. *Forest Ecology and Management* 472, 118220.

## Grants

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**NSF Graduate Research Fellowship Program (GRFP), Honorable Mention 2020**

**NSF Research Experience for Undergraduates (REU) 2013**

## Presentations

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Cooper, M., Pauli, J.N. Poster Presentation. Black bear population dynamics in the Bayfield Peninsula. 100<sup>th</sup> Annual Meeting of the American Society of Mammalogists. Virtual. June 15<sup>th</sup>, 2021.

Cooper, M., Pauli, J.N. Oral Presentation. Black bear population dynamics on the Red Cliff Reservation and the Apostle Islands National Lakeshore. University of Wisconsin-Madison Genetics Workshop. Madison, Wisconsin. February 28<sup>th</sup>, 2020.

Cooper, M., Emery, Sarah. Poster Presentation. Analysis of Bradford Reactive Soil Protein in Agronomic Treatments at the W.K. Kellogg Biological Station. Deibold Symposium. June 10<sup>th</sup>, 2014.  
<http://hdl.handle.net/10920/29301>

Cooper, M., Emery, Sarah. Poster Presentation. Analysis of Bradford Reactive Soil Protein in Agronomic Treatments at the W.K. Kellogg Biological Station. Kellogg Biological Station Symposium. August 25<sup>th</sup>, 2013.

Cooper, M., Oral Presentation. Techniques in Field Ecology. Conservation GIS class, Environmental Conservation Master's program, University of Wisconsin, Madison. May 5<sup>th</sup>, 2019.

## Education

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**University of Wisconsin, Madison, Master of Science, Forest and Wildlife Ecology** Madison, WI  
Jonathan Pauli, [jnpauli@wisc.edu](mailto:jnpauli@wisc.edu) | January 2020- present | *Expected defense May 2023*

- Research Assistantship, Wildlife Ecology

**Kalamazoo College, Bachelor of Arts, Biology** Kalamazoo, MI  
Graduated June 15, 2014

- Thesis: *Analysis of Bradford Reactive Soil Protein in Agronomic Treatments at the W.K. Kellogg Biological Station.* <http://hdl.handle.net/10920/29097>.
- Enlightened Leadership Award for Environmental Activism, 2010-2014.

August 2012 – February 2013

- Field research projects in the Galápagos Islands and Tiputini Biodiversity Station.

## Research Experience

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### Master of Science, Research Assistantship

Madison, WI

Advisor: Jonathan Pauli | January 2020- present

- *Non-invasive genetic capture-recapture study to determine the population dynamics including vital rates, connectivity, and population growth rate estimates of an archipelagic metapopulation of American black bears (*Ursus americanus*) in the Bayfield Peninsula of northern Wisconsin.*
- Deployed 68 “hair corrals” for capturing black bear genetic samples on 11 islands and the mainland; three summers of fieldwork.
- Collaborated with Apostle Islands National Lakeshore, Red Cliff band of Lake Superior Chippewa, and the Great Lakes Indian Fish and Wildlife Commission.
- Mentored one undergraduate student assisting with laboratory work and two summer field assistants.
- Conducted laboratory work including DNA extraction, polymerase chain reaction, and genotyping; statistical analyses using a robust design model; and parentage analysis and population structure analysis.

### Isle Royale Winter Study, Field Assistant

Isle Royale National Park, MI

March 2020

- *Study to determine American marten and Red fox occupancy along trail transects.*
- Collected marten and fox scat and trapped for martens, backcountry skied up to 14 miles per day.

### SUNY-ESF, Wolf Technician

Isle Royale National Park, MI

Jerrold Belant, [jbelant@esf.edu](mailto:jbelant@esf.edu) | Jul – Oct 2019 | 50 h/wk

- *Study to determine kill composition, movement, and behavior of wolves after re-introduction to Isle Royale.*
- Conducted GPS cluster surveys across the island, solo backpacking for up to 5 days, 20 miles per day.
- Collected hair, fecal, tissue, femur marrow, and teeth samples from moose and beaver predations, tracked wolf movement in cluster to locate bed sites and predation sites.

### University of California, Davis, Researcher

Yosemite National Park, CA

Jan Ng, (603) 205-5010, [jnyng@ucdavis.edu](mailto:jnyng@ucdavis.edu) | Jun – Sep 2014; Sep – Nov 2017; Sep 2018 – Sep 2019 | 10-40 h/wk

- *Investigated how tree spatial patterns and topography affect forest's fire resiliency. Conducted an Individuals, Clumps, and Openings (ICO) analysis to determine old growth forests' spatial patterns in relation to topography and burn severity.*
- Co-author on publication submitted to Forest Ecology and Management. Contributed to methodology, data collection, literature review, statistical analysis, figure creation, writing (wildlife implications), editing, and submission process.

### United States Geological Survey, Biological Science Technician GG 05

Lake Shasta, CA

Patrick Kleeman, (415) 243-6146, [pkleeman@usgs.gov](mailto:pkleeman@usgs.gov) | Mar – Jun 2019 | 40 h/wk

- *Pilot study to determine range of endemic salamander preceding dam raising.*
- Double visual encounter surveys for Shasta, Black, and Ensatina salamanders, Western, Dixie Valley, and Spadefoot toads; swabbing for *Batrachochytrium dendrobatidis* (Bd), pit tag insertion, VHF belt attachment, and radio telemetry.

### Siskiyou Deer and Puma Project, Field Technician

Mt. Shasta, CA

Bogdan Cristescu, (831) 999-0205, [bcristes@ucsc.edu](mailto:bcristes@ucsc.edu) | Jan – Mar 2019 | 60 h/wk

- *Determining population density, home range, migration, survival, sex ratio, and gut micro histology of mule and black tailed deer and puma impact on populations.*
- Puma GPS cluster surveys and mortality investigations; camera deployment at kill sites; backtracking, radio telemetry; fecal transect establishment, DNA collection, camera trap deployment.

**Wild Utah Project, Fall Ecological Intern**

Salt Lake City, UT

Janice Gardner, (801) 821-8569, [janice@wildutahproject.org](mailto:janice@wildutahproject.org) | Sep 2018 – Jan 2019 | 30 h/wk

- *Non-profit working in the intersection of conservation, research, management, and policy.*
- Collaborated with Utah State professor Tom Monaco to compile data for meta-analysis of pinyon-juniper removal effects on vegetation communities; assisted University of Utah Sekercioglu lab to enter data from the Wasatch Wildlife Study; beaver dam analog construction and grazing exclusion vegetation study.

**USFS Sierra Nevada Amphibian Monitoring Crew, GS 4 and 5 Research Tech**

Sonora, CA

Lucas Wilkinson, (209) 288-6322, [lwilkinson@fs.fed.us](mailto:lwilkinson@fs.fed.us) | Jun – Sep, 2017 and May – Aug, 2018 | 40 h/wk

- *Sierra Nevada-wide project monitoring of endangered *Rana sierrae* and threatened *Anaxyrus canorus*.*

**The Kluane Red Squirrel Project and the University of Michigan, Research Tech**

Yukon, Canada

Ben Dantzer, (734) 615-2352, [bdantzer@umich.edu](mailto:bdantzer@umich.edu) | Feb – Aug, 2015 | 60 h/wk

- *Project investigating maternal effects of gestational cortisol on pup emergence, survival, and dispersal. 25-year study documents maternal pedigree of squirrel population. Conducted independent research to compare territorial vocalizations of stressed and non-stressed squirrels.*
- Managed a mark recapture project of Red Squirrels; led summer research team, live-trapped, ear-tagged, and radio collared squirrels; performed toe bleeds, dissections, personality tests, and behavioral focals; collected fecal, hair, tissue, and blood samples; processed brain and blood samples.

**Columbia University, Research Tech**

Guánica, Puerto Rico

María Uriarte, (212) 854-1494, [mu2126@columbia.edu](mailto:mu2126@columbia.edu) | Sep – Dec, 2014 | 30 h/wk

- *Investigated the spatial response of dry forests to climate change and hurricanes.*
- Re-censused 4 ha dry forest plot, conducted data entry and management, identified over 50 tropical tree species.

**Research Experience for Undergraduates (REU), Researcher**

Louisville, KY

Sarah Emery, [sarah.emery@louisville.edu](mailto:sarah.emery@louisville.edu) | Jun – Aug, 2013 | 40 h/wk

- *Compared mycorrhizal fungal abundance in organic, traditional, and no-till agriculture treated soils.*
- Bradford reaction to analyze glomalin content in soil samples; co-authored publication and wrote senior thesis.

**Other Work Experience**

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**Elements Wilderness Program, Group Lead**

Huntington, UT

Louree Houstin, (402) 651-8404, [louree@elementswilderness.com](mailto:louree@elementswilderness.com) | Sep 2015 – Feb 2017; Jan – May 2018 | 40 h/wk*Wilderness therapy program that provides clinical therapeutic care to delinquent teenagers in a backcountry setting.*

- Led staff teams; designed and led student groups using Dialectical Behavioral Therapy and 7 Challenges drug rehabilitation curriculum; managed medical, safety, and backcountry logistics; coordinated treatment with therapists, doctors, and field director; presented weekly written and oral report to therapists and staff; assistant facilitator of climbing, slack lining, and repelling.

**Solace Crisis Treatment Center, Bilingual Family Advocacy Specialist**

Santa Fe, NM

María José Rodríguez Cádiz, (505) 690-2388, [mjrodcadiz@findsolace.org](mailto:mjrodcadiz@findsolace.org) | Mar – Jun, 2017 | 40 h/wk

- Provided advocacy services to victims of sexual and domestic violence in sexual assault nurse exams, court hearings, forensic interviews, and via crisis hotline in Spanish and English; managed client database.

**Kalamazoo College Composting, Head Composter**

Kalamazoo, MI

Rob Townsend, (269) 760-5054 | Apr 2013 – Jun 2014 | 30 h/wk

- Collaborated to design and launch campus-wide composting system; managed team of three student composters to run a campus-wide operation.

## Teaching

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### **Integrative Biology Teaching Assistantship, *University of Wisconsin***

Madison, WI

January 2021 – May 2022

- Teach 5 discussion sections of 25 students; proctor exams, grade, hold office hours, and assist in content and tests creation.

### **Ecology and Conservation, *Undergraduate Teaching Assistant***

Kalamazoo, MI

Binney Girdler, (269) 337-5977, [Binney.Girdler@kzoo.edu](mailto:Binney.Girdler@kzoo.edu) | Sep 2013 – Jun 2014 | 5 h/wk

- Facilitated labs, graded tests, and provided weekly office hours.

## Training

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**Medical:** *Wilderness First Responder, CPR, and First Aid (October 2019).* **Software:** *ArcGIS, RStudio, Microsoft Office.* **Language:** *Advanced Spanish and conversational Thai.* **Fun!** *Rock climbing, back country skiing, cross country skiing, trail running, hunting, backpacking, mandolin, cello, painting, fermenting, brewing, cooking.*