

Professor of Conservation Biology
Departments of Biology and Environmental Studies
Warren Wilson College
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EDUCATION

- 2007- 2013 Ph.D. - University of Colorado at Boulder**, Department: Ecology and Evolutionary Biology (EBIO)
Dissertation Research: *Climatic and habitat drivers of American pika (Ochotona princeps) occupancy and population density dynamics in the Southern Rocky Mountain Region*
Advisors: Drs. Robert Guralnick and Chris Ray
Additional Committee Members: Drs. Christy McCain, Andrew Martin, and Dan Doak
GPA: 4.0
- 2004 B.A. - Colorado College**, Colorado Springs, CO
Biology Major, French Minor; *Magna cum Laude*
GPA: Overall 3.94, Biology 3.97
Honors Thesis: *Climatic drivers of wildfire regimes in northern Idaho*
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TEACHING EXPERIENCE

- 2015- present Assistant Professor of Conservation Biology**
Departments of Biology and Environmental Studies
Warren Wilson College
- Courses Taught: Ecology, General Biology, Conservation and Wildlife Biology, Perspectives in Environmental Studies, Mountain Systems Conservation
 - Undergraduate research advisor for projects investigating Appalachian cottontails, red squirrels, and Allegheny woodrats
- 2014- 2015 Visiting Lecturer, Department of Organismal Biology and Ecology**
Colorado College
- Courses Taught: Ecology, Biology of Animals (Zoology), Mammalogy
- 2013- 2014 Lecturer in Biology, Department of Natural and Environmental Sciences**
Western State Colorado University
- Courses Taught: Environmental Biology lecture and lab, Science of Sustainability and Resilience, Climate Change Ecology Seminar, Mammalogy, Diversity and Patterns of Life lab
 - Advisor to the WSCU Wildlife Society Student Chapter
- 2013 Principles of Ecology Lab Coordinator, EBIO Department**
University of Colorado at Boulder
- Developed curriculum, organize lab and field activities

2012 & Instructor, General Biology I, EBIO Department

- 2013 University of Colorado at Boulder
- Lecture instructor for general biology summer course

2012 Genetics Teaching Assistant, EBIO Department

- University of Colorado at Boulder
- Led Genetics: Molecules to Populations recitations

2011- Lead Graduate Teacher, EBIO Department and Graduate Teacher Program

- 2012 University of Colorado at Boulder
- Provided training, guidance, and support to graduate teachers in the EBIO Department

Ecology Teaching Assistant, EBIO Department

- University of Colorado at Boulder
- Principles of Ecology lab instruction

2011 Pedagogy Instructor, EBIO Department

- University of Colorado at Boulder
- Co-taught a graduate student course in science-specific teaching techniques

2009- Science Squad Member, Biological Sciences Initiative

- 2010 University of Colorado, Boulder, CO
- Taught ecology and evolution workshops to K-12 students in the greater Denver area

2007- General Biology Teaching Assistant, EBIO Department

- 2009 University of Colorado, Boulder
- General Biology I & II lab instruction

K-12 Teacher Training:

2010- Outreach Workshop Instructor, Biological Sciences Initiative

- 2016 University of Colorado at Boulder
- Developed curriculum for, co-organized, and led full day workshops for K-12 teachers
 - 2016: “Life in the City: Understanding Urban Wildlife Using Camera Trap Technology”
 - 2015: “Natural Selection in a Changing World: Using real data to explore adaptation in native bees and pikas”
 - 2012: “From the Field: Connecting Scientists and K-12 through Web-Based Technologies”
 - 2010 & 2011: “Webs of Life: Food Webs and Trophic Cascades”
 - 2010: “Conservation and Applied Ecology: A Walk in the Shoes of Modern Wildlife Ecologists”

MENTORSHIP

Undergraduate Theses Advised

Scheduled for 2017: Warren Wilson College

Briana Dowling, “Ecological Niche Modeling of *Sylvilagus obscurus* in the Pisgah National Forest”

Chad Fierros, “Caching and Scatter-Hoarding of the North American Red Squirrel (*Tamiasciurus hudsonicus*), Behavior and Ecological Implications in North Carolina Forests”

Scott Kreeger, “The Impact of Human Recreation on the Allegheny Woodrat (*Neotoma magister*) in Western North Carolina”

Niels Wilson, “Rare and Elusive: Analyzing the Abundance and Distribution of the Appalachian Cottontail (*Sylvilagus obscurus*) in Western North Carolina”

Brian Wuertz, “Finding the Eastern Spotted Skunk: Evaluating a Paired Hair Snare and Field Camera Method for Surveying Populations of Eastern Spotted Skunks”

2016 Warren Wilson College

Alison Blount, “Vocalization Interpretation: A Study Engaging the Sounds and Stimuli of *Tamiasciurus hudsonicus*”

Alisha Weaver, “Distribution and Habitat Preferences of the Appalachian Cottontail (*Sylvilagus obscurus*) in Western North Carolina”

2010 University of Colorado-Boulder

Justine Smith, “Patterns of Selective Caching Behavior in the American Pika (*Ochotona princeps*)”

Undergraduate Thesis Committee Member: Warren Wilson College

2016	Jack Canter	Caroline Franklin	Sydney Grange	Maya Heubner
	Lyn Howe	Stephanie Menjivar	Erin Moore	McKenna Mullis
	Hope Smith	Olivia Smith	Emma Sullivan	Oscar Thompson
	Harris Wagner			

2015 Andrea LaPlante Sean Keuroghlian-Eaton

Graduate Thesis Committee Member

2016 Kelsey Robson, Idaho State University, “Digital Rocky Mountain Biological Laboratory: An Ecology-based Teaching Module”

PUBLICATIONS

* Denotes undergraduate authorship.

Submitted

Waterhouse, M., B, Sjodin, C. Ray, **L. Erb**, J. Wilkening, M. Russello. (In Revision) Individual-based analysis of hair corticosterone reveals factors influencing chronic stress in the American pika. *Methods in Ecology and Evolution*.

2014 Erb, L.P., C. Ray, R. Guralnick. (2014) Determinants of pika population density versus occupancy in the Southern Rocky Mountains. *Ecological Applications* 24: 429-435. (Peer reviewed)

2013 *Smith, J. A. and **L. P. Erb** (2013) Large scale foraging behavior of the American pika: Linking behavior and environment. *Mountain Views* 7(2): 14-17.

*Smith, J. and **L. P. Erb** (2013) Patterns of selective caching behavior of a generalist herbivore, the American pika (*Ochotona princeps*). *Arctic, Antarctic, and Alpine Research* 45: 396-403. (Peer reviewed)

2011 Erb, L.P., R. Guralnick, C. Ray. (2011) On the generality of a climate-mediated shift in the distribution of the American pika (*Ochotona princeps*). *Ecology* 92: 1730-1735. (Peer reviewed)

Guralnick, R.P., **L. Erb**, C. Ray. (2011) Mammalian distributional responses to climatic changes: A review and research prospectus. In J. Ballant and E. Beever (Eds.), *Ecological Consequences of Climate Change: Mechanisms, Conservation, and Management*. Taylor and Francis, Boca Raton, FL. (Peer reviewed)

- 2009** McShea, W.J., C. Stewart, **L. Peterson**, P. Erb, R. Stuebing, and B. Gimán. 2009. The importance of secondary forest blocks for terrestrial mammals within an Acacia/secondary forest matrix in Sarawak, Malaysia. *Biological Conservation* 142: 3108-3119. (Peer reviewed)
- 2006** Gayton, D.V., M.H. Weber, M. Harrington, E.K. Heyerdahl, E.K. Sutherland, B. Brett, C. Hall, M. Hartman, **L. Peterson**, C. Merrel. 2006. Fire history of a western Montana ponderosa pine grassland: A pilot study. *Indiana State University Professional Paper Series No. 23*, 30-36.
- 2004** **Peterson, L.** 2004. Climatic drivers of wildfire regimes in northern Idaho. Honors thesis. Colorado College Biology Department, Colorado Springs, CO. 33 pages.
- In Prep** **Erb, L. P.**, L. Sackett, P. Erb, C. Ray, R. Guralnick. (In prep) Dispersal limitation in a mountainous landscape: landscape genetics of the American pika.
- Erb, L. P.**, R. Guralnick, C. Ray. (In prep) Climatic drivers of multi-year trends in American pika occupancy in the southern Rocky Mountains. *Ecosphere*.
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PRESENTATIONS

- 2015** **3rd Conference of the North American Pika Consortium**, Golden, CO
- “The interactive effects of climate and vegetation on multi-year occupancy of the American pika in the Southern Rocky Mountains”
- Citizen Science Association Conference**, San Jose, CA
- “Don’t crawl under a rock: Look there for pikas! Engaging the public in climate-change science through surveys of a rock rabbit, the American pika”
 - Authors: Johanna Varner, **Liesl Erb**, April Craighead, Amy Masching, Lucas Moyer-Horner, Megan Mueller, Emily Olson, Chris Ray, William Simpson, Shankar Shivappa, and Mike Weddle
- 2014** **Colorado Science Conference for Professional Development**, Denver, CO
- “Bees in the Classroom: Real Data from the Real World!” Co-presented with Peter Erb
- 2013** **National Science Teacher’s Association Conference**, Denver, CO
- “ScienceLIVE and BSI: Bringing lessons based on real science into your classroom!”
- Colorado Biology Teachers Association Fall Workshop**, Steamboat Springs, CO
(Invited presentation)
- “ScienceLIVE: Connecting classrooms to active field researchers”
- 2012** **University of Colorado, Graduate Teacher Program Workshop Series**, Boulder, CO
(Invited presentation)
- “Let’s get out of here! Taking learning beyond the classroom”
- Denver Museum of Nature and Science**, Restoration Ecology course, Denver, CO
(Invited presentation)
- “The American pika: Sentinel for alpine change?”
- The Wildlife Society Annual Conference**, Portland, OR
(First author, presented by Dr. Chris Ray)
- “Microclimatic drivers of pika population density in the Southern Rocky Mountains”

North American Congress for Conservation Biology, Oakland, CA

(Invited symposium presentation)

- **Symposium:** Pikas in Peril? Population trends and resilience of the American pika
- Title: Climatic influences on multi-year occupancy of the American pika (*Ochotona princeps*) in the southern Rocky Mountains

University of Colorado, Graduate Teacher Program Workshop Series, Boulder, CO

(Invited presentation; Co-Presenter)

- “Teaching through controversy”

University of Colorado, Graduate Teacher Program Spring Conference, Boulder, CO

(Invited presentation; Co-Presenter)

- “Assessing student attitudes in a creative course”

2011 Colorado College, Biology Department Seminar Series, Colorado Springs, CO

(Invited presentation)

- “Climatic drivers of American pika (*Ochotona princeps*) distribution and population density”

Denver Zoo, Citizen Science Volunteer Celebration, Denver, CO

(Invited presentation)

- “Multi-year climatic drivers of American pika (*Ochotona princeps*) distribution”

Ecological Society of America Annual Meeting, Austin, TX

- “Multi-year occupancy in the Southern Rockies: A regional stronghold or the next Great Basin?”

2010 Guild of Rocky Mountain Ecologists and Evolutionary Biologists, Pingree Park, CO

- “Climatic drivers of pika persistence in the Southern Rocky Mountains”

Mountain Studies Institute, Citizen Science Volunteer Training, Silverton, CO

- “PikaNet: Citizen-Driven Science”

International Congress for Conservation Biology, Edmonton, Alberta, Canada

- “Climatic drivers of pika persistence in the Southern Rocky Mountains”

Interagency Regional Wilderness Stewardship Course, Estes Park, CO

(Invited presentation)

- “Stewardship of a Changing Landscape: Climate change impacts on ecosystems”

Rocky Mountain National Park Biennial Research Conference, Estes Park, CO

- “Climatic drivers of pika persistence in the Southern Rocky Mountains”

1st North American Pika Conference, Teton Science Schools, Jackson, WY

- “Climatic drivers of American pika (*Ochotona princeps*) distribution in the Southern Rocky Mountains”

Front Range Student Ecology Symposium, Fort Collins, CO

- “Precipitation as a driver of American pika (*O. princeps*) distribution in the Southern Rocky Mountains”

2009 Mountain Studies Institute, Moving Mountains Series, Fort Lewis College, Durango, CO

(Invited presentation)

- “The American pika (*O. princeps*) in a changing climate: an uphill battle?”

Audubon Society of Greater Denver, CO

- “Testing climate-related models of range contraction for the American pika (*O. princeps*)”

University of Colorado EBIO Department’s Spring Symposium

- “Drivers of American pika (*Ochotona princeps*) occupancy in the Southern Rocky Mountains”

University of Colorado Natural History Museum Walker Van Riper Award lecture series

- Testing climate-related models of range contraction for the American pika (*O. princeps*)

2004 West Coast Biological Sciences Undergraduate Research Conference, San Diego, CA

- “Climatic drivers of wildfire regimes in northern Idaho”
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FUNDING

2017 (Pending final agency approval) North Carolina Wildlife Resources Commission. Distribution, habitat preferences, and landscape genetics of Appalachian cottontail (*Sylvilagus obscurus*) in western North Carolina. \$243,182. Co-PI with Dr. JJ Apodaca (Warren Wilson College) and Dr. Corinne Diggins (USGS and Virginia Polytechnic Institute and State University).

2013 Seattle City Light Wildlife Research Program Grant. Investigating the genetic basis of climate adaptation in the American pika. \$80,426. Co-PI with Dr. Michael Russello of the University of British Columbia – Okanagan.

2011 University of Colorado EBIO Departmental Semester Fellowship. \$13,000

2010 National Science Foundation Doctoral Dissertation Improvement Grant. Climatic constraints on American pika distribution and abundance. \$14,973. Co-PI. PI: Dr. Robert Guralnick

University of Colorado EBIO Departmental Summer Fellowship. \$6,000

2008 National Geographic Research and Exploration Grant. Testing climate-related models of range contraction for the American pika. \$25,462. Co-PI. PI: Dr. Robert Guralnick, Co-PI: Dr. Chris Ray

Colorado Mountain Club Kurt Gerstle Fellowship, \$2,000

Mountain Studies Institute San Juan Mini-Grant, \$2,231

Lois Webster Fund Grant, Audubon Society of Greater Denver. \$1,000

University of Colorado EBIO Departmental Research Grant. \$1,750

University of Colorado Museum of Natural History Walker Van Riper Award. \$1,500

RESEARCH EXPERIENCE

2010 Research Assistant, “Pikas in Peril” Project

University of Colorado at Boulder

- Statistical analysis and research support for the National Park Service “Pikas in Peril” project

- 2006- Ecology Contractor, Smithsonian Conservation Biology Institute**
2007 Front Royal, VA Ecology Intern
- Coordinated large mammal camera trapping survey in Sarawak, Malaysia
 - Aided in population and community ecology studies in the Mid-Atlantic United States
 - Assisted in teaching biodiversity monitoring and assessment techniques to college students and international managers
- 2004 Student Contractor, Northern Divide Grizzly Bear Project**
 US Geological Survey, West Glacier, MT
- Located and constructed hair snag stations in remote and rigorous mountain locations
 - Collected and recorded data regarding hair snag sites and bear rub object use
- 2003- Independent Student Researcher, Colorado College and the University of Idaho**
2004 Colorado Springs, CO and Moscow, ID
- Designed, independently researched, and wrote Colorado College senior thesis on fire history
 - Collected fire-scarred samples from tree stumps in University of Idaho Experimental Forest
 - Cross-dated samples using the latest dendrochronology techniques and technology
- 2002- Research Assistant, Biology Department**
2003 Colorado College, Pike National Forest, CO
- Located and observed possible nest sites and mating behavior of flammulated owls
 - Input data and performed statistical analysis

LEADERSHIP AND SERVICE

- 2016 Warren Wilson College Faculty Body**
 Secretary
- Record and organize meetings, maintain and record changes to bylaws.
- 2016 The Wildlife Society Conference Planning Committee**
 Member of the Volunteer Sub-Committee
- Assisted with the coordination of volunteers for the October 2016 national meeting in Raleigh, NC
- 2015 Warren Wilson College General Education Committee**
 Member of Environmental Responsibility Aim Team
- Developed language and standards for the college's Environmental Responsibility Aim
- 2011- ScienceLIVE**
present Co-Founder, Curriculum Developer
- ScienceLIVE (www.science-live.org) connects active researchers with K-12 classrooms and the general public through web-based technological tools.
 - Collaborative project with CU-Boulder's Biological Sciences Initiative and Museum of Natural History
- 2010- North American Pika Consortium**
present Genetics Sub-Committee, Habitat and Distribution Sub-Committee, Member of the Education, Outreach, and Citizen Science Sub-Committee
- Organize and disseminate scientific information on the American pika
 - Co-organized 3rd Conference of the North American Pika Consortium in Golden, CO

2009- Colorado and New Mexico Pika Citizen Science Programs

present Science Consultant

- Assist in protocol development and training of volunteers
- Collaborative effort between University of Colorado, Mountain Studies Institute, Denver Zoo, Rocky Mountain Wild, Natural Resources Ecology Lab, Colorado Parks and Wildlife, Seventh Generation Institute, and Pajarito Environmental Education Center

California Pika Consortium, Geomorphology and Habitat Mapping Working Group

- Contribute scientific knowledge of pika habitat limitations for management of *O. princeps*

2009- EBIO Club, Department of Ecology and Evolutionary Biology, CU Boulder

2011 Undergraduate Liason

- Coordinated undergraduate-graduate socials to facilitate undergraduate research opportunities

2008- Colloquium Committee, Department of Ecology and Evolutionary Biology, CU Boulder

2011 Committee Member

- Coordinated year-long colloquium series for the department

2008- Spring Symposium Committee, Dept. of Ecology and Evolutionary Biology, CU Boulder

2010 Committee Member; Chair 2009

- Organized a day-long opportunity for undergraduate and graduate students to present their research to the department

2008 Evolution Outreach Committee, Dept. of Ecology and Evolutionary Biology, CU Boulder

Committee Member

- Assist in planning and organization of summer evolution workshops for K-12 teachers

2002- Colorado College Roots & Shoots, Colorado Springs, CO

2004 Co-founder and Co-leader

- Educated elementary students in an afterschool program concerning the environment, animals, and the human community
- Recruited and organized college volunteers; coordinated with participating elementary schools

AWARDS

2013 Teaching Assistant Award, Ecology and Evolutionary Biology Department, CU - Boulder

2011 *Best Should Teach* Silver Award, University of Colorado Graduate Teacher Program

Teaching Assistant Award, Ecology and Evolutionary Biology Department, CU - Boulder

PROFESSIONAL ASSOCIATIONS

- American Society of Mammalogists
- Ecological Society of America
- The Phi Beta Kappa Society
- Society for Conservation Biology
- The Wildlife Society
- World Lagomorph Society