

Natalie Robinson

Boulder, CO

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EDUCATION

- PhD. University of Colorado, Boulder. Advisors: M. Deane Bowers, Robert Guralnick 2013
Department of Ecology and Evolutionary Biology
- M.A. University of Colorado, Boulder. Advisor: M. Deane Bowers 2009
Department of Ecology and Evolutionary Biology
- B.S. University of California, Berkeley 2003
Major: Molecular Environmental Biology
- Continuing Education and Certifications
- Compass Science Communications Workshop 2017
Software/Data Carpentry Instructor Certification 2014
Bayesian Modeling for Practicing Ecologists 2014

RESEARCH INTERESTS & SKILLS

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|----------------------|---|-----------------------|
| Conservation Ecology | Spatial Data Processing and Analyses | Python, R, Javascript |
| Spatial Ecology | Bayesian and Frequentist Statistical Analysis | Git/github |
| Community Ecology | GIS Modeling Applications | Markdown, SQL,HTML |
| Ecological Modeling | Programmatic Data Assessment and Analysis | Data Management |
| Scientific Writing | Mobile Application Development | Web scraping |

PROFESSIONAL EXPERIENCE

- National Ecological Observatory Network (NEON) 2013-Present
- Staff Scientist: Quantitative Ecologist – Biostatistician
- Development and implementation data QA/QC algorithms and tools for staff use
 - Development of mobile data collection applications
 - Assistance with spatial data processing and workflow improvement
 - Development and implementation of observatory commissioning tests, and report generation
 - Outreach to scientific community through conference & workshop attendance/teaching
 - Contribution of lesson materials to 'NEON Data Skills' website
 - General support to science staff for technical document writing, data acquisition and management, development and use of scripting tools (R, Python, Javascript) for various workflows

RESEARCH EXPERIENCE

- Understanding the drivers of butterfly diversity patterns and testing model transferability across global ecosystems. 2009-2013
- Dissertation research, with M. Deane Bowers and Robert Guralnick
Department of Ecology and Evolutionary Biology; University of Colorado, Boulder

Graduate Research Assistant: Modeling variables of importance to the distributions of organisms on a global scale; integrating global species distributions, remote sensing, and climate data to assess biodiversity response to climate change (with NASA Climate and Biological Response program and NCEAS), with Robert Guralnick Department of Ecology and Evolutionary Biology; University of Colorado, Boulder	2011-2013
Research Data Analyst: Statistical analyses on various research projects, using R statistical software, with Michael Grant Department of Ecology and Evolutionary Biology; University of Colorado, Boulder	2010-2012
Monitoring the effects of habitat type and land-use variables on butterfly communities: Master's Research, with M. Deane Bowers Department of Ecology and Evolutionary Biology; University of Colorado, Boulder	2006-2009
Graduate Research Assistant: Museum collection reorganization and improvement: insect teaching collection, with M. Deane Bowers Department of Ecology and Evolutionary Biology; University of Colorado, Boulder	2008
Research Assistant: Small mammal disease dynamics and population ecology, with Sharon Collinge Department of Ecology and Evolutionary Biology; University of Colorado, Boulder	2004
Lab Assistant II: Amphibian parasite and fungal pathogen ecology, with Cheryl Briggs Department of Integrative Biology; University of California, Berkeley	2003
Lab Assistant II: Gall making insect and parasitoid population ecology, with Cheryl Briggs Department of Integrative Biology; University of California, Berkeley	2002-2003
Field Assistant II: Invasion dynamics in a California grassland ecosystem, with Jeffrey Corbin Department of Integrative Biology; University of California, Berkeley	2002
The effects of invasive species on insect communities in a California grassland ecosystem. Undergraduate research with Jeffrey Corbin Department of Integrative Biology; University of California, Berkeley	2002-2003

PUBLICATIONS

Peer-reviewed

- Parmentier, B., McGill, B., Wilson, A., Regetz, J., Jetz, W., Guralnick, R., Tuanmu, M.-N., **Robinson N.**, Schildhauer, M. An assessment of methods and remote-sensing derived covariates for regional predictions of 1 km daily maximum air temperature. *Remote Sensing*. 2014, 6(9), 8639 – 8670.
- Robinson N.**, Kadlec, T., Guralnick, R. P., Bowers, M. D. 2014. Integrating Species traits and habitat characteristics into models of butterfly diversity in a fragmented ecosystem. *Ecological Modelling*. 2014, 281(2014), 15-25.
- Robinson, N.**, Regetz, J., Guralnick, R. P. 2014. EARTHENV-DEM90: A Nearly-global, void-free, multi-scale smoothed, 90m digital elevation model from fused ASTER AND SRTM data. *ISPRS Journal of Photogrammetry and Remote Sensing*. 87(2014): 57-67.
- Robinson N.**, Armstead, S and Bowers, M.D. 2012. Butterfly Community Ecology: The Influences of Habitat Type, Weather Patterns and Dominant Species in a Temperate Ecosystem. *Entomologia Experimentalis et Applicata*. 145(1): 50-61.
- Basey, J. M., Sackett, L. C., **Robinson N.** 2008. Optimal Science Lab Design: impacts of various

Components of lab design on students' attitudes toward lab. *International Journal for the Scholarship of Teaching and Learning*, 2 (1)

Non Peer-reviewed

Robinson N., Barton, K., Nufio, C., Bowers, M.D. 2010. Laboratory Manual for Insect Biology, University of Colorado, Boulder.

In Prep

Robinson N., Williams, M. R., Guralnick, R. P., Bowers, M. D. Exploring generalities in the drivers of diversity patterns in fragmented landscapes: A model cross-comparison analysis with butterflies. *In prep, Ecography*.

Robinson N., Guralnick, R. P., Bowers, M. D. Are the determinants of species diversity patterns generalizable on a global scale? A cross-continental analysis of the drivers of butterfly diversity patterns among urban, fragmented ecosystems. *In prep, Global Ecology and Biogeography*.

DATA PUBLICATIONS

Dryad

Robinson N., Armstead S, Bowers MD (2012) Data from: Butterfly community ecology: the influences of habitat type, weather patterns, and dominant species in a temperate ecosystem. Dryad Digital Repository. [doi:10.5061/dryad.57vh3](https://doi.org/10.5061/dryad.57vh3)

GRANTS, AWARDS & FELLOWSHIPS

InnoCentive	Sep 2017
<i>Challenge 9933881- DataApp: A Mobile App Framework for Field Data Capture – Stage 1. \$2500</i>	
University of Colorado Graduate School	Fall 2013
<i>Dissertation Completion Fellowship. \$9,879.82</i>	
Department of Ecology and Evolutionary Biology, University of Colorado, Boulder	Fall 2013
<i>Dissertation Completion Fellowship. \$9,879.82</i>	
University of Colorado Graduate School	May 2012
<i>Travel grant to present research at the 97th Annual Ecological Society of America Meetings. \$300</i>	
Ecology and Evolutionary Biology Departmental Grant, University of Colorado, Boulder	April 2012
<i>Understanding the Influence of Habitat Fragmentation on Butterfly Occurrence Patterns: Developing and Testing Models Across Global Ecosystems. \$2000</i>	
Beverly Sears Graduate Student Grant, University of Colorado, Boulder	April 2012
<i>Understanding the Influence of Habitat Fragmentation on Butterfly Occurrence Patterns: Developing and Testing Models Across Global Ecosystems. \$1000</i>	
Ecology and Evolutionary Biology Departmental Grant, University of Colorado, Boulder	May 2010
<i>Species Trait Modeling of Butterflies in Urban Fragments Along the Colorado Front Range. \$750</i>	
Ecology and Evolutionary Biology Departmental Grant, University of Colorado, Boulder	April 2009
<i>Species Trait Modeling of Butterflies in Urban Fragments Along the Colorado Front Range. \$1500</i>	

- University of Colorado Museum of Natural History Grant, University of Colorado, Boulder April 2009
Species Trait Modeling of Butterflies in Urban Fragments Along the Colorado Front Range: \$1200
- Ecology and Evolutionary Biology Spring Symposium, University of Colorado, Boulder May 2008
Best Graduate Student Talk
- Ecology and Evolutionary Biology Departmental Grant, University of Colorado, Boulder April 2008
Long-term Survey of Butterfly Communities on City of Boulder OSMP Land: \$840
- City of Boulder Open Space and Mountain Parks Research Grant May 2007
Long-term Survey of Butterfly Communities on City of Boulder OSMP Land: \$6,235
- Ecology and Evolutionary Biology Departmental Grant, University of Colorado, Boulder April 2007
Long-term Survey of Butterfly Communities on City of Boulder OSMP Land: \$750

INVITED TALKS

- Robinson Natalie. 2011. (Talk) "Butterfly Community Variation in Urban Fragments of the Colorado Front Range." *City of Louisville, CO Open Space Advisory Board Meeting*.
- Robinson Natalie. 2008. (Talk) "Long-term Monitoring of Butterfly Communities around City of Boulder Open Space and Mountain Parks Land." Boulder County Audubon Society "Butterfly Night" meeting.

PRESENTATIONS

- Robinson, Natalie. 2017 (Talk) "Quality is everything: Automated data collection tools to enhance the quality of NEON's 'big data' streams." *Ecological Society of America Annual Meeting*
- Robinson, Natalie. 2012. (Talk) "Methods for constructing a high quality 90m Global DEM." *University of Colorado Brown Bag Series*.
- Robinson, Natalie. 2012. (Poster) "Understanding community response to habitat fragmentation: Modeling butterflies across global ecosystems." *Ecological Society of America Annual Meeting*.
F1000 poster: <http://f1000.com/posters/browse/summary/1092599>.
- Robinson Natalie. 2010. (Talk) "The Orange Skipperling (*Copaeodes aurantiaca* (Hesperiidae)): A New Record for the Colorado Front Range." *21st Annual Meeting of the High Country Lepidopterists Society*.
- Robinson Natalie. 2010. (Talk) "To Be or Not To Be: Using Ecological Modeling to Understand Butterfly Occurrence Patterns Based on Species Traits and Environmental Variables." *University of Colorado Museum Award Recipients Lunch-time Presentation Series*.
- Robinson Natalie. 2009. (Talk) "To Be or Not To Be: Using Ecological Modeling to Understand Butterfly Occurrence Patterns Based on Species Traits and Environmental Variables." *Guild for the Rocky Mountain Ecologists and Evolutionary Biologists Annual Meeting*.
- Robinson Natalie. 2008. (Talk) "The Effects of Environmental and Land-use Variables on Butterfly Communities Across a Temperate Landscape." *University of Colorado Department of Ecology and Evolutionary Biology Spring Symposium*
- Robinson Natalie. 2007. (Talk) "City of Boulder Open Space and Mountain Parks Butterfly Survey." *18th annual High Country Lepidopterists Meeting*.

TEACHING/MENTORING EXPERIENCE

Ecological Society of America Workshop: “Working with Time Series in R using NEON Data” Instructor – R for data processing and visualization of NEON temperature and plant phenology data	Summer 2017
US Geological Survey (USGS) Data Carpentry Workshop Instructor - R for data processing and visualization	Spring 2016
Ecological Society of America Workshop: “Big Data in R” Instructor – R for spatial data processing and visualization of NEON remote sensing data	Summer 2015
Software Carpentry Unicamp Workshop Remote instructor – introduction to R for data processing and visualization	Summer 2015
National Data Integrity Conference (NDIC) Data Carpentry Workshop Instructor - R for data processing and visualization	Spring 2015
NEON Summer Internship Program Co-mentor for internship project “Exploring vascular plant and carabid beetle diversity across three different ecoclimatic domains using NEON provisional data”. Support of data acquisition, processing, and analysis using R and writing/report generation.	Summer 2014

Department of Ecology and Evolutionary Biology; University of Colorado, Boulder

Teaching Assistant

General Biology Lecture TA	Spring 2011
Biometry	Spring 2010
General Biology Clicker Software Manager	Spring 2009
Insect Biology Lab	Fall 2008, Fall 2009, Fall 2010
Evolutionary Biology Lab	Fall 2007, Spring 2008
General Biology Lab	Fall 2006, Spring 2007

Guest Lectures

Ecology: <i>Climate Impacts on Ecosystems</i> (Co-taught with Liesl Erb)	Spring 2011
Insect Biology: <i>Photoreception in Insects</i>	Fall 2010
Insect Biology: <i>Chemoreception in Insects</i>	Fall 2010
Biometry: <i>Model Fitting Using Akaike’s Information Criteria</i>	Spring 2010
Insect Biology: <i>The Bark Beetles</i>	Fall 2008, Fall 2009, Fall 2011
Evolutionary Biology: <i>Coevolution</i>	Spring 2008
Insect Biology: <i>Coevolution</i>	Fall 2008

ACADEMIC SERVICE AND OUTREACH

Peer Review

Ecological Applications

PLOS One

International Journal of Remote Sensing

Department of Ecology and Evolutionary Biology; University of Colorado, Boulder

Colloquium Committee: travel coordinator

Fall 2012- Fall 2013

Graduate Student Mentor (tips and advice for first year graduate students)	Fall 2010-Spring 2013
Graduate Computer Committee: Co-chair	Spring 2012
Evolution Outreach Committee: Event organizer and presenter	Spring 2008

Other

Lab representative and activity coordinator: Crestview Elementary field trip to University of Colorado	Spring 2012
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