

# JESSICA T. MARTIN

## Curriculum vitae

### Contact information:

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## Current position

### New Mexico State University

#### Postdoctoral researcher, Department of Fish, Wildlife, and Conservation Ecology

2021-present

- Supervisor: Dr. Matthew Gompper
- Job duties:
  - Conduct research on various projects relating to the ecology of parasites and disease
  - Establish new projects and collaborations
  - Supervise and mentor undergraduate and graduate students

## Education

### Stanford University

#### Ph.D. Biology. Department of Biology

2013-2021

- Advisor: Dr. Rodolfo Dirzo
- Dissertation: "Bi-directionality in Host-Parasite Interactions: Impacts of Host Community Structure on Parasite Infestation and Consequences of Tick Traits on Host Specificity"

### University of New Mexico

#### B.S. Biology

Minor: Statistics

2005-2010

- GPA: 4.08 (*Summa cum laude*)
- *Summa cum laude*, University Honors Program
- *Summa cum laude*, Biology Honors Program
  - Senior honors thesis: "The key role of mesquite (*Prosopis*) in promoting survival in an extreme environment"

## Honors, Awards and Grants

- Travel Grant, Macroecology of Infectious Disease NSF RCN, \$2,000 (2018)
- Theodore Roosevelt Memorial Grant, \$3,000 (2014)
- NSF Graduate Research Fellowship (2014-2018)
- Stanford Graduate Fellowship, Gabilan Fellow (2013-2020)
- Centennial Teaching Assistant Award (2015)
- National Science Foundation (NSF) UNO (Undergraduate Nurturing Opportunities) Fellowship (2008-2010)
- Barry M. Goldwater Scholarship (2009)
- NSF REU Fellow (2007)
- NSF Grant to participate in "Biodiversity of Australia" Program (2006)

## Publications

**Martin, J.T.**, Fischhoff, I.R., Castellanos, A., and Han, B.A. "Ecological predictors of zoonotic vector status among *Dermacentor* ticks: a traits-based approach" *Journal of Medical Entomology* (in review).

Schroeder, J. W., **Martin, J. T.**, Angulo, D. F., Arias-Del Razo, I., Barbosa, J. M., Perea, R., ... & Dirzo, R. (2019). Host plant phylogeny and abundance predict root-associated fungal community composition and diversity of mutualists and pathogens. *Journal of Ecology*.

Schroeder, J.W., **Martin, J.T.**, Angulo, D.F., Barbosa, J.M., Perea, R., Arias-Del Razo, I., Sebastián-González, E., and Dirzo, R. (2018). Community composition and diversity of Neotropical root-associated fungi in common and rare trees. *Biotropica*, 50(4), 694-703.

Smith, F.A., Murray I.W., Harding, L.E., Lease, H.M., and **Martin, J.** (2014). "Life in an extreme environment: a historical perspective on the influence of temperature on the ecology and evolution of woodrats." *Journal of Mammalogy*, 95(6), 1128-1143.

## Manuscripts in preparation

**Martin, J.T.**, Grewelle, R.E., Bledsoe, E.K., Christensen E.M., Losapio, G., Dirzo, R., and Ernest, S.K.M. "Mammalian host segregation alters ectoparasite infestation in a desert ecosystem."

**Martin, J.T.**, Grewelle, R.E., Fabryka-Martin, J.T. "Quantification of sympatry in lagomorph species in a desert ecosystem via camera trap and fecal pellet surveys."

## Presentations

**Martin, J.T.**, R.E. Grewelle, E.K. Bledsoe, E.M. Christensen, G. Losapio, R. Dirzo, and S.K.M. Ernest. "Effects of mammalian community structure on ectoparasites in a desert ecosystem" Entomological Society of America Virtual Meeting, November 2020.

**Martin, J.T.**, R.E. Grewelle, E.K. Bledsoe, E.M. Christensen, G.M. Yenni, S.K.M. Ernest. "Effects of mammalian community composition on rodent ectoparasites in the Chihuahuan desert" Ecology and Evolution of Infectious Disease (EEID) Annual meeting in Santa Barbara, CA, 2017.

**Martin, J.T.**, R.E. Grewelle, E.K. Bledsoe, E.M. Christensen, G.M. Yenni, S.K.M. Ernest "Effects of mammalian community composition on rodent ectoparasites in the Chihuahuan desert" Species Interactions Workshop, Santa Cruz, CA, 2017.

**Martin, JT**, Smith, FA, Lease, HM, Murray, IW, Dearing, MD, Varner, J, and Harding, LE. "The key role of mesquite (*Prosopis*) in promoting survival in an extreme environment" Ecological Society of America Annual Meeting, Sacramento, CA, 2014.

**Martin, JT**, Smith, FA, Lease, HM, Murray, IW, and Harding, LE. "You are what you eat: the key role of mesquite in promoting survival in an extreme environment" Ecological Society of America Annual Meeting, Albuquerque, NM, 2009.

**Martin, JT**, Smith, FA, Lease, HM, Murray, IW, and Harding, LE. "You are what you eat: the key role of mesquite in promoting survival in an extreme environment" American Society of Mammalogists 2009 Meeting, Fairbanks, AK, 2009.

**Martin, JT**. "Not in my backyard: geographic patterns of environmentalism in the U.S." International Biogeography Society Meeting, Merida, Mexico, 2009.

**Martin, JT**, Brantley, S, Shepherd, UL, Moquin, SA. "Effects of climate change underfoot: linking to the micro scale" Guild of Rocky Mountain Ecologists and Evolutionary Biologists Conference, Abiquiu, NM, 2007.

## Research Experience

### Stanford University

#### Graduate Student Research Fellow

Laboratory of Dr. Rodolfo Dirzo

2013-August 2021

- Designed and implemented research projects with field surveys located in the Chihuahuan desert in Arizona in collaboration with researchers at Stanford University and the University of Florida

- Conducted field surveys: small mammal trapping, ectoparasite collection, camera trapping, fecal pellet surveys, plant surveys.
- Analyzed data in collaboration with coauthors.
- Presented results at national conferences.
- Preparing two manuscripts for submission to peer-reviewed journals.
- Designed and implemented research project in collaboration with researchers at the Cary Institute of Ecosystem Studies, Millbrook, NY.
  - Compiled comprehensive database of *Dermacentor* tick traits.
  - Implemented machine learning algorithm to predict zoonotic vector status and disease risk based on *Dermacentor* tick species traits.
  - Preparing manuscript for submission to a peer-reviewed journal.

### **National Ecological Observatory Network (NEON)**

#### **Seasonal Lead Field Technician**

Supervisor: Tracey Baldwin

May 2013 – September 2013

- Monitored plants and animals in Domain 10 (Central Plains) of the National Ecological Observatory Network.
- Surveyed small mammals, arthropods, and vegetation.
- Surveyed for and collected mosquitoes using CO<sub>2</sub> traps
- Conducted tick drags for monitoring tick populations

### **Valles Caldera National Preserve**

#### **Biological Technician (Entomology)**

Supervisors: Dr. Robert Parmenter, Mark Peyton (M.S.)

January 2013 – May 2013

- Conducted research on arthropod populations in the Valles Caldera National Preserve, New Mexico.
- Led arthropod field surveys.
- Processed laboratory samples.

### **Valles Caldera National Preserve**

#### **Biological Field Technician (Wildlife)**

Supervisors: Dr. Robert Parmenter, Mark Peyton (M.S.)

May 2012 – October 2012

- Monitored and conducted research on wildlife in the Valles Caldera National Preserve.
- Worked as part of the wildlife crew on various projects, including:
  - Capturing and GPS tracking of black bears and mountain lions.
  - Camera trapping
  - Surveying small mammals, fish, arthropods, and vegetation.
  - Supervised volunteer crews.

**University of Notre Dame****Field Crew Member**

Supervisor: Dr. Gary Belovsky

May 2011 – July 2011

- Worked as part of the University of Notre Dame field crew to study grasshopper ecology and population dynamics at field sites on the National Bison Range, Montana.

**University of New Mexico****Research Assistant/Staff**

Supervisor: Dr. Felisa Smith

2011-2012

- Processed paleomiddens collected from Death Valley, California to study packrat populations over the last 30,000 years.

**University of New Mexico****Research Experiences for Undergraduates (REU) Fellow and Research Assistant**

Supervisor: Dr. Felisa Smith

2007- 2010

- Assisted graduate students in trapping desert woodrats (*Neotoma lepida*) at field site in Death Valley.
- Developed an independent research project investigating the link between mesquite (*Prosopis glandulosa*) and the fitness of *N.lepida* living at the study site.
- Submitted project as senior honors thesis: "The key role of mesquite (*Prosopis*) in promoting survival in an extreme environment."

**University of New Mexico****Research Assistant**

Supervisor: Dr. Ursula Shepherd

2007

- Conducted research comparing interannual variation in the microarthropod community living in cryptobiotic crusts in Placitas, New Mexico.
  - Conducted field and laboratory work.
  - Analyzed data.
  - Presented results at a regional conference.

## Teaching Experience

### Stanford University

#### Teaching Assistant

Course title: Ecology for Everyone

2016

- Mentored non-biology major students on independent research projects and evaluated class assignments.

### Stanford University

#### Teaching Assistant

Course title: Introduction to Research in Ecology and Evolution

2014

- Prepared and delivered course content.
- Led field work activities.
- Graded assignments and final papers.

### University of New Mexico

**Co-teacher** with Dr. Ursula Shepherd

Biogeography of Arid Zones in the New World

2009

- Designed course materials assignments, and field trip activities in collaboration with Dr. Ursula Shepherd
- Presented lectures
- Co-led field trips in New Mexico and Argentina
- Mentored students in their final research projects culminating in a symposium.

## Volunteer Mentoring

- BioPeers peer counselor for Stanford Biosciences graduate students (2015-present)
- Volunteer tutor for bilingual elementary school students in Redwood City, CA (2017-2019)
- Science in Service Program, Stanford University (2013-2014)
  - Mentored 6<sup>th</sup> grade students in East Palo Alto on a weekly basis.
  - Assisted students with conducting experiments and developing their own science projects.

## **Volunteer Service**

- Action Council member of the Unitarian Universalist Church of Palo Alto (2018-present)
  - Participate in and lead various social justice advocacy projects
    - Organize and schedule events
    - Budget planning and management
    - Supervise volunteers
    - Support and advocate for asylum seekers and recent immigrants
- Job search Project Manager for Afghan Refugee Resettlement Program, El Calvario Immigrant Advocacy Center, Las Cruces, New Mexico (January 2022-present)
  - Coordinate with staff and case workers to connect refugees with resources
  - Follow and implement guidelines for volunteers and staff
  - Recruit and supervise volunteers to:
    - Interview newly arrived refugee individuals and families
    - Build resumes for job seekers
    - Connect individuals with job opportunities