

Jessica Martin Judson

Department of Ecology, Evolution, and
Organismal Biology
Iowa State University

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EDUCATION

Doctor of Philosophy in Ecology and Evolutionary Biology; 4.0/4.0 (*In progress*) **8/2015-5/2021**

Dissertation: Historical and contemporary selection and genetic drift, and their effects on phenotypic and genetic variation among individuals and populations. Adviser: Fredric. J. Janzen
Iowa State University, Ames, IA

Master of Science in Biological Sciences; 4.0/4.0 **8/2013-5/2015**

Thesis: Evidence for age-dependent selection in *Iguana delicatissima*: Does inbreeding depression shape population dynamics? Adviser: Mark E. Welch
Mississippi State University, Starkville, MS.

Bachelor of Science in Biological Sciences; 3.97/4.0 **8/2010-12/2013**

Mississippi State University, Starkville, MS.

PUBLICATIONS (*Formerly published as J. Martin*)

1. **Judson, J.M.**, Knapp, C.R., and Welch, M.E. (2018). Age-dependent, negative heterozygosity-fitness correlations and local effects in an endangered Caribbean reptile, *Iguana delicatissima*. *Ecology and Evolution* 8 (4): 2088–2096.
2. **Martin J.**, Knapp, C., Gerber, G., Thorpe, R., and Welch, M.E. (2015). Phylogeography of the Endangered Lesser Antillean iguana, *Iguana delicatissima*: A recent diaspora in an archipelago known for ancient herpetological endemism. *Journal of Heredity* 106 (3): 315–321.
3. Ryder, O.A., Chemnick, L.G., Thomas, S., **Judson, J.M.**, Romanov, M.N., Ratan, A., Schuster, S.C., Miller, W., Dandekar, S., Papp, J.C., Walker, K., Stallis, I., and Mace, M. *Accepted*. Multiple occurrences of facultative parthenogenesis in California condors. *Journal of Heredity*.
4. **Judson, J.M.**, Reding, D.M., and Bronikowski, A.M. *Accepted*. Immunosenescence and its influence on reproduction in a long-lived vertebrate. *Journal of Experimental Biology*.
5. **Judson, J.M.**, Hoekstra, L.A., Holden, K.G., Bronikowski, A.M., and Janzen, F.J. *In review*. Forelimb stripe coloration as a sex- and size-dependent honest signal of physiological fitness in the painted turtle. *Oecologia*.
6. Hoekstra, L.A., **Judson, J.M.**, Janzen, F.J., and Bronikowski, A.M. *In prep*. Sex-specific heritability of lifespan in a long-lived reptile lacking sex chromosomes.
7. **Judson, J.M.**, Hoekstra, L.A., Bronikowski, A.M., and Janzen, F.J. *In prep*. Population genetic structure of the western range of the painted turtle (*Chrysemys picta*).
8. Moran, B.M., Thomas, S.M., **Judson, J.M.**, Navarro, A., Davis, H., Sidak-Loftis, L., Mace, M., Ralls, K., Callicrate, T., Ryder, O.A., Chemnick, L.G., Steiner, C.C. *In prep*. Parentage analysis in the endangered California condor population: implications for conservation management. *The Condor: Ornithological Applications*.

PRESENTATIONS

- Judson J.** 2020. TALK. Forelimb stripe coloration as a sex-dependent honest signal in the painted turtle (*Chrysemys picta*). *Ecology and Evolutionary Biology Spring Symposium, ISU*. February 1, Ames, IA
- Judson J.** 2019. TALK (3-Minute Thesis). Seeing through a turtle's eyes; the meaning of being colorful. *Department of Ecology, Evolution, and Organismal Biology, ISU*. December 5, Ames, IA [**First Place Winner**]

- Welch M., C. Knapp, G. Gerber, G. Colosimo, J. Berk, **J. Judson**, and J. Moss. 2019. TALK. Heterozygosity and the expression of genetic load across multiple life history stages in multiple species of iguanas. *Evolution Meeting*. June 24, Providence, RI
- Judson J.**, L. Hoekstra, K. Holden, R. Polich, C. Adams, A. Bronikowski, and F. Janzen. 2019. TALK. The role of color, immunity, and sexually dimorphic traits in male reproductive success in a freshwater turtle. *Iowa Academy of Science Annual Meeting*. April 27, University of Northern Iowa, Cedar Falls, IA
- Judson J.**, L. Hoekstra, K. Holden, R. Polich, C. Adams, A. Bronikowski, and F. Janzen. 2019. TALK. The role of color, immunity, and sexually dimorphic traits in female mate choice. *Society for Integrative and Comparative Biology Meeting*. January 7, Tampa, FL
- Hoekstra L., **J. Judson**, F. Janzen, and A. Bronikowski. 2019. POSTER. Quantitative genetics of life history in a population of long-lived reptiles. *Society for Integrative and Comparative Biology Meeting*. January 6, Tampa, FL
- Judson J.**, A. Bronikowski, and F. Janzen. 2018. TALK. Population genomic structure in a widespread reptile, the painted turtle (*Chrysemys picta*). *Iowa Academy of Science Annual Meeting*. April 21, Buena Vista University, Storm Lake, IA
- Judson J.**, A. Bronikowski, and F. Janzen. 2018. TALK. Population genetic structure in a widespread reptile, the painted turtle (*Chrysemys picta*). *Society for Integrative and Comparative Biology Meeting*. January 5, San Francisco, CA
- Martin J.**, C. Knapp, G. Gerber, R. Thorpe and M.E. Welch. 2013. TALK. Population Genetic Analysis of the Lesser Antillean Iguana, *Iguana delicatissima*, in the Lesser Antilles. *Iguana Specialist Group*. November 13, Kingston, Jamaica.
- Martin J.** and S. Thomas 2013. TALK. Population structure and relatedness of the endangered California Condor. *San Diego Zoo Summer Fellow Presentations*. August 7, Escondido, CA
- Martin J.**, C. Knapp, R. Thorpe and M.E. Welch. 2013. POSTER. Mitochondrial Sequencing in the Endangered Lesser Antillean Iguana. *Biological Undergraduate Research Program*. April 12, Starkville, MS
- Martin J.**, C. Knapp, R. Thorpe and M.E. Welch. 2013. POSTER. Mitochondrial Sequencing in the Endangered Lesser Antillean Iguana. *Shackouls Undergraduate Research Symposium*. March 22, Starkville, MS
- Martin J.**, C. Knapp, G. Colosimo and M.E. Welch. 2012. POSTER. *Iguana delicatissima*: The relevance of communal nesting to conservation. *Southeastern Population Ecology and Evolutionary Genetics Meeting*. October 12-14. Clemson University Outdoor Laboratory, NC
- Martin J.**, C. Knapp, G. Colosimo and M.E. Welch. 2012. POSTER. *Iguana delicatissima*: The relevance of communal nesting to conservation. *Shackouls Undergraduate Research Symposium*. July 26, Starkville, MS
- Martin J.**, C. Knapp, G. Colosimo and M.E. Welch. 2012. POSTER. *Iguana delicatissima*: Genetic analysis of population fitness on Dominica. *Shackouls Undergraduate Research Symposium*. April 18, Starkville, MS
- Martin J.**, C. Knapp, G. Colosimo and M.E. Welch. 2012. POSTER. *Iguana delicatissima*: Genetic analysis of population fitness on Dominica. *Biological Undergraduate Research Program*. April 13, Starkville, MS

GRANTS AWARDED

Professional Advancement Grant from the Graduate Professional Student Senate; \$200	1/2018, 1/2019
Charlotte Mangum Student Support Award, SICB Meeting; \$1000	1/2018, 1/2019
Iowa Science Foundation Grant; \$4995, Jessica Judson; PI: Fredric Janzen	7/2017
MSU Biology Faculty Fund Research Grant; \$500	11/2014
Summer Institute in Statistical Genetics Scholarship, University of Washington; \$1600	5/2014
MSU Biology Faculty Fund Travel Grant; \$500	5/2014
Honors MSU Undergraduate Research Travel Grant; \$500, \$700	10/2012, 11/2013

Armando de la Cruz Travel Grant; \$250	10/2013
Iguana Specialist Group Travel Award; \$500	9/2013
San Diego Zoo Research Fellowship; \$5500	5/2013-8/2013
Northeast Mississippi Daily Journal Grant; \$400, \$400	12/2011, 11/2012
MSU Biology Undergraduate Research Grant; \$500	12/2012
Shackouls Honors College Research Fellowship; \$500	5/2012

RESEARCH EXPERIENCE

Graduate Research Assistant	1/2017-7/2017; 1/2018-7/2018; 1/2019-5/2019
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Ames, IA Manage project to genotype turtles using RADseq technology and analyze data for a genealogy; computational analysis of RADseq data to investigate local adaptation in the painted turtle.	
Undergraduate Research Associate	6/2011-12/2013
Mississippi State University Department of Biological Sciences, Starkville, MS. Research project involving microsatellite and mitochondrial DNA sequencing analysis in the endangered Lesser Antillean Iguana, <i>Iguana delicatissima</i> . Data analyzed include microsatellites and mitochondrial sequencing from eight different islands in the Lesser Antilles along with hatchling microsatellites from Dominica. Also assisted with research project on analysis of patterns of microsatellite evolution among species in the genus <i>Helianthus</i> including field collections and genotyping of microsatellite loci.	
Research Fellow for San Diego Zoo Global	5/2013-8/2013
Beckman Institute for Conservation Research, Escondido, CA Research project in the Genetics division on the California Condor, <i>Gymnogyps californianus</i> , including genotyping of microsatellites, sexing, and population genetic analysis.	
Wildlife Laboratory Technician	2/2013-5/2013
Mississippi State University Wildlife Department, Starkville, MS. Research project involving scat analysis of wolves, coyotes, bobcats, and black bears from Michigan to determine use of pulsed prey resources among large predators.	
Wildlife Research Assistant	1/2013-5/2013
Mississippi State University Wildlife Department, Starkville, MS. Assisted with field research on the American black bear in the Mississippi delta region. Data include tissue and blood collection, tagging, and telemetry data. Used data to infer population size and health.	

TEACHING EXPERIENCE

Instructor of Record: Evolution	Summer 2019
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Ames, IA Facilitated online course for Evolution summer offering, which included completing format of online Canvas course.	
Graduate Teaching Assistant: Evolutionary Genetics	Fall 2017; Fall 2018; Fall 2019
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Ames, IA Designed computational activities using the R language to integrate into a primarily lecture-based course, giving exposure to computational genetics and genomics work for genetics students at ISU	
Graduate Teaching Assistant: Biology 211 and Human Physiology 256	8/2015-12/2016
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Ames, IA Served as primary TA for introductory undergraduate labs in biology and physiology.	
Graduate Teaching Assistant	1/2014-5/2015
Mississippi State University Department of Biological Sciences, Starkville, MS Taught laboratory sections as primary TA and aided students through tutoring. <i>Classes Taught: Biology II Laboratory, Comparative Anatomy Laboratory, Biology of Vertebrates Laboratory</i>	

MENTORSHIP AND LEADERSHIP EXPERIENCE

- Emerging Leaders Academy** 8/2019-Present
Iowa State University Graduate College, Ames, IA
Participated in monthly discussions of leadership skills, styles, and mentorship in academic settings.
- High School Student Laboratory Mentor** 5/2019-Present
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Ames, IA
Taught high school student from Ames High School laboratory and computational techniques in the Janzen laboratory, with the guided mentorship of multiple research projects.
- Undergraduate Laboratory Mentor** 5/2016-Present
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Ames, IA
Taught multiple undergraduate students laboratory and computational techniques in the Janzen laboratory, with the guided mentorship of multiple research projects.
- George Washington Carver Program Student Mentor** 6/2018-8/2018
Iowa State University, Ames, IA
Mentored undergraduate student from Alabama A&M through a research project culminating in a final presentation and poster.
- Interdepartmental Genetics Graduate Student Laboratory Mentor** 1/2018-5/2018
Iowa State University Department of Ecology, Evolution, and Organismal Biology, Ames, IA
Taught a graduate student laboratory techniques in the Janzen lab with a final presentation.

Mentored Student Publications and Presentations:

- Kline, G., L. Tibbs, J. Judson, and F. Janzen.** *In prep.* The role of CIRBP in temperature-dependent sex determination in *Chrysemys picta*. *Journal of Heredity*.
- Kline, G., L. Tibbs, J. Judson, and F. Janzen.** 2019. POSTER. The role of CIRBP in temperature-dependent sex determination in painted turtles. *Society for Integrative and Comparative Biology Meeting*. January 5, Tampa, FL
- Pettway, J., J. Judson and F. Janzen.** 2018. TALK & POSTER. Drained of color: does parasite load affect coloration of painted turtles (*Chrysemys picta*)? *George Washington Carver Undergraduate Research Symposium*. August 2, Ames, IA

HONORS

- M.S. Research Assistant of the Year (2014-2015), Mississippi State University
Department of Biological Sciences; \$200 5/2015
- Undergraduate Researcher of the Year, College of Arts & Sciences, 2013 2/2014
- Recipient of Dr. Donald Hall Loyalty Scholarship; \$4000 2010-2014
- Summa Cum Laude 12/2013
- President's List 2010-2013
- Received 2nd Place Shackouls Honors Undergraduate Research Symposium; \$50 4/2012, 7/2012

ORGANIZATIONS & OUTREACH

Graduate Research in Evolutionary Biology and Ecology (GREBE) Student Organization, Iowa State University

- President 2017-2018, 2018-2019
 - Organized and coordinated the Ecology and Evolution Program Spring Symposium on February 3, 2018 and February 9, 2019; Duties included fundraising for the event, arranging guest speaker stays, assisting with abstract review for graduate student and faculty participants, and running the event. Additionally represented graduate students in the Ecology and Evolutionary Biology program at both the program and University level.
- EEB Curriculum Committee Graduate Representative 2016-2017

- Member 2015-present

Graduate Student Organization (GSO), Iowa State University

- Graduate Professional Student Senate Representative 2018-2019
- EEOB Department Seminar Committee Representative 2018-2019
 - Organized and coordinated the graduate student-hosted Ecology, Evolution, and Organismal Biology Department seminar featuring Dr. Daniel Dennett from Tufts University on February 9, 2019.
- Member 2015-present

Society for Integrative and Comparative Biology (SICB)

- Member 2017-present

Society for the Study of Evolution (SSE)

- Member 2017-present

Turtle Camp Research and Education in Ecology (TREE) Program

- Graduate Student Mentor 2017, 2018; led a team of high school students through the scientific process at a long-term research site in Thomson, IL, USA; program included a research project that was presented to the local community and to US Fish and Wildlife Service employees.

Biological Graduate Student Association (BGSA), Mississippi State University

- Member 1/2014-5/2015

–Attendee of Iowa State University Graduate College Emerging Leaders Academy, 2019-2020

–Presenter at Reptile Day; St. Cecilia’s Elementary School, Ames, IA: 8/2015

–Presenter at Herpetology Club; Iowa State University, Ames, IA: 10/2015, 1/2018

–Reviewer for *Conservation Genetics*, *Herpetologica*, *Journal of Herpetology*, *Journal of Heredity*, *Molecular Ecology*