

DAVID M. DELANEY

Postdoctoral Researcher

Curriculum vitae

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Department of Ecology and Evolutionary Biology
University of Colorado Boulder

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EMPLOYMENT

Postdoctoral Researcher, University of Colorado Boulder, USA

2020–present

Advisor: Andrew McAdam

EDUCATION

Doctor of Philosophy in Ecology and Evolutionary Biology, Iowa State University, USA (2015–2020)

Dissertation: Causes and consequences of variation in maternal investment strategies

Advisor: Fredric Janzen

Master of Science in Biology, University of Alabama at Birmingham, USA (2013–2015)

Thesis: The effects of inter-age class competition on habitat use in a territorial lizard

Advisor: Daniel Warner

Bachelor of Science in Biological Sciences, Eastern Illinois University, USA (2008–2012)

Research: Life-history characteristics of a population of Ring-necked Snakes

Advisor: Stephen Mullin

PUBLICATIONS

Peer-Reviewed Journal Articles

*Denotes undergraduate coauthor

18. Petruccio, L, **DM Delaney**, S Boutin, AG McAdam, JE Lane, R Boonstra, R Palme, B Dantzer. 2022. The glucocorticoid response to environmental change is not specific to agents of selection in wild red squirrels. *Hormones and Behavior* 146:105262.
17. Haines, JA¹, **DM Delaney**¹, AE Wishart, AG McAdam, DW Coltman, JE Lane, B Dantzer, S Boutin. 2022. Sex-specific effects of capital resources on reproductive timing and success in red squirrels. *Behavioral Ecology and Sociobiology* 76:142.
¹ Co-first authors
16. Martinig, AR, HJ Karst, ER Siracusa, EK Studd, AG McAdam, B Dantzer, **DM Delaney**, JE Lane, P Pokharel, S Boutin. 2022. Animal personality: a comparison of standardized assays and focal observations in North American red squirrels. *Animal Behaviour* 190:221–232.
15. Fargevieille, A, AM Reedy, A Kahrl, TS Mitchell, AM Durso, **DM Delaney**, PR Pearson, RM Cox, and DA Warner. 2022. Propagule size and sex ratio influence colonisation dynamics after experimental introduction of a non-native lizard. *Journal of Animal Ecology* 91:845–857.

14. Hinsley, C*, **DM Delaney**, and FJ Janzen. 2021. Use of accelerometers to monitor subterranean movement is challenging in small reptile nests. *Herpetological Review* 51:702–707.
13. **Delaney, DM**, LA Hoekstra, and FJ Janzen. 2021. Age predicts risky investment better than residual reproductive value. *American Naturalist* 4:461–472.
12. **Delaney, DM**, LA Hoekstra, and FJ Janzen. 2020. Becoming creatures of habit: among- and within-individual variation in nesting behaviour shift with age. *Journal of Evolutionary Biology* 33:1614–1624.
11. **Delaney, DM**, and FJ Janzen. 2020. Risk-sensitive maternal investment: an evaluation of parent-offspring conflict over nest site choice in the wild. *Animal Behaviour* 163:105–113.
10. Murphy*, KM, BL Bodensteiner, **DM Delaney**, JT Strickland, and FJ Janzen. 2020. Nest temperatures predict nest emergence of Painted Turtle (*Chrysemys picta*) offspring. *Chelonian Conservation and Biology* 19:72–77.
9. **Delaney, DM**. 2019. Antipredation behavior covaries with body size in Neotropical snakes. *Amphibia-Reptilia* 40:437–445.
8. Janzen, FJ, **DM Delaney**, TS Mitchell, and DA Warner. 2019. Do covariances between maternal behavior and embryonic physiology drive sex-ratio evolution under environmental sex determination? *Journal of Heredity* 110:411–421.
7. **Delaney, DM**, and FJ Janzen. 2019. Offspring dispersal ability covaries with nest-site choice. *Behavioral Ecology* 30:125–133.
6. **Delaney, DM**, FJ Janzen, and DA Warner. 2017. Nesting stage and distance to refuge influence terrestrial nesting behavior of Painted Turtles (*Chrysemys picta*). *Canadian Journal of Zoology* 95:837–841.
5. **Delaney, DM**, and DA Warner. 2017. Effects of age- and sex-specific density on behavior and survival in a territorial lizard (*Anolis sagrei*). *Animal Behaviour* 129:31–41.
4. **Delaney, DM**, and DA Warner. 2017. Adult male density influences juvenile microhabitat use in a territorial lizard. *Ethology* 123(2):157–167.
3. **Delaney, DM**, and DA Warner. 2016. Age- and sex-specific variations in microhabitat and macrohabitat use in a territorial lizard. *Behavioral Ecology and Sociobiology* 70(6):981–991.
2. **Delaney, DM**, MB Lovern, and DA Warner. 2016. Does reduced perch availability affect reproduction in the brown anole? An experimental test in the laboratory. *Journal of Herpetology* 5(2):227–232.
1. Hileman, ET, DR Bradke, **DM Delaney**, and RB King. 2015. Protection by association: implications of scent trailing in neonate Eastern Massasaugas (*Sistrurus catenatus*). *Herpetological Conservation and Biology* 10(2):654–660.

Peer-Reviewed Notes

6. **Delaney, DM**, R Brandt, CM Beaumont*, and DA Warner. 2021. *Anolis sagrei*. Egg-carrying behavior. *Herpetological Review* 52(3):643.
5. **Delaney, DM**, CD Cates, and DA Warner. 2014. *Anolis sagrei*. *Gopherus polyphemus* burrow commensalism. *Herpetological Review* 45(4):694.
4. Cates, CD, **DM Delaney**, AM Buckelew*, AM Durso, SS French, AM Reedy, and DA Warner. 2014. *Anolis sagrei*. Cannibalism. *Herpetological Review* 45(3):491.

3. Cates, CD, **DM Delaney**, AM Buckelew*, AM Durso, SS French, AM Reedy, and DA Warner. 2014. *Anolis sagrei*. Egg predation. *Herpetological Review* 45(3):491–492.
2. **Delaney, DM**, CD Cates, AM Buckelew*, Daniel M Delaney*, AM Durso, SS French, AM Reedy, and DA Warner. 2014. *Anolis sagrei*. Prey stealing behavior. *Herpetological Review* 45(2):324–325.
1. **Delaney, DM**, AM Reedy, TS Mitchell, AM Durso, KP Durso*, AJ Morrison*, and DA Warner. 2013. *Anolis sagrei*. Nest-site choice. *Herpetological Review* 44(2):314.

In Review

Delaney, DM, S Tiatragul, and DA Warner. *Anolis sagrei*. Arboreal nesting. In revision at *Herpetological Review*.

In Preparation (draft available)

Delaney, DM, B Dantzer, J Lane, S Boutin, and AG McAdam. Maternal and offspring environments collectively shape the offspring size and number tradeoff with consequences for maternal longevity. In prep.

Delaney, DM, B Dantzer, J Lane, S Boutin, and AG McAdam. Bivariate-response models are better suited to characterize variation in multivariate life histories than traditional univariate-response methods. In prep.

Delaney, DM, AG Klahs*, E Argueta*, AL Carter, and FJ Janzen. Location within nests influences the thermal environment experienced by developing embryos. In prep.

RESEARCH AND TRAVEL SUPPORT

2018: International Society for Behavioral Ecology Travel Award (\$500)

2018: ISU EEB Professional Development Grant (\$500)

2017: ISU GPSS Professional Development Grant (\$180)

2017: Society for Integrative and Comparative Biology Charlotte Mangum Student Support

2016: ISU GPSS Professional Development Grant (\$180)

2016: Society for Integrative and Comparative Biology Charlotte Mangum Student Support

2015: ISU GPSS Professional Development Grant (\$180)

2015: Society for Integrative and Comparative Biology Charlotte Mangum Student Support

2015: Alabama Academy of Science Travel Grant (\$26)

2014: UAB Department of Biology Travel Grant (\$400)

2014: UAB Ireland Travel Grant (\$1,000)

2014: UAB Department of Biology Travel Grant (\$384)

2014: Sigma Xi Grant-in-Aid (\$700)

2014: Alabama Academy of Science Research Grant (\$200)

2012: Arzeni Tropical Biology Award (\$1,000)

2012: Errett & Mazie Warner Award in Zoology (\$1,700)

2012: EIU Biological Sciences Undergraduate Research Grant (\$210)

2011: Embarras Valley Quail Unlimited Scholarship (\$342)

2009: EIU Biological Sciences Undergraduate Research Grant (\$250)

PRESENTATIONS AT SCIENTIFIC MEETINGS

Oral Presentations

- 2022: Kluane Red Squirrel Project Webinar, virtual. Multiple axes of the environment drive differential patterns of selection on red squirrel life history traits.
- 2021: Kluane Red Squirrel Project Working Group Meeting, virtual. Bivariate-response modeling for the analysis of life history tradeoffs.
- 2021: Society for Integrative and Comparative Biology, virtual. Age predicts risky investment better than residual reproductive value in a long-lived vertebrate.
- 2020: Kluane Red Squirrel Project Working Group Meeting, virtual. How do environmental variation, individual physiology, and genetic structure interact to shape phenotypic expression?
- 2019: Society for Integrative and Comparative Biology, Tampa, Florida. Risk-sensitive maternal investment: evaluating parent-offspring conflict over nest-site choice.
- 2018: International Society for Behavioral Ecology, Minneapolis, Minnesota. Offspring dispersal ability underpins maternal investment strategies.
- 2018: Iowa Association of Naturalists, Comanche, Iowa. Thirty years of turtle camp: the painted turtle's canvas.
- 2018: ISU Ecology and Evolutionary Biology Symposium, Ames, Iowa. Can offspring dispersal ability influence maternal investment strategies?
- 2018: 3-minute Theses of Ecology, Evolution, and Organismal Biology, Ames, Iowa. Costs and benefits of variation in maternal investment strategies.
- 2018: Society for Integrative and Comparative Biology, San Francisco, California. Can offspring dispersal ability influence maternal investment strategies?
- 2017: Society for Integrative and Comparative Biology, New Orleans, Louisiana. Density of adult lizards (*Anolis sagrei*) and time-of-day influence how juveniles orient themselves on arboreal perches.
- 2016: The Wildlife Society Winter Meeting (Iowa Chapter), Ames, Iowa. Nesting stage and distance to refuge, but not distance to predators, influences terrestrial nesting behavior in an aquatic turtle.
- 2015: Alabama Academy of Science, Livingston, Alabama. Does inter-age class competition influence habitat use in a territorial lizard?
- 2015: UAB Graduate Student Research Days, Birmingham, Alabama. Does inter-age class competition influence habitat use in a territorial lizard?
- 2015: Society for Integrative and Comparative Biology, West Palm Beach, Florida. Does inter-age class competition influence habitat use in a territorial lizard? – Selected to compete in the Division of Animal Behavior's Best Student Presentation Competition.
- 2014: Joint Meeting of Ichthyologists and Herpetologists, Chattanooga, Tennessee. Do adults drive variation in juvenile perching behaviors in a territorial lizard?
- 2014: UAB Graduate Student Research Days, Birmingham, Alabama. Do adults drive variation in juvenile perching behaviors in a territorial lizard? – 2nd Place

Poster Presentations

- 2019: Evolution, Providence, Rhode Island. Age is a good proxy for residual reproductive value in predicting investment behavior in a turtle.
- 2019: ISU Ecology and Evolutionary Biology Symposium, Ames, Iowa. Residual reproductive value does not equal age: methodology for more directly estimating RRV.

- 2016: ISU Ecology and Evolutionary Biology Symposium, Ames, Iowa. Nesting stage and distance to refuge, but not distance to predators, influences terrestrial nesting behavior in an aquatic turtle.
- 2016: Society for Integrative and Comparative Biology, Portland, Oregon. Nesting stage and distance to refuge, but not distance to predators, influences terrestrial nesting behavior in an aquatic turtle.
- 2014: Alabama Academy of Science, Alabama. Patterns of antipredation behavior in a Neotropical snake community.
- 2014: UAB Darwin Day Poster Session, Alabama. Patterns of antipredation behavior in a Neotropical snake community.
- 2012: Midwest Partners in Amphibian and Reptile Conservation, Ohio. Life-history characteristics of a population of Ring-necked Snakes (Colubridae: *Diadophis*) occupying anthropogenic habitat.
- 2012: World Congress of Herpetology, British Columbia, Canada. Life-history characteristics of a population of Ring-necked Snakes (Colubridae: *Diadophis*) occupying anthropogenic habitat.

GUEST AND INVITED LECTURES

- 2021: Walla Walla University Department of Biology Seminar. Causes and consequences of variation in maternal investment strategies in turtles.
- 2020: UCB Statistics Class. Use of general and generalized linear mixed models to assess risk-sensitive maternal investment.
- 2019: ISU Herpetology Class. Causes and consequences of variation in maternal investment strategies.
- 2018: ISU Herpetology Class. Costs and benefits of variation in maternal investment strategies.
- 2018: ISU Herpetology Class. Reptile Mating Systems.
- 2017: ISU Amphibian and Reptile Club. Does dispersal ability of offspring constrain maternal investment in snapping turtles?
- 2017: ISU Herpetology Class. Costs and benefits of variation in maternal investment strategies.
- 2017: ISU Amphibian and Reptile Club. Reptile research in the Pacific Northwest.
- 2016: ISU Herpetology Class. Antipredation behavior and habitat use in reptiles.
- 2016: ISU Amphibian and Reptile Club. Patterns of antipredation behavior in a Neotropical community of snakes.
- 2014: UAB Alpha Lambda Delta Honors Society. Research: How it can get you where you want to go.

TEACHING ASSISTANTSHIPS

Herpetology Lab – Iowa State University

- Fall 2019 (Instructor of record)
- Fall 2018 (Instructor of record)
- Fall 2017 (Instructor of record)
- Fall 2016

Principles of Biology Lab II – Iowa State University

- Spring 2020
- Spring 2018

D. M. Delaney – Curriculum vitae

Fundamentals of Human Physiology Lab – Iowa State University
Spring 2017

Introductory Biology II Lab – University of Alabama at Birmingham
Spring 2015
Fall 2014

Introductory Biology I Lab – University of Alabama at Birmingham
Spring 2014
Fall 2013

MENTORSHIP

Listed are students mentored

Undergraduate Student Researchers

Cecilia Hensley – Do thermal conditions influence hatching and subsequent activity within nests? Conducted in 2019 through ISU. Manuscript published in *Herpetological Review*.

Abby Klahs & Estefany Argueta – Does location within a nest influence the thermal environment experienced by turtle embryos? Conducted in 2018 through ISU. Abby helped conceive the project and collect data as an REU student. Estefany cleaned and formatted the data and began writing the paper as a McNair scholar. Manuscript in preparation.

Kaitlyn Murphy – How do nest thermal conditions influence emergences behaviors in a turtle? Conducted in 2016 & 2017 through ISU as an REU student. Manuscript published in *Chelonian Conservation and Biology*.

Sydney Pulliam – Does female age influence the balance of investing into reproduction vs safety when exposed to elevated risk? Conducted in 2017 as a George Washington Carver intern through ISU.

Dalton Williams – Characterization of the thermal conditions experienced by a turtle outside of its native range. Conducted in 2015 through UAB.

Agam Dhawan – Does adult density and/or sex ratio affect the growth of juvenile lizards? Conducted in 2013 & 2014 through UAB.

Undergraduate Students Teaching Assistants

Marie Peng – Principles of Biology Lab, ISU, 2020

Kelsi Hagerty – Herpetology Lab, ISU, 2017

Madison Sharp & Sarah Baas – Fundamentals of Human Physiology Lab, ISU, 2017

Amanda Kindred – Herpetology Lab, ISU, 2016

High School Student Researchers

Shelby Truckenbrod and Michael Cupicciotti – Turbo turtles: does female age and/or size influence locomotor ability or escape behavior? Conducted during the 2018 NSF funded program Turtle Research and Education in Ecology through ISU.

Isaiah Lieberenz and Nathan Kutok – Are there costs to living in an environment with cacti?
Conducted during the 2016 NSF funded program Turtle Research and Education in Ecology through ISU.

High School Student Classwork

Valorie Bohl – Valorie emailed me in 2017 as a student at Valley High School (Iowa) for suggestions on controversial issues in zoology to write an essay about in her Advanced Composition class. She researched and wrote on the issues holding us back, both technologically and ethically, from cloning woolly mammoths.

I attended an Undergraduate Mentor Training Workshop in 2018 at ISU

DATA, ANALYTIC, AND TECHNOLOGICAL SKILLS – proficient in the following

Analytic programs

R
SAS
JMP
MARK
Excel

Graphing software

R
SigmaPlot
JMP
Excel

Field technology

Radiotelemetry
Thermal loggers (iButton)
Accelerometers (HOBO)
Camera Traps
PIT tags
Medical cautery units

Modeling experience

Experimental & study design
General and generalized linear mixed models
Selection analysis
Mark-recapture analysis via MARK and RMark
Cormack-Jolly-Seber
Nest Survival
Repeatability and heritability
Multivariate Bayesian hierarchical analysis
Spatial analysis with R package adehabitatHR
Accelerometer data analysis

Data management programs

R
Microsoft Excel
SQL
Github

FIELD WORK EXPERIENCE

Collectively spent more than 18 months conducting field research and tent camping at field sites in FL, OR, WA, IL, IA, CO, Yukon (Canada)

Have (and am comfortable) trapping, handling, and collecting tissue from the following:

Reptiles (snakes, lizards, and turtles)
Amphibians (frogs and salamanders)
Small mammals (mice, kangaroo rats, racoons, opossums)
Insects (aquatic and terrestrial)

Good at identifying Midwestern trees

Beginner at identifying Midwestern prairie plants

ORGANIZATIONAL AFFILIATIONS

Society for Integrative and Comparative Biology
American Society of Naturalists
Society for the Study of Evolution
Practical Farmers of Iowa

PROFESSIONAL AND SERVICE ACTIVITIES

Journal Referee for –

Biological Journal of the Linnean Society (x2), *Journal of Zoology* (x4), *Canadian Journal of Zoology* (x5), *Journal of Experimental Zoology A* (x3), *Integrative and Comparative Biology*, *Quarterly Review of Biology*, *Breviora*, *Journal of Herpetology*, *Herpetologica*, *Herpetological Review* (x2), *Life: The Excitement of Biology* (x3), *Herpetological Conservation and Biology* (x4), *Herpetology Notes* (x2), *Asian Herpetological Research*, *PeerJ*, and *Animal Biology* (x2)

Participant, Diversity, Equity, and Inclusion workshop at CU Boulder (2021)

Session chair, SICB annual meeting (2021)

Poster judge, Division of Animal Behavior, SICB (2021)

Participant, Graduate Peer Inclusion Workshop, ISU (2018)

Participant, Project LEA/RN Workshop (Learning Enhancement Action/Resource Network), ISU (2018)

Social Co-chair, Graduate Research in Evolutionary Biology and Ecology, ISU (2018–2019)

Facilities Committee Representative, Graduate Student Organization, ISU (2018–2019)

Associate Editor, Writers' Guild of ISU (2017–2018)

Secretary – Graduate Student Organization, ISU (2016–2017)

Anole Annals Contributor (since 2015)

Outreach presentation – St. Cecilia STEM Club (2015)

Science Fair Judge, Avondale Alabama Middle School (2015)

Graduate Student Committee Member, Herpetologists' League (2014–2016)

Conservation Committee Member, American Society for Ichthyologists and Herpetologists (2014–2015)

Graduate Student Association Senator, UAB (2014–2015)

Mentor, Society for the Study of Amphibians and Reptiles Mentorship Program (2014)

Darwin Day Event Student Organizer, UAB (2014)

Undergraduate Research Expo Judge, UAB (2014)

Reviewer, Gorgas Scholarship, Alabama Academy of Science (2014)

Field Events Coordinator - Marine and Field Biology Club, UAB (2013–2015)

Field assistant, Species Survival Plan for the Eastern Massasauga Rattlesnake, Michigan (2013)

REFERENCES

Andrew McAdam (Postdoc advisor)

Andrew.McAdam@colorado.edu

University of Colorado Boulder

Boulder, Colorado, USA

Cassandra Nuñez (Ph.D. committee member)

cmnunez@memphis.edu

University of Memphis

Memphis, Tennessee, USA

D. M. Delaney – Curriculum vitae

Fred Janzen (Ph.D. advisor)
janzenf1@msu.edu
Kellogg Biological Station
Hickory Corners, Michigan, USA

Amy Toth (Ph.D. committee member)
amytoth@iastate.edu
Iowa State University
Ames, Iowa, USA

Dan Warner (M.S. advisor)
Dan.Warner@auburn.edu
Auburn University
Auburn, Alabama, USA