

## Dr. Brenna A. Levine, Ph.D.

Curriculum Vitae

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### EDUCATION

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<b>Postdoctoral Research Associate</b> , The University of Tulsa, Tulsa OK	2019 - 2021
<b>Ph.D. Biology</b> , University of Arkansas, Fayetteville, AR	2018
<b>M.S. Biology</b> , University of Arkansas, Fayetteville, AR	2013
<b>B.S. Wildlife Biology</b> , Colorado State University, Fort Collins, CO	2010

### PEER-REVIEWED PUBLICATIONS

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- 2023 Booth W, **Levine BA**, Corush JB, Davis MA, Dwyer Q, de Plecker R, Schuett GW. Discovery of facultative parthenogenesis in a new world crocodile. *Biology Letters*. DOI: <https://doi.org/10.1098/rsbl.2023.0129>
- 2022 **Levine BA**, Hill RL, Mendelson III JR, Booth W. 2022. Parentage assignment reveals multiple paternity in the critically-endangered Guatemalan beaded lizard (*Heloderma charlesbogertii*). *Conservation Genetics*. DOI: 10.1007/s10592-022-01448-4
- Lewis CD, **Levine BA**, Schal C, Vargo EL, Booth W. 2022. Decade long upsurge in mutations associated with pyrethroid resistance in bed bug populations in the USA. *Pest Science*. DOI: 10.1007/s10340-022-01505-4
- Nafus MG, Siers SR, **Levine BA**, Quiogue ZC, Yackel Adams AA. 2022. Demographic response of brown treesnakes to extended population suppression. *Journal of Wildlife Management and Wildlife Monographs*, 86: e22136. DOI: 10.1002/jwmg.22136
- 2021 **Levine BA**, Douglas MR, Yackel Adams AA, Lardner B, Reed RN, Savidge JA, Douglas ME. 2021. Trait heritability and its implications for the management of an invasive vertebrate. *Biological Invasions*, 23: 3447 – 3456. DOI: 10.1007/s10530-021-02588-3
- Levine BA**, Schuett GW, Booth W. 2021. Exceptional long-term sperm storage by a female vertebrate. *PLoS One*, 16: e0252049. DOI: 10.1371/journal.pone.0252049
- Levine BA**, Yackel Adams AA, Douglas MR, Douglas ME, Nafus MG. 2021. Female longevity during toxicant treatment predicts survival probability of

- offspring in invasive brown treesnakes. *Global Ecology and Conservation*, 31: DOI: 10.1016/j.gecco.2021.e01827
- 2020 **Levine BA**, Schuett GW, Clark RW, Repp RA, Herrmann H-W, Booth W. **2020**. No evidence of male-biased sexual selection in a snake with conventional Darwinian sex roles. *Royal Society Open Science*, 7: 201261. DOI: 10.1098/rsos.201261
- Lewis CD, **Levine BA**, Vargo EL, Schal C, Booth W. **2020**. Recent detection of multiple populations of the tropical bed bug (Hemiptera: Cimicidae) exhibiting *kdr*-associated mutations in Hawaii. *Journal of Medical Entomology*, 57: 1077-1081. DOI: 10.1093/jme/tjaa022
- 2019 **Levine BA**, Douglas MR, Yackel Adams AA, Lardner B, Reed RN, Savidge JA, Douglas ME. **2019**. Genomic pedigree reconstruction identifies predictors of mating and reproductive success in an invasive vertebrate. *Ecology and Evolution*, 9: 11863-11877. DOI: 10.1002/ece3.5694
- 2016 **Levine BA**, Smith CF, Douglas MR, Davis MA, Schuett GW, Beaupre SJ, Douglas ME. **2016**. Population genetics of the copperhead at its most northeastern distribution. *Copeia*, 104: 448 – 457. DOI: 10.1643/CG-13-150.
- 2015 **Levine BA**, Smith CF, Schuett GW, Douglas MR, Davis MA, Douglas ME. **2015**. Bateman-Trivers in the 21<sup>st</sup> century: sexual selection in a North American pitviper. *Biological Journal of the Linnean Society*, 114: 436 – 445. DOI: 10.1111/bij.12434
- 2013 Mathies T, **Levine BA**, Engeman R, Savidge JA. **2013**. Pheromonal control of the invasive brown treesnake: potency of female sexual attractiveness pheromone varies with ovarian state. *International Journal of Pest Management*, 59: 141 – 149. DOI: 10.1080/09670874.2013.784374
- 2011 Mathies T, Scarpino R, **Levine BA**, Clark C, Savidge JA. **2011**. Excluding non-target species from brown treesnake, *Boiga irregularis* (Reptilia: Colubridae), bait stations: experimental tests of station design and placement. *Pacific Science*, 65: 41 – 57. DOI: 10.2984/65.1.041

## **PUBLISHED DATASETS**

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- 2023 **Levine BA**, Booth W. **2023**. Discovery of facultative parthenogenesis in a new world crocodile. DRYAD, DOI: 10.5061/dryad.sqv9s4x1
- 2021 **Levine BA**, Yackel Adams AA. **2021**. Brown Treesnake mating and reproductive success on Guam: U.S. Geological Survey data release. DOI: 10.5066/P9X1AKVJ

- Levine BA**, Yackel Adams AA. **2021**. Offspring, dam, and sire pedigree assignments in a managed population of brown treesnakes on Guam: U.S. Geological Survey data release, DOI: 10.5066/P9STNBGE
- 2019 **Levine BA**, Douglas MR, Yackel Adams AA, Lardner B, Reed RN, Savidge JA, Douglas ME. **2019**. Data from: Genomic pedigree reconstruction identifies predictors of mating and reproductive success in an invasive vertebrate. DRYAD, DOI: 10.5061/dryad.47ss1b4

## MANUSCRIPTS IN REVIEW

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- 2023 **Levine B**, Moresco A, Trout T, Schuett GW, Booth W. **In review**. Female long-term sperm storage results in viable offspring in the Himalayan mountain viper, *Ovophis monticola*. *Zoo Biology*.

## CONFERENCE PRESENTATIONS

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### Oral Presentations

- 2023 **Levine BA**, Largotta N, Booth W. ParthenoGenius: A heuristic for inferring parthenogenesis in reptiles using genetic and genomic data. *Northeast Partners in Amphibian and Reptile Conservation 2023*. Wesleyan University, Middletown, CT.
- Levine BA**, Booth W. ParthenoGenius: A user-friendly heuristic for inferring presence and mode of facultative parthenogenesis using genomic data sets. *Climbing Higher Together 1*. Kean University, Union, NJ.
- 2019 **Levine BA**, Schuett GW, Clark RW, Herrmann H-W, Booth W. Bateman gradients and sexual selection in the rattlesnake *Crotalus atrox* and other North American pitvipers. *Biology of the Pitvipers III*. Rodeo, NM.
- 2018 **Levine BA**, Douglas MR, Savidge JA, Lardner B, Reed RN, Yackel Adams A, Douglas ME. Genomic pedigree reconstruction provides novel insight into the reproductive ecology of the brown treesnake (*Boiga irregularis*) on Guam. *Joint Meeting of Ichthyologists and Herpetologists*. Rochester, NY.
- 2017 **Levine BA**, Douglas MR, Anthonysamy WJB, Brewster CL, Elliot HD<sup>1</sup>, Douglas ME. Contemporary population connectivity of the Eastern collared lizard (*Crotaphytus collaris collaris*) in Arkansas. *Joint Meeting of Ichthyologists and Herpetologists*. Austin, TX.
- 2015 **Levine BA**, Smith CF, Schuett GW, Douglas MR, Davis MA, Douglas ME.

- Reproductive success and sexual selection in a North American pitviper. *Joint Meeting of Ichthyologists and Herpetologists*. Reno, NV.
- 2014 **Levine BA**, Smith CF, Schuett GW, Douglas MR, Davis MA, Douglas ME. Reproductive success and sexual selection in a North American pitviper. *Biology of the Pitvipers II*. Tulsa, OK.
- 2013 **Levine BA**, Smith CF, Douglas MR, Davis MA, Beaupre SJ, Schuett GW, Douglas ME. Genetic structure of the copperhead (*Viperidae: Agkistrodon contortrix*) at its most northern distribution. *Joint Meeting of Ichthyologists and Herpetologists*. Albuquerque, NM.
- 2009 Mathies T, Engeman RM, **Levine BA**, Savidge JA. Expression of sex pheromone by female brown treesnakes during vitellogenesis and when reproductively quiescent. *POETS Club Lecture Series*. Mangilao, Guam.
- 2009 Mathies T, Engeman RM, **Levine BA**, Savidge JA. Expression of sex pheromone by female Brown treesnakes during vitellogenesis and when reproductively quiescent. *Brown Treesnake Working Group Technical Meeting*. Saipan.
- 2008 Mathies T, **Levine BA**, Daniels E, Savidge JA, Clark CS, Fagerstone KA. Accessibility of different types of brown treesnake bait stations in different placement situations by four non-target species. *Brown Treesnake Working Group Technical Meeting*. Honolulu, HI.

### Poster Presentations

- 2022 \*Patil S, \*Crawford L, \*Gonzalez C, \*Moffitt A, \*Rivera T, **Levine BA**. Morphological variation in invasive spotted lanternflies across a rural-urban mosaic landscape. *Kean Research Days*, Union, NJ.  
\*Kean University undergraduate authors
- 2016 **Levine BA**, Douglas MR, Savidge JA, Lardner B, Reed RN, Douglas ME. SNP discovery for parentage and kinship analyses in the Brown Treesnake (*Boiga irregularis*) on Guam. *Joint Meeting of Ichthyologists and Herpetologists*. New Orleans, LA.
- 2015 Cole JM, Brewster C, Anthonysamy WJB, **Levine BA**, Martin B, Douglas MR, Douglas ME. Identifying evolutionary significant units in Eastern collared lizard (*Crotaphytus collaris*) from Arkansas. *Joint Meeting of Ichthyologists and Herpetologists*. Reno, NV.
- 2014 **Levine BA**, Smith CF, Schuett GW, Douglas MR, Davis MA, Douglas ME. Reproductive success and sexual selection in a North American pitviper. *From*

*Abstract to Contract: University of Arkansas Graduate Student Poster Competition. Fayetteville, AR.*

- 2012 **Levine BA**, Douglas MR, Davis MA, Beaupre SJ, Smith CF, Douglas ME. Genetic structure of the Copperhead (Viperidae: *Agkistrodon contortrix*) at its most Northern distribution. *From Abstract to Contract: University of Arkansas Graduate Student Poster Competition. Fayetteville, AR.*

**Levine BA**, Smith CF, Douglas MR, Davis MA, Beaupre SJ, Schuett GW, Douglas ME. Genetic structure of the copperhead (Viperidae: *Agkistrodon contortrix*) at its most Northern distribution. *World Congress of Herpetology. Vancouver, BC.*

## SEMINARS

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- 2023 *Sex and the squamate: Reptiles as a model for studying reproductive modes and sexual selection* (February 14, 2023)  
Department of Biology Seminar Series, Kean University, Union, NJ
- 2018 *Evolutionary dynamics of brown treesnake reproductive ecology, and its implication for invasive species control* (November 9, 2018)  
Fall Seminar Series – The University of Tulsa, Tulsa, IL

## MEDIA COVERAGE

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- 2023 Interviewed by Zenith Wolfe on crocodile parthenogenesis research. *Cottage Life Magazine*. 26 June 2023. <https://cottagelife.com/general/first-virgin-crocodile-birth-recorded-in-costa-rica-zoo/>
- Interviewed by Jason Bittel on crocodile parthenogenesis research. *National Geographic*. 15 June 2023.  
<https://www.nationalgeographic.com/animals/article/american-crocodiles-virgin-birth-parthenogenesis>
- Interviewed by Lewis Vaughan Jones. *BBC World News* live broadcast. 7 June 2023.  
[www.youtube.com/watch?v=oEnYAvSTHaI](http://www.youtube.com/watch?v=oEnYAvSTHaI)
- Interviewed by Michael Salvatore and Barbara George Johnson. *Urban Impact* podcast, Kean University. 28 February 2023.  
[www.kean.edu/news/urban-impact-episode-4-urban-invasion-how-invasive-species-could-collapse-entire-ecosystems](http://www.kean.edu/news/urban-impact-episode-4-urban-invasion-how-invasive-species-could-collapse-entire-ecosystems)
- 2022 Interview. *Kean News* video, Kean University. 27 October 2021.  
[www.kean.edu/news/spotted-lanternfly-why-it-so-bad](http://www.kean.edu/news/spotted-lanternfly-why-it-so-bad)

Interview. *The Tower* newspaper article, Kean University. 11 October 2021.

<http://kutower.com/2021/10/11/wanted-dead-or-alive-the-spotted-lanternfly/>

## UNIVERSITY TEACHING

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### Kean University

2023 *Zoology: Form and Function (BIO 3400 – Sec. 02 and 05)*

2022 *Introduction to Biology I (BIO 1300 – Sec. 02), Zoology: Form and Function (BIO 3400 – Sec. 03 and 06), Online Introduction to Biology I (BIO 1300 ONH – Sec. 01), Online Zoology: Form and Function (BIO 3400 ONH – Sec. 01)*

2021 *Introduction to Biology I (BIO 1300 – Sec. 01), Zoology: Form and Function (BIO 3400 – Sec. 03)*

### The University of Tulsa

2020 *Introduction to Coding for Biologists*

### University of Arkansas

2012 – 2018 *Human Physiology Lab*

2012 *AP Biology Teacher Training (Advanced Placement Summer Institute)*

2011 – 2012 *Global Change Biology*

2010 *Principles of Biology Lab*

## RESEARCH MENTEES

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### Kean University

2023 – Present      Nicolas Largotta

2022 – 2022      Alyssa Moffitt

2021 – 2022      Claudia Gonzalez

Tamara Rivera

Sneha Patil

2021 – 2021      Lloyd Crawford

### The University of Tulsa

2021 – 2021      Morgan Beeman (graduate student)

2020 – 2021      Laci Cartmell (graduate student)

2019 – Present      Cari Lewis (graduate student)

### University of Arkansas

2017 – 2018      Avery Elliot

2016 – 2017      Hayden Elliot

2014 – 2015      Jared Cole

## **AWARDS AND HONORS**

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- 2017 *Nominee – J. Hillman Yowell Award for Excellence in Teaching*  
University of Arkansas
- 2016 *Nominee – PEO Scholar Award*  
Philanthropic Educational Organization
- 2012 *2<sup>nd</sup> Place in Cell and Molecular Biology (\$100.00)*  
From Abstract to Contract Graduate Student Poster Competition,  
University of Arkansas
- 2006 – 2010 *Hughes Undergraduate Research Scholar*  
*Provost Scholar*  
Colorado State University
- 2006 – 2007 *Ralph and Lillian Fish Endowment Scholarship*  
Colorado State University

## **UNIVERSITY SERVICE**

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### **Kean University**

- 2023 GPA Committee (Department-Level)  
Grade Grievance Committee (Department-Level)  
Nancy Thompson Learning Commons Committee (University-Level)
- 2022 Workshop for Kean Scholar Academy (Feb. 5, 2022; University-Level)  
GPA Committee (Department-Level)  
Zoology: Form and Function Course Revision (Department-Level)
- 2021 GPA Committee (Department-Level)  
Search Committee for Cell Biologist (Department-Level)

## **EXTERNAL SERVICE**

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### **Journal Service**

#### Associate Editor

2022 – Present *Management of Biological Invasions* (Q1)

#### Reviewer

*Herpetological Conservation and Biology*

*Journal of Heredity*

*Journal of Herpetology*

*Journal of Medical Entomology*

*PLoS One*

**Scientific Advisory Boards**

- 2018 – Present Chiricahua Desert Museum  
2014 – 2018 Copperhead Institute

**Other**

- 2023 Judge, New Jersey Southern Junior Science and Humanities Symposium  
2020 Guest Lecturer, Invasion Biology Course, The University of Tulsa, Tulsa, Oklahoma  
2019 Guest Lecturer, Herpetology Course, University of Illinois, Champaign-Urbana, Illinois  
2018 Judge, Northwest Arkansas Regional Science Fair, Fayetteville, Arkansas  
Guest Lecturer, The New School, Fayetteville, Arkansas  
2017 Guest Lecturer, Upward Bound Program, Fayetteville, Arkansas  
Set-Up and Safety Committee, Northwest Arkansas Regional Science Fair, Fayetteville, Arkansas  
2016 Guest Lecturer, Conservation Genetics Course, University of Arkansas, Fayetteville, Arkansas  
Guest Lecturer, Fayetteville High School, Fayetteville, Arkansas  
Judge, Northwest Arkansas Regional Science Fair, Fayetteville, Arkansas  
2015 Guest Lecturer, Fayetteville High School, Fayetteville, Arkansas

**FUNDED GRANTS**

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- 2023 *BRC-BIO: Effects of urbanization on the evolutionary dynamics of invasive species range expansion (\$471,223)*  
Funding Agency: National Science Foundation

*Released-Time for Research: Using genomic relatedness to quantify dispersal distance in invasive spotted lanternflies across a rural-urban mosaic landscape (6 credits of release time)*

Funding Agency: VPAA, Kean University

- 2022 *Released-Time for Research: Genetic connectivity of populations of a rapidly expanding invasive species across a rural-urban mosaic landscape (6 credit hours for AY 2022 - 2023)*  
Funding Agency: Kean University

**\*Note: All RTR hours taken during Spring 2023 (began Jan. 17, 2023)**

- 2021 *Special Project – Spotted lanternfly landscape genetics (\$13,690)*



Funding Agency: Office of Research and Sponsored Programs, Kean University

2017 *Conference travel grant (\$1100.00)*

Funding Agency: University of Arkansas

2016 *Conference travel grant (\$1100.00)*

Funding Agency: University of Arkansas

2015 *Grant-in-Aid of Research (\$500.00)*

Funding Agency: Sigma Xi Honor Society

2015 *Conference travel grant (\$1100.00)*

Funding Agency: University of Arkansas

2014 *Conference travel grant (\$1100.00)*

Funding Agency: University of Arkansas

2013 *Conference travel grant (\$1100.00)*

Funding Agency: University of Arkansas

2012 *Conference travel grant (\$1100.00)*

Funding Agency: University of Arkansas