

## JESSICA L. TINGLE

NSF POSTDOCTORAL FELLOW, UNIVERSITY OF AKRON

jessica\_tingle@brown.edu | jleetingle.com

### PROFESSIONAL APPOINTMENTS

---

<b>Assistant Professor, Brown University</b> Department of Ecology, Evolution and Organismal Biology	<i>start date 7/2025</i>
<b>NSF Postdoctoral Fellow, University of Akron</b> Department of Biology Sponsoring scientist: Henry Astley	9/2023–6/2025
<b>Postdoctoral Researcher, University of Akron</b> Department of Biology Advisor: Henry Astley	10/2021–8/2023

### EDUCATION

---

<b>Ph.D. Evolution, Ecology, and Organismal Biology</b> University of California, Riverside; Advisor: Theodore Garland, Jr.	2021
<b>B.S. Biological Sciences</b> Cornell University; Cum Laude and Distinction in Research	2012

### PEER-REVIEWED PUBLICATIONS

---

- 13 **Tingle, J.L.**, K.L. Garner, and H.C. Astley. 2024. Functional diversity of snake locomotor behaviors: A review of the biological literature for bioinspiration. *Annals of the New York Academy of Sciences* 1533(1): 16-37.
- 12 Garner, K.L., J.M. Ryan, **J.L. Tingle**, C.A.M. Hickerson, C.D. Anthony. 2024. Covariation and repeatability of aggressive and risk-taking behaviors in a terrestrial salamander (*Plethodon cinereus*). *Animal Behaviour* 213: 1-10.
- 11 **Tingle, J.L.**, B.M. Sherman, and T. Garland, Jr. 2023. Locomotor kinematics on sand vs. vinyl flooring in the sidewinder rattlesnake *Crotalus cerastes*. *Biology Open* 12: bio060146.
- 10 **Tingle, J.L.**, D.J. Jurestovsky, and H.C. Astley. 2023. The relative contributions of multiarticular snake muscles to movement in different planes. *Journal of Morphology* 284(6): e21591.
- 9 Jurestovsky, D.J., **J.L. Tingle**, and H.C. Astley. 2022. Corn snakes show consistent sarcomere length ranges across muscle groups and ontogeny. *Integrative Organismal Biology* 4(1): obac040.

- 8 **Tingle, J.L.**, B.M. Sherman, and T. Garland, Jr. 2022. Scaling and relations of morphology with locomotor kinematics in the sidewinder rattlesnake *Crotalus cerastes*. *Journal of Experimental Biology* 225(7): jeb243817.
- 7 Rieser, J.M., T-D. Li, **J.L. Tingle**, D.I. Goldman, and J.R. Mendelson III. 2021. Functional consequences of convergently-evolved microscopic skin features on snake locomotion. *Proceedings of the National Academy of Sciences* 118(6): e2018264118.
- 6 **Tingle, J.L.** and T. Garland, Jr. 2021. Morphological evolution in relationship to sidewinding, arboreality, and precipitation in snakes of the family Viperidae. *Biological Journal of the Linnean Society* 132(2):328-345.
- 5 **Tingle, J.L.** 2020. Facultatively sidewinding snakes and the origins of locomotor specialization. *Integrative and Comparative Biology* 60(1):202-214.
- 4 **Tingle, J.L.**, G.E.A. Gartner, B.C. Jayne, and T. Garland, Jr. 2017. Ecological and phylogenetic variability in the in the spinalis muscle of snakes. *Journal of Evolutionary Biology* 30(11):2031-2043.
- 3 **Tingle, J.L.** and T. Slimani. 2017. Snake charming in Morocco. *Journal of North African Studies* 22(4):560-577.
- 2 **Tingle, J.L.**, S.C. Cook-Patton, and A.A. Agrawal. 2016. Spillover of a biological control agent (*Chrysolina quadrigemina*) onto native St. Johnswort (*Hypericum punctatum*). *PeerJ* 4:e1886.
- 1 **Tingle, J.L.** 2012. Field observations on the behavioral ecology of the Madagascan leaf-nosed snake, *Langaha madagascariensis*. *Herpetological Conservation and Biology* 7:442-448.

---

#### INVITED PERSPECTIVES

- 3 Deitloff, J.M., B.E. Espinoza, and **J.L. Tingle**. 2023. The History of SSAR's Diversity, Equity, and Inclusion Committee. *Herpetological Review* 54(1):52-57.
- 2 **Tingle, J.L.** 2020. Cultivating inclusive communities in taxon-focused societies. *Herpetological Review* 51(3):663-665.
- 1 **Tingle, J.L.** 2013. Developing an undergraduate herpetology club at Cornell University. *Herpetological Review* 44(2):185-187.

#### GRANTS AND FELLOWSHIPS

**TOTAL: \$492,056**

---

**Postdoctoral Research Fellowship in Biology, Award #2305218**  
National Science Foundation

**\$240,000, 2023–26**

<b>NSF Division of Environmental Biology Award #2016872</b>	<b>\$46,586*</b> , 2020
Diversity, Equity, and Inclusion in Herpetology and Ichthyology	
* <i>Co-wrote the proposal, but listed as Senior Personnel because NSF rules prohibit graduate students from serving as co-PIs</i>	
<b>Symposium sponsorship grants for the Joint Meeting of Ichthyologists and Herpetologists (JMIH)</b>	<b>\$5,500</b> , 2019
Society for the Study of Reptiles and Amphibians, \$2,000	
Herpetologists League, \$2,000	
American Society of Ichthyologists and Herpetologists, \$1,500	
<b>Dissertation Year Fellowship</b>	<b>\$7,200</b> , 2019
University of California, Riverside	
<b>Spieth Memorial Graduate Award in Biology</b>	<b>\$1,000</b> , 2019
UCR Department of Evolution, Ecology, and Organismal Biology	
<b>Graduate Dean's Dissertation Research Grant</b>	<b>\$800</b> , 2019
UC Riverside Graduate Division	
<b>E.E. Williams Research Grant</b>	<b>\$1,000</b> , 2018
Herpetologists' League	
<b>Vaughan H. Shoemaker Graduate Fellowship</b>	<b>\$750</b> , 2017
UCR Department of Evolution, Ecology, and Organismal Biology	
<b>Fellowship for Graduate Student Travel</b>	<b>\$1,400</b> , 2017
Society for Integrative and Comparative Biology	
<b>Graduate Research Fellowship</b>	<b>\$138,000</b> , 2015–2020
National Science Foundation	
<b>Chancellor's Distinguished Fellowship</b>	<b>\$25,000</b> , 2015–2016
University of California, Riverside	
<b>Fulbright Scholarship (Morocco)</b>	<b>\$15,220</b> , 2014
U.S. Department of State	
<b>Critical Language Enhancement Award (Arabic)</b>	<b>\$7,600</b> , 2013–2014
U.S. Department of State	
<b>Hughes Scholars Program</b>	<b>\$2,000</b> , 2010
Howard Hughes Medical Institute	

---

#### HONORS AND AWARDS

---

<b>Outstanding Teaching Assistant Award</b>	2019/2020
UC Riverside Graduate Division	2017/2018

<b>James and Margaret Lesley Annual Prize, \$675</b> UC Riverside College of Natural and Agricultural Sciences	1/2020
<b>First place, Grad Slam Finalists at UCR Palm Desert, \$500</b> UC Riverside Palm Desert campus	4/2019
<b>Second runner up, Grad Slam Finals, \$1,000</b> UC Riverside Graduate Division	3/2019
<b>James Merrill and Adeline Wallace Annual Prize, \$2,000</b> UC Riverside College of Natural and Agricultural Sciences	2/2019
<b>First place, Science Slam, \$500</b> UC Riverside College of Natural and Agricultural Sciences	11/2018
<b>First runner up, Graduate Research Award, \$250</b> Herpetologists' League	7/2018
<b>First place (tie), GradFest Student Presentation Competition, \$50</b> UC Riverside Department of Evolution, Ecology, and Organismal Biology	3/2018
<b>First place, Student Research Presentation Competition, \$75</b> Southwest Herp Fest (regional conference)	2/2017

#### INVITED TALKS

---

<b>Society for Integrative and Comparative Biology</b> Symposium: <i>From evolution to innovation: Bridging biology and engineering through bioinspired design</i> . Organized by Cassandra Donatelli and Karly Cohen.	<i>upcoming</i> 1/2025
<b>Society for the Study of Amphibians and Reptiles</b> Symposium: <i>Functional morphology of amphibians and reptiles: New theory and technology in the post-Gans era</i> . Organized by David Blackburn.	<i>upcoming</i> 6/2024
<b>Georgia Institute of Technology</b> School of Biological Sciences seminar	3/2024
<b>Northern Kentucky University</b> Department of Biological Sciences seminar series	10/2023
<b>Case Western Reserve University</b> Department of Biology seminar series	9/2023
<b>Syracuse University</b> Biology Department seminar series	4/2023
<b>Loma Linda University</b> Biology seminar series	2/2022

- California Academy of Sciences** 3/2021  
Speaker series for a special event: *Snake Patrick's Day*
- Society for Integrative and Comparative Biology** 1/2020  
Symposium: *Long limbless locomotors: the mechanics and biology of elongate, limbless vertebrate locomotion*. Organized by Henry Astley.

---

### SELECTED CONFERENCE PRESENTATIONS

---

- Oral presentation at the Society for Integrative and Comparative Biology annual meeting:** *An in vivo examination of snake muscle shortening and vertebral column curvature using X-ray video*. (January 2024; Seattle, WA)
- Poster presentation at the American Society of Biomechanics annual meeting:** *A mathematical modelling approach to the mechanics of multiarticular muscles*. (August 2023; Knoxville, TN)
- Oral presentation at the Society for Integrative and Comparative Biology annual meeting:** *Contributions of multiarticular snake muscles to movement in different planes*. (January 2023; Austin, TX)
- Oral presentation at the Joint Meeting of Ichthyologists and Herpetologists:** *Stereotype threat as a barrier to belonging, and what we can do about it*. (July 2022; Spokane, WA)
- Oral presentation at the Society for Integrative and Comparative Biology annual meeting:** *Relating morphology, kinematics, and performance in the sidewinder rattlesnake (*Crotalus cerastes*)*. (January 2022; Phoenix, AZ)
- Oral presentation at the Society for Integrative and Comparative Biology annual meeting:** *Morphological evolution in relation to sidewinding, arboreality, and precipitation in snakes of the family Viperidae*. (January 2021; virtual)
- Poster presentation at the Joint Meeting of Ichthyologists and Herpetologists:** *What determines vertebral count in snakes?* (July 2019; Snowbird, UT)
- Oral presentation at the Society for Integrative and Comparative Biology annual meeting:** *Body size and shape influence kinematics of sidewinding locomotion in the rattlesnake *Crotalus cerastes** (January 2019; Tampa, FL)
- Oral presentation at the Joint Meeting of Ichthyologists and Herpetologists:** *Scaling of morphology and locomotion in the sidewinder rattlesnake, *Crotalus cerastes** (July 2018; Rochester, NY)
- Oral presentation at the Society for Integrative and Comparative Biology annual meeting:** *Effects of body size and morphology on sidewinding kinematics in the rattlesnake *Crotalus cerastes** (January 2018; San Francisco, CA)

## TEACHING AND MENTORSHIP

---

### TEACHING EXPERIENCE

- Guest Lecturer for BIOL 3345: Herpetology** spring 2024  
Schreiner University
- Undergraduate course
  - Guest lecture on snake biomechanics and functional morphology
- Guest Lecturer for BIOL 701: Research Techniques in Integrated Bioscience** fall 2023  
University of Akron
- Graduate course
  - Two lectures covering experimental design, data quality, and statistical analysis
- Guest Lecturer for BIOL 797: Integrated Bioscience Colloquium** spring 2022  
University of Akron
- Graduate seminar
  - Lecture: “Single-species and comparative approaches to specialized snake locomotion”
- Facilitator for the GradEdge/JumpStart NSF GRFP Workshop Series** summer 2020  
University of California, Riverside; Graduate Writing Center summer 2021
- Non-credit eight-week fellowship writing program for incoming graduate students; two sections per week
- TA for BIOL 005B: Introduction to Organismal Biology** spring 2020  
University of California, Riverside
- Two labs per week, online due to COVID-19
- TA for BIOL 161A & 161B: Functional Anatomy of the Vertebrates** winter 2020  
University of California, Riverside fall 2018
- Four discussion sections per week fall 2017
- TA for BIOL 163: Evolutionary Ecology of the Terrestrial Vertebrates** fall 2019  
University of California, Riverside
- One lab section and one field trip per week, including two overnight field trips
- Guest Seminar Facilitator for EEOB 210: Organismal Biology** spring 2018  
University of California, Riverside
- Graduate seminar; facilitated two separate discussions
- Guest Lecturer for BIOL 005B: Introduction to Organismal Biology** spring 2017  
University of California, Riverside
- Lecture: “Muscles and Movement Part 1: Animal Locomotion”

## *TRAINING/CERTIFICATIONS*

<b>Including Indigenous Peoples in Research and Pedagogy</b> Society for Integrative and Comparative Biology	11/2022
<b>Certified Master Tutor, Level III</b> College Reading & Learning Association International Tutor Training Program	2020
<b>University Teaching Certificate Program</b> University of California, Riverside	1–6/2019
<b>Graduate Student Diversity Certificate Program</b> University of California, Riverside	3–6/2018
<b>BIOL 301: Teaching Biology at the College Level</b> University of California, Riverside	9–12/2017
<b>Teaching Development Day</b> University of California, Riverside	5/2017
<b>ENTOM 3350: Naturalist Outreach Practicum</b> Cornell University	1–5/2012

## *MENTORSHIP AND SUPPORT ROLES*

<b>Panelist, Pre-College Scholars Program: “Inclusive Herpetology”</b> Society for the Study of Amphibians and Reptiles	3/2023
<b>Mentor for graduate students</b> University of Akron	10/2021– present
<b>STEM Coordinator, Graduate Student Mentorship Program</b> University of California, Riverside	8/2020– 6/2021
<ul style="list-style-type: none"><li>• Designed mentorship programming to enhance first year graduate student retention and success efforts across departments</li><li>• Created a successful application for program accreditation through the College Reading &amp; Learning Association</li></ul>	
<b>Mentor, EEB Mentor Match</b> Administered by Samniqueka Halsey and Terry McGlynn	2020; 2022
<b>Mentor to undergraduate and high school research assistants</b> University of California, Riverside	1/2017– 5/2021
<b>Consultant, Graduate Writing Center</b> University of California, Riverside	9/2019– 9/2020
<b>Presenter, Graduate Writing Center Workshop: “Applying for Fellowships”</b> University of California, Riverside	5/2020

<b>Invited speaker, Physics Organization for Womxn and the Under-Represented</b> UC Riverside Physics Department	3/2020
<ul style="list-style-type: none"> <li>• Talk: “Broadening participation in STEM by reducing stereotype threat”</li> </ul>	
<b>Presenter, Graduate Writing Center Workshop: “Writing Concisely”</b> University of California, Riverside	1/2020
<b>Mentor, SICB Broadening Participation Mentorship Program</b> Society for Integrative and Comparative Biology annual meeting	2020; 2021; 2023
<b>Mentor, JMIH Mentorship Program</b> Joint Meeting of Ichthyologists and Herpetologists	7/2019; 7/2022
<b>Invited speaker, Graduate Student Diversity Certificate Program</b> University of California, Riverside	5/2019
<ul style="list-style-type: none"> <li>• Talk: “Mitigating stereotype threat through growth mindsets”</li> </ul>	
<b>Presenter, Teaching Development Day</b> University of California, Riverside	5/2019
<ul style="list-style-type: none"> <li>• Talk: “Mitigating stereotype threat through growth mindsets”</li> </ul>	
<b>Panelist, STEM TA Roundtable</b> University of California, Riverside	4/2019
<b>Panelist, Grant Writing Workshop for EEOB 265: “Lunch Bunch”</b> University of California, Riverside	4/2016
<b>Science Surprises Part-Time Educator</b> Ithaca Science Center	2–6/2013
<ul style="list-style-type: none"> <li>• Provided an after-school enrichment program to K-6 children by preparing and delivering inquiry-based science activities at schools</li> </ul>	

---

### PROFESSIONAL LEADERSHIP AND SERVICE

---

<b>Co-Chair, Diversity, Equity, and Inclusion Committee</b> Society for the Study of Amphibians and Reptiles	6/2020–present
<ul style="list-style-type: none"> <li>• Spearheaded many of the action items listed here: <a href="https://ssarherps.org/ssar-actions-to-promote-diversity-equity-and-inclusion/">https://ssarherps.org/ssar-actions-to-promote-diversity-equity-and-inclusion/</a></li> </ul>	
<b>Member, Long-Range Planning Committee</b> Society for the Study of Amphibians and Reptiles	3/2019–present
<b>Judge, Hutchison Poster Competition for Graduate Students</b> Society for the Study of Amphibians and Reptiles	7/2023



**SSAR Representative for the AIBS IDEA Conference** 10/2022  
 American Institute of Biological Sciences *three virtual sessions*  
 Society for the Study of Amphibians and Reptiles  
*Enabling Scientific Societies to Support Inclusive, Diverse,  
 Equitable, and Accepting (IDEA) Scientific Environments*

**Symposium organizer:** 7/2022  
**“Diversity, Equity, and Inclusion in Ichthyology and Herpetology”** *postponed from 2020*  
 Joint Meeting of Ichthyologists and Herpetologists *due to COVID-19*

**Website Coordinator** 7/2019–10/2023  
 Society for the Study of Amphibians and Reptiles

**Judge, Grad Slam** 2/2022  
 University of California, Riverside

**Chair, Student Participation Committee** 7/2018–7/2021  
 Society for the Study of Amphibians and Reptiles

**Peer reviewer**

- Annals of the Brazilian Academy of Sciences
- Behavioral Ecology
- Bioinspiration & Biomimetics
- BMC Evolutionary Biology
- Communications Biology
- Herpetological Review
- Integrative and Comparative Biology
- International Journal of Zoology
- Journal of Herpetology
- Journal of Zoology
- Scientific Reports
- Zoology

**PROFESSIONAL DEVELOPMENT**

---

**From Postdoc to Principal Investigator** Sept 13–14, 2023  
 An NSF IOS Virtual Colloquium

**Phylogenetic Comparative Methods for Biomechanists** June 11–16, 2023  
 University of Oklahoma Biological Station

**Evolutionary Quantitative Genetics Workshop** June 3–9, 2018  
 Friday Harbor Labs

**Workshop: Natural History and Morphology – Engines of Inspiration** July 15, 2017  
 Joint Meeting of Ichthyologists and Herpetologists

**Short course: Analysis of Diversification Rates from Phylogenies** June 22–23, 2017  
 Oregon State University

## EDUCATIONAL OUTREACH

---

<p><b>Biomimicry outreach</b>            Bio-Med Science Academy, Ravenna, OH</p> <ul style="list-style-type: none"> <li>• Assisted with a presentation and activity on biomimicry for 5<sup>th</sup>-graders</li> </ul>	10/2023
<p><b>Biomechanics Day: Animals in Motion</b>            Zoo Atlanta</p> <ul style="list-style-type: none"> <li>• Led an activity involving programmable snakelike-robots</li> </ul>	3/2023
<p><b>Snake Robot Outreach</b>            Akron Public Schools East Community Learning Center</p> <ul style="list-style-type: none"> <li>• Helped guide 7<sup>th</sup>-graders through an hands-on robot activity</li> </ul>	2/2023
<p><b>Science Ambassador Program</b>            University of California, Riverside</p> <ul style="list-style-type: none"> <li>• Presented research and discussed career trajectory at a meeting of UCR's undergraduate Science Ambassador Program</li> </ul>	5/2021
<p><b>Success in Science and Technology: Engagement with Role Models (SISTERS)</b>            University of California, Riverside</p> <ul style="list-style-type: none"> <li>• Facilitated a meeting for the SISTERS program, which serves middle-school girls who will be first-gen high-school or college graduates</li> </ul>	4/2021
<p><b>STEAM Storytime at the Riverside Public Library</b></p> <ul style="list-style-type: none"> <li>• Taught pre-K through elementary school students about reptiles with a story, live animals, and hands-on activities</li> </ul>	2/2020 5/2018
<p><b>Society for Integrative and Comparative Biology outreach event: What is a scientist?</b>            Stewart Magnet Middle School, Tampa, FL</p> <ul style="list-style-type: none"> <li>• Familiarized students in two classes with general goals and specific activities of scientists, then led a miniature research project</li> </ul>	1/2019
<p><b>Herpetology Hotline Responder</b></p> <ul style="list-style-type: none"> <li>• Answered 155 questions via the Society for the Study of Amphibians and Reptiles online hotline, which is accessible to the general public</li> </ul>	9/2017– 8/2019
<p><b>Animal adaptations presentation</b>            Columbia Elementary School, Perris, CA</p> <ul style="list-style-type: none"> <li>• Taught elementary school students (eleven classes total on three visits) about animal adaptations using hand-on activities</li> </ul>	5/2018 3/2017 12/2016
<p><b>Reptiles outreach at after-school science club</b>            REACH Leadership Academy, Riverside, CA</p> <ul style="list-style-type: none"> <li>• Used live animals to instill knowledge of and appreciation for reptiles in elementary school students</li> </ul>	3/2018 11/2016

<b>Science Olympiad mentorship</b>	12/2017– 2/2018
On-campus at the University of California, Riverside	
<ul style="list-style-type: none"> <li>• Led workshops to prepare high school students for the Science Olympiad competition</li> </ul>	
<b>Upward Bound Math and Science Program</b>	4/2017
Vista del Lago High School, Moreno Valley, CA	
<ul style="list-style-type: none"> <li>• Discussed academic opportunities and science careers with low-income high school students</li> </ul>	
<b>UC Riverside Science Day</b>	2/2017
<ul style="list-style-type: none"> <li>• Led activities for ~200 fourth-grade students to learn about animal diversity and adaptation</li> </ul>	
<b>Video: “Reptiles: Diversity, Feeding, Defense”</b>	2012
<ul style="list-style-type: none"> <li>• Developed and presented educational video with a fellow student as part of the Cornell University Naturalist Outreach Program</li> <li>• <a href="http://www.cornell.edu/video/naturalist-outreach-reptiles---diversity-feeding--defense">http://www.cornell.edu/video/naturalist-outreach-reptiles---diversity-feeding--defense</a></li> </ul>	
<b>Educational pamphlet: “Basic Biology of Reptiles &amp; Amphibians”</b>	2012
<ul style="list-style-type: none"> <li>• Developed educational pamphlet with a fellow student as part of the Cornell University Naturalist Outreach Program</li> <li>• <a href="http://calscomm.cals.cornell.edu/naturalist/Naturalist-Outreach-Reptile-diversity-feeding-defense.pdf">http://calscomm.cals.cornell.edu/naturalist/Naturalist-Outreach-Reptile-diversity-feeding-defense.pdf</a></li> </ul>	
<b>Cornell Herpetological Society</b>	3/2009– 5/2012
<ul style="list-style-type: none"> <li>• Conducted dozens of educational outreach events for undergraduates, elementary school students, and community members in and around Ithaca, NY</li> </ul>	

---

### PROFESSIONAL SOCIETY MEMBERSHIP

Society for Integrative and Comparative Biology (SICB)  
American Society of Biomechanics (ASB)  
Society for the Study of Amphibians and Reptiles (SSAR)  
American Society for Ichthyologists and Herpetologists (ASIH)