

Breanna J. Putman

PHONE: (909) 537-4582 | **EMAIL:** breanna.putman@csusb.edu

WEB: www.breeputman.com | **SOCIAL:** @breeput

Current positions

Assistant Professor Department of Biology; California State University, San Bernardino (CSUSB)

Research Associate Department of Herpetology; Natural History Museum of Los Angeles County

Previous positions

Field Research Mentor NSF LSAMP REU for Underrepresented Minority Students Summer Program
[2016-2021] (Formally the Native American and Pacific Islander Research Experience Program); Organization for Tropical Studies, Costa Rica

Lecturer

[2018-2019] California State University, Long Beach (CSULB)

NSF Postdoctoral Fellow

[2016-2018] University of California, Los Angeles (UCLA); Blumstein Lab
Natural History Museum of Los Angeles County (NHMLA); Department of Herpetology and Urban Nature Research Center

Education

Ph.D. in Ecology

[2016] Joint Doctoral Program in Ecology; San Diego State University (SDSU) & University of California, Davis (UCD)

Advisors: Dr. Rulon Clark (SDSU); Dr. Richard Coss (UCD)

B.S. in Biology

Minor in Spanish

[2010] California Polytechnic State University San Luis Obispo (SLO)

Advisor: Dr. Emily Taylor

Peer-reviewed publications

* – denotes student

delBarco Trillo, J., **B.J. Putman**. 2023. Not all cities are the same: variation in animal phenotypes across cities within urban ecology studies. Urban Ecosystems. doi: 10.1007/s11252-023-01419-8.

Martin, C.E., G.A. Fox, **B.J. Putman**, W.K. Hayes. 2023. Social Security: Can rattlesnakes reduce acute stress through social buffering? Frontiers in Ethology 2:1181774

Álvarez-Ruiz, L., J.G. Pausas, D.T. Blumstein, **B.J. Putman**. 2023. Lizard responses to the sound of fire is modified by fire history. *Animal Behaviour* 196:91-102.

Mychajliw, A.M.#, E.R. Ellwood#, P. Alagona, S. Anderson, M. Balisi, E. Biber, J. Brown, A.J.W. Hendy, L.M. Higgins, C.A. Hofman, A. Leger, M. Ordeñana, G.P. Pauly, **B.J. Putman**, J.M. Randall, S.P.D. Riley, A.J. Schultz, M.A. Stegner, T.A. Wake, E.L. Lindsey. 2022. Lessons for conservation from beneath the pavement. *Conservation Biology*:e13983. #denotes joint first authorship.

Lopera, D.*, K. Chen Guo*, **B.J. Putman**, L. Swierk. 2022. Keeping it cool to take the heat: tropical lizards have greater thermal tolerance in less disturbed habitats. *Oecologia* 199:819–829.

Wuthrich, K.L.*, D. Stock, J.B. Talavera*, **B.J. Putman**, L. Swierk. 2022. Sexual signal conspicuity is correlated with tail autotomy in an anoline lizard. *Current Zoology* 68:129-132.

Urquidi, E.R.*, **B.J. Putman**. 2021. Quantifying Southern Pacific Rattlesnake (*Crotalus oreganus helleri*) hunting behavior through community science. *Diversity* 13:349.

Putman, B.J., R. Williams*, E. Li, G.B. Pauly. 2021. The power of community science to quantify ecological interactions in cities. *Scientific Reports* 11:3069.

Talavera, J.*, A. Carriere*, L. Swierk, **B.J. Putman**. 2021. Tail autotomy is associated with boldness in male but not female water anoles. *Behavioral Ecology and Sociobiology* 75:44.

Putman, B.J., Z. Tippie*. 2020. Big city living: a global meta-analysis reveals positive impact of urbanization on body size in lizards. *Frontiers in Ecology and Evolution* 8:580745.

Holding, M.#, **B.J. Putman**#, L. Kong*, J.E. Smith, R.W. Clark. 2020. Physiological stress integrates resistance to rattlesnake venom and the onset of risky foraging in California ground squirrels. *Toxins* 12:617. #denotes joint first authorship.

Geffroy, B., B. Sadoul, **B.J. Putman**, O. Berger-Tal, L.Z. Garamszegi, A.P. Møller, D.T. Blumstein. 2020. Evolutionary dynamics in the Anthropocene: Life history and intensity of human contact shape antipredator responses. *PLoS Biology* 18:e3000818.

Zellmer, A.J., E. Wood, T. Surasinghe, **B.J. Putman**, G.B. Pauly, S. Magle, J. Lewis, C. Kay, M. Fidino. 2020. What can we learn from wildlife sightings during the COVID-19 global shutdown? *Ecosphere*: 11:e03215.

Putman, B.J., G.B. Pauly, D.T. Blumstein. 2020. Urban invaders are not bold risk-takers: a study of 3 invasive lizards in Southern California. *Current Zoology* 66:657-665.

Fondren, A.*, L. Swierk, **B.J. Putman**. 2020. Clothing color mediates lizard responses to humans in a tropical forest. *Biotropica* 52:172-181.

Putman, B.J., M. Gasca*, D.T. Blumstein, G.B. Pauly. 2019. Downsizing for downtown: Limb lengths, toe lengths, and scale counts decrease with urbanization in western fence lizards (*Sceloporus occidentalis*). *Urban Ecosystems* 22:1071-1081.

Calderon-Chalco, K.A.*, **B.J. Putman**. 2019. The effect of paint marking on predation risk in Western Fence Lizards: A test using clay models. *Herpetological Conservation and Biology* 14:80-90.

Putman, B.J., D.S.M. Samia, W.E. Cooper, D.T. Blumstein. 2019. Impact of human-induced changes on lizard behavior: insights from urbanization. In: *Behavior of Lizards: Evolutionary and Mechanistic Perspectives* (V.L. Bels and A.P. Russell, eds.). CRC Press: Boca Raton, FL.

Putman, B.J., D.T. Blumstein. 2019. What is the effectiveness of using conspecific or heterospecific acoustic playbacks for the attraction of animals for conservation management? A systematic review protocol. *Environmental Evidence* 8:6.

Berger-Tal, O., A.L. Greggor, B. Macura, C.A. Adams, A. Blumenthal, A. Bouskila, U. Candolin, C. Doran, E. Fernández-Juricic, K.M. Gotanda; C. Price; **B.J. Putman**, M. Segoli, L. Snijders, B.B. Wong, D.T. Blumstein. 2019. Systematic evidence synthesis as part of a larger process: reply to comments on Berger-Tal et al. 2018. *Behavioral Ecology* 30:14-15.

Berger-Tal, O., A.L. Greggor, B. Macura, C.A. Adams, A. Blumenthal, A. Bouskila, U. Candolin, C. Doran, E. Fernández-Juricic, K.M. Gotanda; C. Price; **B.J. Putman**, M. Segoli, L. Snijders, B.B. Wong, D.T. Blumstein. 2019. Systematic reviews and maps as tools for applying behavioral ecology to management and policy. *Behavioral Ecology* 30:1-8.

Putman, B.J., K.R. Azure*, L. Swierk. 2018. Dewlap size in male water anoles associates with consistent inter-individual variation in boldness. *Current Zoology* 65:189-195.

Ayon, R.E.*, **B.J. Putman**, R.W. Clark. 2017. Recent encounters with rattlesnakes enhance ground squirrel responsiveness to predator cues. *Behavioral Ecology and Sociobiology* 71:149.

Putman, B.J., J.P. Drury, D.T. Blumstein, G.B. Pauly. 2017. Fear no colors? Observer clothing color influences lizard escape behavior. *PLoS ONE* 12(8):e0182146.

Putman, B.J., R.W. Clark. 2017. Behavioral thermal tolerances of free-ranging rattlesnakes (*Crotalus oreganus*) during the summer foraging season. *Journal of Thermal Biology* 65:8-15.

Clark, R.W., S.W. Dorr, M.D. Whitford*, G.A. Freymiller*, **B.J. Putman**. 2016. Activity cycles and foraging behaviors of free-ranging sidewinder rattlesnakes (*Crotalus cerastes*): the ontogeny of hunting in a precocial vertebrate. *Zoology* 119:196-206.

Putman, B.J., M.A. Barbour, R.W. Clark. 2016. The foraging behavior of free-ranging rattlesnakes (*Crotalus oreganus*) in California ground squirrel (*Otospermophilus beecheyi*) colonies. *Herpetologica* 72:55-63.

Meek, M.H., C. Wells, K.M. Tomalty, J. Ashander, E.M. Cole, D.A. Gille, **B.J. Putman**, J.P. Rose, M.S. Savoca, L. Yamane, J.M. Hull, D.L. Rogers, E.B. Rosenblum, J.F. Shogren, R.R. Swaisgood, B. May. 2016. We should not be afraid to talk about fear of failure in conservation. *Biological Conservation* 194:218-219.

Meek, M.H., C. Wells, K.M. Tomalty, J. Ashander, E.M. Cole, D.A. Gille, **B.J. Putman**, J.P. Rose, M.S. Savoca, L. Yamane, J.M. Hull, D.L. Rogers, E.B. Rosenblum, J.F. Shogren, R.R. Swaisgood, B. May. 2015. Fear of failure in conservation: the problem and potential solutions to aid conservation of extremely small populations. *Biological Conservation* 184:209-217.

Putman, B.J., R.W. Clark, R.G. Coss. 2015. The ontogeny of antipredator behavior: age differences in California ground squirrels (*Otospermophilus beecheyi*) at multiple stages of rattlesnake encounters. *Behavioral Ecology and Sociobiology* 69:1447-1457.

Putman, B.J., R.W. Clark. 2015. The fear of unseen predators: ground squirrel tail flagging in the absence of snakes signals vigilance. *Behavioral Ecology* 26:185-193.

Putman, B.J., C. Lind, E. N. Taylor. 2013. Does size matter? Factors influencing the spatial ecology of northern Pacific rattlesnakes (*Crotalus oreganus oreganus*) in central California. *Copeia* 2013:485-492.

Peer-reviewed notes & book reviews

Swierk, L., A. Carriere*, M. Delfin*, A. Fondren*, D. Lopera*, **B.J. Putman**. 2019. *Anolis aquaticus* (= *Norops aquaticus*) (Water Anole). Egg size and oviposition sites. *Herpetological Review* 50:360-362.

Putman, B. J. 2018. Cane Toad Wars [book review]. *Copeia* 106:567-568.

Rice, S., **B.J. Putman**, H. Schraft, R.W. Clark. 2016. *Crotalus oreganus helleri* (Southern Pacific Rattlesnake). Loss of rattle style and matrix. *Herpetological Review* 47:679.

Putman, B.J., R.W. Clark. 2015. Habitat manipulation in hunting rattlesnakes (*Crotalus* spp.). *The Southwestern Naturalist* 60:374-377.

Putman, B.J., R.W. Clark. 2015. *Crotalus oreganus* (Northern Pacific Rattlesnake). Non-rattling tail display. *Herpetological Review* 46:269-270.

Manuscripts in review/revision

Putman, B.J., M. Rensel, B.A. Schlinger, S. French, D.T. Blumstein, G.B. Pauly. Comparing Fear Responses of Two Lizard Species in Habitats Varying in Human Impact. *Journal of Urban Ecology*: *In review*.

Heard, M.J., **B.J. Putman**, S.H. Riskin, C.J. Thawley. Using iNaturalist Photos to Teach Students About How Urbanization Impacts Organisms. *The American Biology Teacher*: *In review*.

Berger-Tal, O., B.B.M. Wong, C. Adams, D.T. Blumstein, U. Candolin, M.J. Gibson, A.L. Greggor, M. Lagisz, B. Macura, C.J. Price, **B.J. Putman**, L. Snijders, S. Nakagawa. Opinion: Leveraging AI to improve evidence-informed conservation decision-making. *Trends in Ecology and Evolution*: *In review*.

Manuscripts in preparation

Giery, S.T., A. Battles, D. Bock, Z. Chejanovski, C. Donihue, A. Geneva, E. Henry, A. Herell, M. Johnson, J. Kolbe, J. Pita-Aquino, **B.J. Putman**, R.G. Reynolds, J.T. Stroud, L. Swierk, M. Thompson, A. Wright. Niche parameter covariance: a study of breadth–position scaling in *Anolis* lizards.

Grants and awards

- [2023] CSUSB Undergraduate Summer Research Program — \$15,100
- [2022] CSUPERB Faculty-Graduate Student Research Collaboration Grant — \$9,902
- [2022] CSUSB Undergraduate Summer Research Program — \$11,496
- [2021] Raymond D. Semlitsch Research Award (Herpetologists League) — \$5,000
- [2021] CSUPERB COVID-19 Research Recovery Microgrant — \$1,500
- [2021] Faculty-Student Research Grant (CSUSB) — \$1,500
- [2020] Professors Across Borders Grant (CSUSB) — \$2,000
- [2020] Summer Research Fellowship (CSUSB) — \$3,000
- [2019] Community-based Research Mini Grant (CSUSB) — \$5,000
- [2018] UCLA Chancellor's Award for Postdoctoral Research — \$7,500
- [2016-2018] Postdoctoral Research Fellowship in Biology; National Science Foundation (DBI-1611562) — \$138,000
- [2017] UCLA La Kretz Center/Stunt Ranch Reserve Research Grant — \$3,000
- [2014] Harold and June Grant Memorial Scholarship — \$1,000
- [2014] James and Mary Crouch Memorial Scholarship — \$1,000

- [2014] Theodore Roosevelt Memorial Fund of the American Museum of Natural History — \$2,000
- [2014] Gordon Research Conference on Predator-Prey Interactions Travel Scholarship
- [2013] Harold and June Grant Memorial Scholarship — \$1,000
- [2013] Animal Behavior Society Student Research Grant — \$1,000
- [2012] Mildred E. Mathias Student Research Grant — \$2,950
- [2012] Judith Presch Desert Research Scholarship — \$300
- [2008] Santa Barbara Museum of Natural History Student Scholarship — \$500

Invited seminars

- [2024] San Bernardino Valley Audubon Society; San Bernardino, CA
- [2023] Nights with the Museum; Museum of Riverside; Riverside, CA
- [2021] STEM-Net Virtual Research Café; virtual
- [2021] Brown Bag Lunch Seminar; San Diego Natural History Museum; virtual
- [2021] University of Kansas SEEDS Chapter; virtual
- [2021] UC Riverside Seminar Series; Riverside, CA (virtual)
- [2020] CSU Los Angeles Biology Seminar Series; Los Angeles, CA
- [2020] CSU Fresno Biology Seminar Series; Fresno, CA
- [2020] Loma Linda University Biology Seminar Series; Loma Linda, CA
- [2019] CSU San Bernardino Biology Seminar Series; San Bernardino, CA
- [2019] Eaton Canyon Nature Center Brown Bag Lunch; Pasadena, CA
- [2018] CSU Dominguez Hills Biology Seminar Series; Carson, CA
- [2018] CSU Fullerton Biology Seminar Series; Fullerton, CA
 - Special invited guest of undergraduate students in the Southern California Ecosystems Research Program (SCERP)
- [2018] Ecology and Evolution of Invasives Seminar Course; CSU Northridge, CA
- [2018] Behavior, Ecology, and Evolution Research Club; CSU Northridge, CA
- [2017] Occidental College Biology Seminar Series; Eagle Rock, CA
- [2017] CSU Long Beach Biological Sciences Seminar Series; Long Beach, CA
- [2017] Research and Collections Seminar Series; Natural History Museum of Los Angeles County, CA
- [2016] Midwest Herpetological Symposium; Naperville, IL
- [2015] Loma Linda University Seminar Series; Loma Linda, CA
- [2014] SDSU Ecology Graduate Student Retreat; Santa Margarita Ecological Reserve, CA
- [2014] Northern California Herpetological Society Seminar; Sacramento, CA
- [2013] Yolo County Flood Control and Water Conservation District; Woodland, CA
- [2012] Jasper Ridge Preserve Community Retreat; Blue Oak Ranch Reserve, CA
- [2011] Boy Scout Troop #1618; Rancho Santa Margarita, CA

Presentations at meetings

Putman, B.J., D.T. Blumstein, G.B. Pauly. 2023. Does fear of humans filter animals from urban areas? A case study of Southern California lizards (Oral). Joint Meeting of Ichthyologists and Herpetologists; Norfolk, VA

Putman, B.J. 2022. Using meta-analyses to understand phenotypic responses to urbanization in animals (Oral). Invited Symposium: Illuminating hot topics in experimental biology: A meta-analytic approach to understanding biological phenomenon. Society for Experimental Biology Annual Conference; virtual.

Putman, B.J. 2021. The power of community science for ecological research (Oral). Invited Symposium: Engaging communities in science research using bioblitzes. SACNAS Annual Meeting; virtual.

Putman, B.J., D.T. Blumstein, G.B. Pauly. 2021. Does fear of humans filter animals from urban areas? A case study of Southern California lizards. (Oral). Invited Symposium: From conflict to coexistence: the role of animal behavior in conservation and human-animal interactions. Animal Behavior Society Annual Meeting; virtual.

Putman, B.J. 2020. Color matters in herpetological research (Oral). HerpFest; Westmont College, Santa Barbara, CA.

Putman, B.J., R. Williams, J. Li, G.B. Pauly. 2020. The use of community science to study the ecology of herpetofauna in cities (Oral). World Congress of Herpetology; Dunedin, New Zealand.

Putman, B.J., R. Williams, J. Li, G.B. Pauly. 2019. Urban to rural gradients in parasitism and predation: An example using citizen science-generated photographs of the Southern Alligator Lizard. (Oral). Joint Meeting of Ichthyologists and Herpetologists; Snowbird, UT

Putman, B.J., D.T. Blumstein, G.B. Pauly. 2018. Anthropophobia and lizard responses to urbanization in Southern California. (Oral). Meeting of Southwestern Organismal Biologists; San Marcos, CA

Putman, B.J., D.T. Blumstein, G.B. Pauly. 2018. Anthropophobia and lizard responses to urbanization in Southern California. (Oral). Society for Integrative and Comparative Biologists Annual Meeting; San Francisco, CA

Putman, B.J., R.W. Clark. 2017. Factors influencing the foraging behavior of rattlesnakes. (Oral). Biology of Snakes Conference; Rodeo, NM

Putman, B.J., J.P. Drury, D.T. Blumstein, G.B. Pauly. 2017. Fear no colors? Observer clothing color influences lizard escape behavior. (Oral). Invited Symposium on Urban Herpetology; International Urban Wildlife Conference; San Diego, CA

Putman, B.J. 2016. Fear no colors? Lizards respond less fearfully to their sexually-selected signaling color. (Oral). Meeting of Southwestern Organismal Biologists; Fullerton, CA

Putman, B.J. and R.W. Clark. 2015. The fear of hidden predators: ground squirrels honestly signal vigilance toward undetected rattlesnakes (Oral). Joint Meeting of Ichthyologists and Herpetologists; Reno, NV
- Stoye Award for best presentation in Ecology and Ethology!

Putman, B.J. and R.W. Clark. 2015. The potential for new discoveries in snake ecology and behavior using fixed videography: a case study on the rattlesnake *Crotalus oreganus* (Poster). Joint Meeting of Ichthyologists and Herpetologists; Reno, NV

Putman, B.J. and R.W. Clark. 2014. The unseen predator is the most fearsome: ground squirrel tail flagging in the absence of snakes signals vigilance (Poster). Gordon Research Conference on Predator-Prey Interactions; Ventura, CA

Putman, B.J. and R.W. Clark. 2013. Testing the function of an antipredator display: ground squirrel tail flagging toward rattlesnakes (Oral). Animal Behavior Society Annual Meeting; Boulder, CO

Putman, B.J. and R.W. Clark. 2013. Sending signals: why do ground squirrels tail flag at rattlesnakes? (Oral). Student Research Symposium; San Diego State University, CA

Putman, B.J., C. Lind, E.N. Taylor. 2012. Spatial ecology of the Northern Pacific Rattlesnake: from long distance mate searching to fine-scale foraging movements (Oral). The World Congress of Herpetology; Vancouver, BC

Putman, B.J., C. Lind, E.N. Taylor. 2012. Does size matter? Testing the effects of body size and sex on the spatial ecology of Northern Pacific Rattlesnakes in California (Oral). Graduate Student Symposium in Ecology; UC Davis, CA

Putman, B.J., C. Lind, E.N. Taylor. 2009. Comparative home range sizes in a population of the Northern Pacific Rattlesnake (*Crotalus oreganus oreganus*) in central California (Poster). Joint Meeting of Ichthyologists and Herpetologists; Portland, OR

Teaching experience

Instructor of Record

[Spring 2023]	Primary Literature in Biology (BIOL 6100); CSUSB
[Fall 2021, 2022, 2023]	Biostatistics and Experimental Design (BIOL 5050); CSUSB
[Fall 2021, Spring 2024]	Professional Writing in Biology (BIOL 6020); CSUSB
[Spring 2021, 2023, 2024]	Herpetology (BIOL 3440); CSUSB
[Spring, Fall 2020]	Ecology (BIOL 450/3800); CSUSB

- [Winter 2020] Special Topics Course: Biological Data in R (BIOL 490D); CSUSB
- [2019-2020] Biology Seminar (BIOL 591); CSUSB
- [Spring 2019] Herpetology (BIOL 421); CSULB
- [2018-2019] Vertebrate Zoology (BIOL 324); CSULB
- [2012-2016] Student Grant Writing Group (student-organized seminar); SDSU
- [2014] Experimental Ecology (BIOL 354L); SDSU
- [2010] General Biology Lab (BIOL 100L); SDSU

Lab Instructor (TA)

- [2016] Marine Ecology (BIOL 517); San Diego State University
- [2012-2013] Ecology and Environment (BIOL 354); San Diego State University
- [2009] Ornithology (ZOO 323); Cal Poly San Luis Obispo

Guest Lecturer

- [2017] Earth Science Class; Santa Maria High School, CA
- [2014] Animal Behavior Class; San Diego State University, CA
- [2012] Graduate School Preparatory Seminar; San Diego State University, CA
- [2012] Animal Behavior Class; Mills College, CA

Misc. Experience

- [2016-2019] REU Instructor; Organization for Tropical Studies; Costa Rica
- [2008-2010] Flameworking Instructor; Craft Center; Cal Poly San Luis Obispo

Professional development in teaching/mentoring

- [2023-2024] Belonging in Field Education Community of Practice; virtual
- [2023] NSF RaMP Mentor Training for the UNLAB program at NHMLA
- [2021] Faculty Learning Community for Culturally-Responsive Teaching; CSUSB
- [2020] EREN-NEON Flexible Learning Project Faculty Mentoring Network; virtual
- [2020] Best Practices in Alternate Teaching Modalities; CSUSB
- [2019-2020] Faculty Learning Community for Large Lectures; CSUSB
- [2019-2020] New Faculty Workshops on "How Students Learn"; CSUSB
- [2018] How to be an Ally Training; UCLA
- [2017] Course on Evidence-based Undergraduate STEM Teaching; Center for the Integration of Research, Teaching, and Learning (CIRTL) Online Course
- [2017] Entering Mentoring Training (EMT) Program; UCLA
- [2012] Diversity in the Classroom Training; Graduate Teaching Community; UCD

Mentoring experience

Organized Programs

- [2023-2024] [UNLAB Program at NHMLA](#) (NSF-funded RaMP)

Mentee and Project:

- Taylor Vasquez
- Effects of urbanization on rodenticide exposure in squamate reptiles

- [Summer 2023] [Office of Student Research Undergraduate Summer Research Program](#)
Students and Project:
- Bayley Stevens. Emily Spain, Jacob Paul (CSUSB)
 - The effects of wildfire on predation risk and antipredator behaviors in lizards
- [Summer 2022] [Office of Student Research Undergraduate Summer Research Program](#)
Students and Project:
- Alexis Gonzalez, Joey Guerrero, Bayley Stevens (CSUSB)
 - The effects of urbanization on the health of western fence lizards
- [Summer 2021] [NSF LSAMP REU for Underrepresented Minority Students Summer Program; Organization for Tropical Studies, Costa Rica](#) (virtual)
Students and Project:
- Jessica Navarro & Elmer Gutierrez (CSUSB)
 - Effects of urbanization on microclimates, herpetofauna and invertebrate diversity under cover boards
- [Summer 2019] [NSF LSAMP REU for Underrepresented Minority Students Summer Program; Organization for Tropical Studies, Costa Rica](#)
Students and Projects:
- Janelle Talavera (CSU Northridge): Personality and home range size of *Anolis aquaticus*
 - Michael-Luca Natt (SUNY Binghamton University): How does sex influence escape decisions in *Anolis aquaticus*?
- [Summer 2018] [NSF LSAMP REU for Underrepresented Minority Students Summer Program; Organization for Tropical Studies, Costa Rica](#) (formally NAPIRE)
Students and Projects:
- Andrea Fondren (Iowa State University): The impact of researcher clothing color on the behavior of *Anolis aquaticus*
 - Austin Carriere (University of Oklahoma): Intersexual differences in boldness and activity in water anoles, *Anolis aquaticus*
- [Summer 2016] **The Native American and Pacific Islander Research Experience (NAPIRE) Program; Organization for Tropical Studies, Costa Rica**
Students and Projects:
- Kylee Azure (Aaniiih Nakoda College): The bigger the bolder: Associations among morphology and personality in water anoles (*Anolis aquaticus*)
 - Sattie Whitefoot (Salish Kootenai College) Habitat effects on predation risk in the water anole, *Anolis aquaticus*

Independent Undergraduate Mentees

Joey Guerrero (CSUSB)

Effects of urbanization on the limb and toe lengths and asymmetry in Western Fence Lizards

Bayley Stevens (CSUSB)

Urbanization affects throat patch size in Western Fence Lizards

Elmer Gutierrez, Elie Ashkar, Jessica Navarro (CSUSB)

Use of coverboards to estimate herpetofauna populations across a gradient of human impacts (urbanization and fragmentation)

Sarah Vasquez (CSUSB)

Effects of urbanization on the skin microbiome of *Sceloporus occidentalis*

Emily Urquidi (CSUSB)

Quantifying southern Pacific rattlesnake hunting behavior through citizen science

Nina Fresco (CSUSB)

Signaling in an urbanized world: a study on ventral patch size and symmetry in the western fence lizard (*Sceloporus occidentalis*)

Zack Tippie (CSUSB)

What makes an urban lizard? A global meta-analysis

Keitty Calderon-Chalco (Life Science Dean's Award Scholar, UCLA)

Use of clay lizard models to evaluate the effect of color markings on predation risk in fence lizards (*Sceloporus occidentalis*)

Riley Williams (post-grad student, NHMLA)

The effect of urbanization on tail autotomy and ectoparasite load in the southern alligator lizard, *Elgaria multicarinata*

Maria Gasca (CARE Fellows Scholar, UCLA)

Morphological and meristic changes in *Uta stansburiana* and *Sceloporus occidentalis* in rural to urban transitions in Southern California

Lauren Kong (Barrett Research Scholar, Mills College)

Do snakes stress out squirrels?

Jennifer Schefski (SDSU)

The importance of olfaction in snake detection and discrimination by California ground squirrels (*Otospermophilus beecheyi*)

Rey Ayon (NIH IMSD Scholar, SDSU)

Rattlesnake encounters enhance vigilance behavior of California ground squirrels (*Otospermophilus beecheyi*)

Presentations by students at meetings

* – denotes undergraduate

Xiong, D., A. Horner, **B.J. Putman**. 2024. Effects of urbanization on locomotion in Western Fence Lizards (*Sceloporus occidentalis*) (Poster). Society for Integrative and Comparative Biology Annual Meeting.

Xiong, D., A. Horner, **B.J. Putman**. 2023. Effects of urbanization on limb length and locomotion of Western Fence Lizards (*Sceloporus occidentalis*) (Oral). Joint

Meeting of Ichthyologists and Herpetologists; Norfolk, VA.

Ruck, S., **B.J. Putman**. 2023. Response of the Western Fence Lizard (*Sceloporus occidentalis*) to Post-Fire Disturbances (Oral). Joint Meeting of Ichthyologists and Herpetologists; Norfolk, VA.

Urquidi, E., **B.J. Putman**. 2023. Big City Blues: The Effects of Urbanization on Western Fence Lizard (*Sceloporus occidentalis*) Body Size and Ectoparasites (Oral). Joint Meeting of Ichthyologists and Herpetologists; Norfolk, VA.

Gutierrez, E., **B.J. Putman**. 2023. Temperature Fluctuations Under Cover Boards Along a Gradient of Urbanization (Poster). Joint Meeting of Ichthyologists and Herpetologists; Norfolk, VA.

Martin, C., G. Fox, **B.J. Putman**, W.K. Hayes. 2023. Social security: Can rattlesnakes reduce acute stress through social buffering? (Oral). Joint Meeting of Ichthyologists and Herpetologists; Norfolk, VA

Urquidi, E., **B.J. Putman**. 2023. Big City Blues: The effects of urbanization on western fence lizard (*Sceloporus occidentalis*) body size and ectoparasites (Oral). Southern California Academy of Sciences Meeting; Santa Barbara, CA.

Stevens, B.* , **B.J. Putman**. 2023. Urbanization affects the colored throat patches of western fence lizards (*Sceloporus occidentalis*) (Oral). Southern California Academy of Sciences Meeting; Santa Barbara, CA.

Ruck, S.E., **B.J. Putman**. 2023. Response of the western fence lizard (*Sceloporus occidentalis*) to post-fire disturbances (Oral). Southern California Academy of Sciences Meeting; Santa Barbara, CA.

Stevens, B.* , **B.J. Putman**. 2023. Urbanization affects the colored throat patches of western fence lizards (*Sceloporus occidentalis*) (Oral). Meeting of the Minds Student Research Symposium; CSUSB, CA.

- Winner of an Oral Presentation Award!

Guerrero, J.* , **B.J. Putman**. 2022. No Differences in Morphology of Limb and Toe Lengths Between Urban and Natural Lizards (Oral). Meeting of the Minds Student Research Symposium; CSUSB, CA.

Urquidi, E., **B.J. Putman**. 2022. Differences in body size and ectoparasites in lizards found in urban and natural areas of Southern California (Oral). Southwest Regional Meeting of Organismal Biologists; CSU San Bernardino, CA.

Guerrero, J.* , **B.J. Putman**. 2022. No Differences in Morphology of Limb and Toe Lengths Between Urban and Natural Lizards (Oral). Southwest Regional Meeting of Organismal Biologists; CSU San Bernardino, CA.

Ruck, S., **B.J. Putman**. 2022. Comparing Morphology and Ectoparasite Abundance in the Western Fence Lizard Across Fire-Prone Habitats (Oral).

Southwest Regional Meeting of Organismal Biologists; CSU San Bernardino, CA
 Martin, C., G. Fox, **B.J. Putman**, W.K. Hayes. 2022. Social security? Evidence of stress reduction through social buffering in rattlesnakes (Oral). Biology of the Pit Vipers Meeting; Rodeo, NM.

Urquidi, E., **B.J. Putman**. 2022. Quantifying southern Pacific rattlesnake hunting behavior through citizen science (Oral). Animal Behavior Society Annual Meeting; San Jose, Costa Rica.

Urquidi, E., **B.J. Putman**. 2022. Effects of urbanization on western fence lizards (*Sceloporus occidentalis*) (Oral). Southern California Academy of Sciences Annual Meeting; CSU Fullerton, CA.

Vasquez, S.* , B.J.Putman. 2021. Effects of Urbanization on Skin Microbiome of *Sceloporus occidentalis* (Poster). Meeting of the Minds Student Research Symposium; CSU San Bernardino, CA.

Urquidi, E., **B.J. Putman**. 2021. Quantifying southern Pacific rattlesnake hunting behavior through citizen science (Oral). Southwest Regional Meeting of Organismal Biologists; Chapman University, Orange, CA.

Martin, C., G. Fox, **B.J. Putman**, W.K. Hayes. 2021. Social security? Evidence of stress reduction through social buffering in rattlesnakes (Oral). Southwest Regional Meeting of Organismal Biologists; Chapman University, Orange, CA.

Navarro, J.* , E. Gutierrez* , E. Ashkar* , E. Urquidi, **B.J. Putman**. 2021. Effects of urbanization on animal diversity under cover boards (Oral). Southwest Regional Meeting of Organismal Biologists; Chapman University, Orange, CA.

Gutierrez, E.* , J. Navarro* , E. Ashkar* , E. Urquidi, **B.J. Putman**. 2021. Effects of urbanization on microclimate under cover boards & implications for animals (Oral). Southwest Regional Meeting of Organismal Biologists; Chapman University, Orange, CA.

Álvarez-Ruiz, L., J.G. Pausas, D.T. Blumstein, **B.J. Putman**. 2021. Lizards response to the sound of fire is modified by fire history (Poster). XV Congreso Nacional de la Asociación Española de Ecología Terrestre; Plasencia, Spain.

Fondren, A.* , **B.J. Putman**, L. Swierk. 2021. Impact of research clothing color on the behavior and conservation of Aquatic Anoles (*Anolis aquaticus*) (Poster). Midwest Partners in Amphibian and Reptile Conservation (MWPARC) Virtual Annual Conference.

Fresco, N.* , **B.J. Putman**. 2021. Signaling in an urbanized world: a study on ventral patch size and symmetry in the western fence lizard (Oral). Joint Meeting of Ichthyologists and Herpetologists; Phoenix, AZ

Urquidi, E.* , **B.J. Putman**. 2021. Quantifying southern Pacific rattlesnake

hunting behavior through citizen science (Oral). Joint Meeting of Ichthyologists and Herpetologists; Phoenix, AZ

Urquidi, E.* , **B.J. Putman**. 2020. Quantifying southern Pacific rattlesnake hunting behavior through citizen science (Oral). Student Research Competition; California State University, San Bernardino, CA

Urquidi, E.* , **B.J. Putman**. 2020. Quantifying southern Pacific rattlesnake hunting behavior through citizen science (Oral). Biology Student Research Colloquium; California State University, San Bernardino, CA

Urquidi, E.* , **B.J. Putman**. 2020. Quantifying southern Pacific rattlesnake hunting behavior through citizen science (Oral). Animal Behavior Society 2020 Virtual Meeting

Fresco, N.* , **B.J. Putman**. 2020. Signaling in an urbanized world: a study on ventral patch size and symmetry in the western fence lizard (Oral). Animal Behavior Society 2020 Virtual Meeting

Talavera, J.* , L. Swierk, **B.J. Putman**. 2019. Boldness increases predation risk in water anoles (Poster). CSUNposium; California State University, Northridge, CA

Carriere, A.* , **B.J. Putman**. 2019. Analyzing behavioral lateralization in the genus *Crotalus*. McNair Heartland Research Conference; Kansas City, MO

Talavera, J.* , L. Swierk, **B.J. Putman**. 2019. Boldness increases predation risk in water anoles (Poster). BUILD PODER Summer Research Symposium; California State University, Northridge, CA

Lopera, D.* , **B.J. Putman**, L. Swierk. 2019. Thermal tolerance of *Anolis aquaticus* in sites with different land use histories (Poster). Albert Tester Memorial Symposium; University of Hawaii; Manoa, HI

Fondren, A.* , L. Swierk, **B.J. Putman**. 2018. Impact of researcher clothing color on the behavior of *Anolis aquaticus* (Poster). Society for Advancing Chicanos & Native Americans in Science Conference; San Antonio, TX

Carriere, A.* , L. Swierk, **B.J. Putman**. 2018. Comparing intersexual differences in boldness and activity in *Anolis aquaticus* (Poster). Society for Advancing Chicanos & Native Americans in Science Conference; San Antonio, TX
- Winner of a Student Travel Scholarship for the meeting!

Lopera, D.* , **B. Putman**, L. Swierk. 2018. Thermal tolerance of *Anolis aquaticus* in sites with different land use histories (Poster). Society for Advancing Chicanos & Native Americans in Science Conference; San Antonio, TX

Delfin, M.M.M.* , **B. Putman**, L. Swierk. 2018. Microhabitat preferences of the Water Anole (*Anolis aquaticus*) at sites with different land use histories (Poster). Society for Advancing Chicanos & Native Americans in Science Conference; San

Antonio, TX

Calderon-Chalco K.*, **B.J. Putman**. 2018. Use of clay lizard models to evaluate the effect of color marking on predation risk in Western Fence Lizards (*Sceloporus occidentalis*) (Oral). SoCal Animal Behavior Meeting; UCLA

Calderon-Chalco K.*, **B.J. Putman**. 2017. Use of clay lizard models to evaluate the effect of color marking on predation risk in Western Fence Lizards (*Sceloporus occidentalis*) (Poster). Summer Programs for Undergraduate Research Poster Session; UCLA

Gasca, M.*, **B.J. Putman**, D.T. Blumstein, G.B. Pauly. 2017. Morphological changes of Western Fence Lizards (*Sceloporus occidentalis*) in rural to urban transitions in Southern California (Poster). Biology Student Research Symposium; UCLA

Gasca, M.*, **B.J. Putman**, D.T. Blumstein, G.B. Pauly. 2017. Morphological changes of Western Fence Lizards (*Sceloporus occidentalis*) in rural to urban transitions in Southern California (Oral). HerpFest; UC Riverside

Gasca, M.*, **B.J. Putman**, D.T. Blumstein, G.B. Pauly. 2017. Morphological changes of Western Fence Lizards (*Sceloporus occidentalis*) in rural to urban transitions in Southern California (Poster). California Alliance for Minority Participation (CAMP) Symposium; UC Irvine.

- Winner of an Honorable Mention Award!

Azure, K.* and **B.J. Putman**. 2016. The bigger the bolder: Semiaquatic anoles (*Norops aquaticus*) with larger relative head sizes are bolder, but not more explorative (Poster). Society for Advancing Chicanos & Native Americans in Science Conference; Long Beach, CA

- Winner of a Student Travel Scholarship for the meeting!

Whitefoot, S.* and **B.J. Putman**. 2016. Habitat effects on predation risk in the semiaquatic anole, *Norops aquaticus* (Poster). Society for Advancing Chicanos & Native Americans in Science Conference; Long Beach, CA

- Winner of the Undergraduate Presentation Award!

Surber, L.L.*, M. Vo*, L. Kong*, T.T. Hammond, E.A. Lacey, **B.J. Putman**, R.W. Clark, J.E. Smith. 2015. Fecal glucocorticoid metabolites in California ground squirrels: validation and inter-individual differences (Poster). Animal Behavior Society Annual Meeting; Anchorage, AK

Surber, L.L.*, M. Vo*, L. Kong*, T.T. Hammond, E.A. Lacey, **B.J. Putman**, R.W. Clark, J.E. Smith. 2015. Fecal glucocorticoid metabolites in free-living California ground squirrels: Experimental validation and inter-individual differences in the stress response (Poster). The Western Section of the Wildlife Society Meeting; Santa Rosa, CA

Schefski, J*, **B.J. Putman**, R.W. Clark. 2014. Olfactory discrimination between two snake species by California ground squirrels (Oral). Student Research Symposium; San Diego State University

Newcomb, K.L.*, M. Vo*, L. Kong*, **B.J. Putman**, R.W. Clark, J.E. Smith. 2013. Non-lethal effects of predation on the California ground squirrel (Poster). Barrett Biology Research Symposium; Mills College

Ayon, R.E.*, **B.J. Putman**, R.W. Clark. 2013. Rattlesnake encounters alter vigilance behavior of California ground squirrels (*Otospermophilus beecheyi*) (Oral). Undergraduate Research Symposium; San Diego State University

Ayon, R.E.*, **B.J. Putman**, R.W. Clark. 2013. Rattlesnake encounters alter vigilance behavior of California ground squirrels (*Otospermophilus beecheyi*) (Oral). Animal Behavior Society Annual Meeting; Boulder, CO

Ayon, R.E.*, **B.J. Putman**, R.W. Clark. 2013. Rattlesnake encounters alter vigilance behavior of California ground squirrels (*Otospermophilus beecheyi*) (Oral). Student Research Symposium; San Diego State University

Ayon, R.E.*, **B.J. Putman**, R.W. Clark. 2012. Rattlesnake encounters alter vigilance behavior of California ground squirrels (*Otospermophilus beecheyi*) (Poster). Society for Advancing Chicanos & Native Americans in Science Conference; Seattle, WA

Service activities

Founder/Lead Organizer

- [2019-present] City Nature Challenge: Inland Empire
- [2014-2016] Joint Doctoral Program in Ecology Student Committee; SDSU
- [2012-2016] Student Grant Writing Group; SDSU

Outside Research/Committee

Mentorship

- [2023 – present] Postdoctoral fellowship mentor for Dave Daversa, UCLA
- [2020 - present] PhD Committee for Chelsea Martin, Loma Linda University

Manuscript Reviewer

- [2023] Frontiers in Ecology and Evolution; Herpetological Review
- [2022] Biology Letters; Diversity
- [2021] Urban Ecosystems; Oecologia; Journal of Herpetology
- [2020] California Fish and Wildlife Journal; Oecologia; Biological Journal of the Linnean Society
- [2019] Behavioral Ecology and Sociobiology; Animals; Journal of Threatened Taxa
- [2018] Conservation Letters; Current Zoology; Behavioral Ecology; Behavioral Ecology and Sociobiology; Herpetology Notes

- [2017] Animal Behaviour; PLOS ONE; Behaviour; Ethology
- [2016] BMC Ecology; Behavioral Ecology and Sociobiology; Integrative and Comparative Biology

Reviewer of Student Work

- [2023] Chair of the ASIH student poster award in Herpetology; Joint Meeting of Ichthyologists and Herpetologists
- [2023] Meeting of the Minds Student Research Symposium; CSUSB
- [2023] Masters Thesis Review; Macquarie University
- [2022] Desert Studies Center Awards Committee
- [2021] Animal Behavior Society Student Research Grants
- [2020] Graduate Women in Science Fellowship
- [2020] Student Research Competition; CSUSB
- [2020] NSF Graduate Research Fellowship Program; Virtual Panel
- [2017] Undergraduate Research Fellows Program; UCLA
- [2017] Graduate Women in Science Fellowship
- [2012, 2013] Julian Charter Middle School Science Fair; San Diego, CA
- [2012] Undergraduate Research Symposium; SDSU
- [2011] Greater San Diego Science and Engineering Fair; San Diego, CA

Misc. Service

- [2023] Office of Community Engagement Awards Reviewer; CSUSB
- [2023] Organismal Plant Biologist search committee; CSUSB
- [2023] Guest Speaker for CSUSB Biology Club; CSUSB
- [2023] College of Natural Sciences Outstanding Student Committee; CSUSB
- [2023] Pre-College Scholars Panel for the Society for the Study of Amphibians and Reptiles (SSAR)
- [2022] Co-organizer for the Southwest Organismal Biologists (SWOB) Meeting; CSUSB
- [2022-present] Member of the Institutional Animal Care and Use Committee; CSUSB
- [2022-present] Member of the Johnson Award Committee for the American Society of Ichthyology and Herpetology (ASIH)
- [2022-present] Member of the Executive Council for Herpetologists' League
- [2021-present] Board member (alternate) of the Desert Studies Center Consortium
- [2018-2022] Diversity, Equity, and Inclusion Committee for Herpetologists' League
- [2021-2022] STEM Biology Education Specialist search committee; CSUSB
- [2020-2022] Member of the CSUSB Sustainability Committee; CSUSB
- [2020-2024] Member of the Board of Governors for the American Society of Ichthyology and Herpetology (ASIH)
- [2019-2022] Board member of the Animal Behavior Society Conservation Committee
- [2018-2020] Conservation Behavior Working Group; Society of Conservation Biology
- [2020] Guest scientist for Herpetology class; Sacramento State University

- [2020] Meet the Professors event; CSUSB
- [2019-2020] Evolutionary Biologist search committee; CSUSB
- [2019-2020] Co-Organizer of Herps in the City Symposium for the World Congress of Herpetology; Dunedin, New Zealand
- [2019] Co-Organizer of Citizen Science in Herpetology Symposium for the Joint Meeting of Ichthyologists and Herpetologists; Snowbird, UT
- [2018] Herpetologist for the Wind Wolves Preserve Expert BioBlitz
- [2017-2018] Co-Organizer of Southern California Animal Behavior (SoCAB) Meeting; UCLA
- [2017] Herpetologist for the Amargosa River Expert BioBlitz
- [2014] Panel for Undergraduates on Graduate School Applications; SDSU
- [2012, 2013] Organizer of Faculty Panel on Grant Writing and Reviewing; SDSU
- [2012] Organizer of Ecology Department Meet-and-Greet; SDSU
- [2011- 2012] Co-Organizer of Conservation of Extremely Small Populations Symposium; UCD

Outreach to the public

- [2023] Scientist Spotlight for *Ichthyology and Herpetology*
- [2020] Interview with Ph.D. student in the College of Journalism and Communications at the University of Florida on community engagement
- [2017-2019] Training and Working with Community Scientists at Various Events; NHMLA
- [2019] Guest of honor at the Women in Science and Engineering dinner; CSUSB
- [2018] Interview for *Herpetologist Highlights*; Herpetologists' League
- [2017, 2018] Urban Nature Research Center Booth at NatureFest; NHMLA
- [2017] Research Outreach with Students from MUSE High School; Calabasas, CA
- [2016] Snake Expert for #SnakeTownHall Twitter Q&A Event
- [2015] Contributing Scientist for i-Inquire (a high school case-based learning program)
- [2013-2015] Co-founder and Contributor for the Reptile and Amphibian Blogging Network (RAmBIN) – www.herpetologyblogs.wordpress.com
- [2014] Interview with student at Easterbrook Discovery K-8 School; San Jose, CA
- [2013] Science Hip Hop Project at Mar Vista High School; Imperial Beach, CA
- [2012] Graduate Group in Ecology Picnic Day Booth; UCD
- [2012] Predator-Prey Activity Leader for K.i.D.S. (Kids into Discovering Science)
- [2009] Representative at Public Events for Hi Mountain Condor Lookout; SLO County

Science communication

- [2023] Interview with National Wildlife Federation Magazine (re: Putman and Clark 2025, *The Southwestern Naturalist*)
- [2021] Instagram Live Coyote Research Talks (through the Office of Student Research at CSUSB)
- [2021] Interview with National Geographic (re: Forsthofer et al. 2021, *Current Biology*)
- [2021] Interview with the San Luis Obispo Tribune (re: Crowell et al. 2021, *Ecology and Evolution*)

- [2021] Interview with Politico (re: use of iNaturalist in research)
- [2021] Interview with KVCR (re: Putman et al. 2021, Sci Reports)
- [2021] Interview with Atlas Obscura (re: Putman et al. 2021, Sci Reports)
- [2021] Natural History Institute Greene View blog (re: Putman et al. 2021, Sci Reports)
- [2021] Los Angeles Post (re: Putman et al. 2021, Sci Reports)
- [2020] Interview with CapRadio (re: City Nature Challenge)
- [2019] Highlight in WIRED magazine (re: Putman et al. 2019, Urban Ecosystems)
- [2019] Life in the City blog (re: Putman et al. 2019, Urban Ecosystems)
- [2019] National Geographic (re: kangaroo rat evasive leaps)
- [2017] ScienceVideos.org interview (re: Putman et al. 2017, PLOS ONE)
- [2017] Wildlife Society News (re: Putman et al. 2017, PLOS ONE)
- [2017] KPCC News (re: Putman et al. 2017, PLOS ONE)
- [2017] AAAS Science Update Podcast (re: Putman et al. 2017, PLOS ONE)
- [2017] Scientific American's "60-Second Science" Podcast (re: Putman et al. 2017, PLOS ONE)
- [2017] Blog post in Nature in L.A. Blog – www.nhm.org/nature/blog
- [2011-2016] Personal Research Blog – www.strikerattleroll.blogspot.com
- [2016] Cool Green Science blog by The Nature Conservancy (re: citizen science)
- [2016] Living Alongside Wildlife blog (re: rattlesnake behavior and foraging)
- [2016] New Scientist (re: Putman and Clark 2015, The Southwestern Naturalist)
- [2016] National Geographic (re: Putman and Clark 2015, The Southwestern Naturalist)
- [2015] Herp Nation Radio Network (re: squirrel-snake interactions)
- [2015] *Venom Hunters*, Authentic Entertainment, Los Angeles
- [2015] *World's Sneakiest Animals* series on BBC, United Kingdom
- [2015] *Natural Born Hustlers* series on PBS Nature, USA
- [2013] *Talk to the Animals* series on BBC, United Kingdom
- [2013] National Geographic (re: Putman and Clark 2015, Behavioral Ecology)
- [2012] Documentary television series on NHK, Japan
- [2012] Sacramento Channel 10 News (re: biorobotics in ecological research)
- [2012] San Jose Mercury Newspaper (re: biorobotics in ecological research)
- [2012] Blog post on the robotics website Hizook.com