

RULON W. CLARK CURRICULUM VITAE

Rulon W. Clark, Professor
Department of Biology
5500 Campanile Drive
San Diego State University
San Diego, CA 92182

p. 619-594-1527
f. 619-594-5676
rclark@sdsu.edu
<http://www.bio.sdsu.edu/pub/clark/>

PROFESSIONAL EXPERIENCE

Professor, Department of Biology, San Diego State University, 2020 – present
Associate Professor, Department of Biology, San Diego State University, 2013 – 2020
Assistant Professor, Department of Biology, San Diego State University, 2007 – 2013
Postdoctoral Research, Cornell University, Ecology and Evolutionary Biology, 2004 – 2007
Ph.D., Cornell University, Neurobiology and Behavior, 1997 – 2004
B.S., Biology, Utah State University, 1994 – 1997

PEER-REVIEWED PUBLICATIONS

*SDSU graduate student †SDSU undergraduate student

1. ‡Hammond JE, ‡Witkowski S, ‡Wilson T, ‡Zouvi CA, ‡Goetz NL, ‡Eck N, Clark RW, 2020. Know thy enemy: predator identity influences the response of western banded geckos (*Coleonyx variegatus*) to chemosensory cues. *Journal of Herpetology*, in press.
2. Teshera MS, Clark RW, 2020. Strike-induced chemosensory searching in reptiles: a review. *Herpetological Monographs*, in press.
3. *Whitford MD, *Freymler GA, Higham, TE, Clark RW, 2020. The effects of temperature on the kinematics of rattlesnake predatory strikes in both captive and field environments. *Integrative Organismal Biology*, 2:cov011-13..
4. Glaudas X, *Rice SE, Clark RW, Graham A, 2020. Male energy reserves, mate-searching activities, and reproductive success: alternative resource use strategies in a presumed capital breeder. *Oecologia*, 194:415-425.
5. Levine BA, Schuett GW, Clark RW, Repp RA, Herrmann HW, Booth W, 2020. No evidence of male-biased sexual selection in a snake with conventional Darwinian sex roles. *Royal Society Open Science* 7:201261.
6. Holding MA, *Putman BJ, Kong L, Smith JE, Clark RW, 2020. Physiological stress integrates resistance to rattlesnake venom and the onset of risky foraging in California ground squirrels. *Toxins*, 12:617.
7. *Whitford MD, *Freymler GA, Higham, TE, Clark RW, 2020. The effects of temperature on the defensive strike of rattlesnakes. *Journal of Experimental Biology*, 223:jeb223859
8. Stanley TR[¶], Clark RW[¶], Fisher RN, Rochester CJ, Root SA, Lombardo KJ, Ostermann-Kelm SD, 2020. Long-term monitoring reveals changes in abundance and body size among vertebrate species occupying an insular urban habitat reserve. *Conservation Science and Practice* 2:734. [¶]Denotes co-senior authors.

9. Ko YW, Liao CP, Clark RW, Hsu JY, Tseng HY, Huang WS, 2020. Aposematic coloration enhances memory ability in an Agamid lizard. *Animal Behaviour* 161:1-13.
10. Glaudas X, *Rice SE, Clark RW, Graham A, 2020. The intensity of sexual selection, body size and reproductive success in a mating system with male-male combat: Is bigger better? *Oikos*, 129:998-1011.
11. *Whitford MD, *Freymiller GA, Clark RW, 2019. Managing predators: the influence of kangaroo rat antsnake displays on sidewinder rattlesnake hunting behavior. *Ethology* 279:3827-7.
12. *Whitford MD, *Freymiller GA, Higham TE, Clark RW, 2019. Determinants of predation success: How to survive an attack from a rattlesnake. *Functional Ecology*, 33:1099-1109.
13. *Schraft HA, Bakken GS, Clark RW, 2019. Infrared-sensing snakes select ambush orientation based on thermal backgrounds. *Scientific Reports* 9:3950.
14. *Freymiller GA, *Whitford MD, Higham TE, Clark RW, 2019. Escape dynamics of free-ranging desert kangaroo rats (Rodentia: Heteromyidae) evading rattlesnake strikes. *Biological Journal of the Linnean Society* 127:164-172.
15. *Schraft HA, Clark RW, 2019. Sensory basis of navigation in snakes: the relative importance of eyes and pit organs. *Animal Behaviour* 147:77-82.
16. Bakken GS, *Schraft HA, †Cattell RW, †Tiu DB, Clark RW, 2018. Cooler snakes respond more strongly to infrared stimuli, but we have no idea why. *The Journal of Experimental Biology* 221:jeb182121-17
17. *Lion KA, *Rice SE, Clark RW, 2018. Genetic patterns in fragmented habitats: a case study for two *Peromyscus* species in southern California. *Journal of Mammalogy* 99:923-935.
18. *Schraft HA, Goodman C, Clark RW, 2018. Do free-ranging rattlesnakes use thermal cues to evaluate prey? *Journal of Comparative Physiology A* 204:295-303.
19. Lee CY, Yo SP, Clark RW, Hsu JY, Liao CP, Tseng HY, Huang WS, 2018. The role of different visual characters of weevils signalling aposematism to sympatric lizard predators. *Journal of Zoology* 306:36-47.
20. *Rice SE, †Moustakas E, Nava R, Glaudas X, Alexander GJ, Clark RW, 2017. Characterization of 11 cross-amplifying microsatellite loci for *Bitis arietans* (Merrem, 1820). *Herpetology Notes* 10:329-333.
21. *Freymiller GA, *Whitford MD, Higham TE, Clark RW, 2017. Recent interactions with snakes enhance escape performance of desert kangaroo rats (Rodentia: Heteromyidae) during simulated attacks. *Biological Journal of the Linnean Society* 122: 651-660.
22. †Ayon RW, *Putman, BJ, Clark RW, 2017. Recent encounters with rattlesnakes enhance ground squirrel responsiveness to predator cues. *Behavioral Ecology and Sociobiology* 71:149.
23. *Whitford MD, *Freymiller GA, †Ryan JM, Steele DPJ, Tapia CN, Clark RW, 2017, *Chionactis occipitalis*: hypomelanism. *Herpetology Notes* 10:411-412
24. *Schraft HA, Clark RW, 2017. Kangaroo rats change temperature when investigating rattlesnake predators. *Physiology & Behavior* 173:174-18
25. *Putman BJ, Clark RW, 2017. Behavioral thermal tolerances of free-ranging rattlesnakes (*Crotalus oreganus*) during the summer foraging season. *Journal of Thermal Biology* 65:8-15
26. *Whitford MA, *Freymiller GA, Clark RW, 2017. Avoiding the serpent's tooth: predator-prey interactions between free-ranging sidewinder rattlesnakes and desert kangaroo rats. *Animal Behaviour* 130:73-78.

27. Higham TE, Clark RW, Collins CE, *Whitford MD, *Freymler GA, 2017. Rattlesnakes are extremely fast and variable when striking at kangaroo rats in nature: three-dimensional high-speed kinematics at night. *Science Reports* 7:40412.
28. *Rice SE, Beasley RR, Lance SL, Jones KL, Clark RW, 2016. Development of 24 polymorphic microsatellite markers for the Island Night Lizard (*Xantusia riversiana*). *Conservation Genetics Resources* 8:169–196.
29. Clark RW, Dorr SW, *Whitford MD, *Freymler GA, Hein SR, 2016. Comparison of anti-snake displays in the sympatric desert rodents *Xerospermophilus tereticaudus* (round-tailed ground squirrels) and *Dipodomys deserti* (desert kangaroo rats). *Journal of Mammalogy* 97:1709-1717.
30. *Kabes LE, Clark RW, 2016. The use of chemical cues by Granite Night Lizards (*Xantusia henshawi*) to evaluate potential predation risk. *Copeia* 104:930–941.
31. *Rice S, Clark RW, 2016. *Xantusia riversiana* (Island Night Lizard) amelanism. *Herpetological Review* 47:675.
32. Maritz B, Penner J, Martins M, Crnobrnja-Isailović J, Spear S, Alencar LRV, Sigala-Rodriguez J, Messenger K, Clark RW, Soorae P, Luiselli L, Jenkins C, Greene HW, 2016. Identifying global priorities for the conservation of vipers. *Biological Conservation* 204:94-102.
33. *Putman BJ, *Barbour MA, Clark RW, 2016. The foraging behavior of free-ranging rattlesnakes (*Crotalus oreganus*) in California ground squirrel (*Otospermophilus beecheyi*) colonies. *Herpetologica* 72:55-63.
34. *Rice S, *Putman BJ, *Schraft H, Clark RW, 2016. *Crotalus oreganus helleri* (Southern Pacific Rattlesnake), loss of rattle style and matrix. *Herpetological Review* 47:679.
35. Pike DA, Clark RW, Manica A, Tseng H-Y, Hsu J-Y, Huang W-S, 2016. Surf and turf: predation by egg-eating snakes has led to the evolution of parental care in a terrestrial lizard. *Science Reports* 10.1038/srep22207
36. Clark RW, Dorr SW, Whitford MD, ‡Freymler GA, *Putman BJ, 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.
37. *Putman BJ, Clark, RW, 2015. Habitat manipulation in hunting rattlesnakes (*Crotalus* species). *Southwestern Naturalist* 60:374-377.
38. *Hoss SK, Deutschman DH, Booth W, Clark RW, 2015. Post-birth separation affects the affiliative behaviour of kin in a pitviper with maternal attendance. *Biological Journal of Linnean Society* 116:637-648.
39. *Putman BJ, Clark RW, 2015. *Crotalus oreganus* (Northern Pacific Rattlesnake): non-rattling tail display. *Herpetological Review* 46:269–270.
40. *Putman BJ, Coss RG, Clark RW, 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.
41. *Santana FE, Swaisgood RR, Lemm JM, Fisher RN, Clark RW, 2015. Chilled frogs are hot: hibernation and reproduction of the Endangered mountain yellow-legged frog *Rana muscosa*. *Endangered Species Research* 27:43–51.
42. *Putman BJ, Clark RW, 2015. The fear of unseen predators: ground squirrel tail flagging in the absence of snakes signals vigilance. *Behavioral Ecology* 26:185-193.

43. *Hoss SK, Garcia MJ, Early RL, Clark RW, 2014. Fine-scale hormonal patterns associated with birth and maternal care in the cottonmouth (*Agkistrodon piscivorus*), a North American pitviper snake. *General and Comparative Endocrinology* 208:85-93.
44. Clark RW, Schuett GA, Repp RA, Amarello M, Smith CF, Herrmann HW, 2014. Mating systems, reproductive success, and sexual selection in a secretive species: A case study of the Western Diamond-Backed Rattlesnake, *Crotalus atrox*. *PLoS ONE* 9:e90616.
45. Rogers LL, Mansfield SA, Hornby K, Hornby S, Debruyne TD, Mize M, Clark RW, Burghardt GM, 2014. Black bear reactions to venomous and non-venomous snakes in Eastern North America. *Ethology* 120:641-651.
46. Brennan PLR, Clark RW, Mock DW, 2014. Time to step up: defending basic science and animal behaviour. *Animal Behaviour* 94:101-105.
47. *Hoss SK, Clark RW, 2014. Mother cottonmouths (*Agkistrodon piscivorus*) alter their antipredator behavior in the presence of neonates. *Ethology* 120:933-941.
48. *Barbour MA, Clark RW, 2012. Ground squirrel tail-flag displays alter both predatory strike and ambush site selection behaviours of rattlesnakes. *Proceedings of the Royal Society B Biological Sciences* 279:3827-3833.
49. Clark RW, †Tangco S, *Barbour MA, 2012. Field recordings reveal factors that influence predatory strike success of free-ranging rattlesnakes (*Crotalus* spp.). *Animal Behaviour* 84:183-190.
50. Clark RW, Brown WS, Stechert R, Greene HW, 2012. Cryptic sociality in rattlesnakes (*Crotalus horridus*) kinship analysis. *Biology Letters* 8:523-525.
51. *Barbour MA, Clark RW, 2012. Diel cycles in chemosensory behavior of free-ranging rattlesnakes lying in wait for prey. *Ethology* 118:480-488.
52. Clark RW, †Ramirez G, 2011. Rosy boas (*Lichanura trivirgata*) use chemical cues to identify female mice (*Mus musculus*) with litters of dependent young. *Herpetological Journal* 21:187-191
53. Clark RW, Marchand MN, Clifford BJ, Stechert R, †Stephens S, 2011. Decline of an isolated timber rattlesnake (*Crotalus horridus*) population: Interactions between climate change, disease, and loss of genetic diversity. *Biological Conservation* 144:886-891.
54. Joshi SS, Johnson R, Rundus A, Clark RW, *Barbour M, and Owings DH, 2011. Robotic squirrel models: study of squirrel-rattlesnake interaction in laboratory and natural settings. *IEEE-RAM* 18:59-68.
55. Clark RW, Brown WS, Stechert R, Zamudio KR, 2010. Roads, interrupted dispersal, and genetic diversity in timber rattlesnakes (*Crotalus horridus*). *Conservation Biology* 24:1059-1069.
56. Clark RW, Brown WS, Stechert R, Zamudio KR, 2008. Integrating individual behavior and landscape genetics: the population structure of timber rattlesnake hibernacula. *Molecular Ecology* 17:719-730.
57. Clark RW, 2007. Public information for solitary foragers: timber rattlesnakes use conspecific chemical cues to select ambush sites. *Behavioral Ecology* 18:487-490.
58. Clark RW, 2006. Strike-induced chemosensory searching by timber rattlesnakes during natural predation events. *Ethology* 112:1089-1094.
59. Clark RW, 2006. Fixed videography to study predation behavior of an ambush foraging snake, *Crotalus horridus*. *Copeia* 2006:181-187.

60. Clark RW, 2005. Pursuit-deterrent communication between prey animals and timber rattlesnakes (*Crotalus horridus*): the response of snakes to harassment displays. *Behavioral Ecology and Sociobiology* 59:258-261.
61. Clark RW, 2004. Feeding experience modifies the assessment of ambush sites by the timber rattlesnake, a sit-and-wait predator. *Ethology* 110: 471-483.
62. Clark RW, 2004. Kin recognition in rattlesnakes. *Proceeding of the Royal Society of London Series B Biology Letters* 271: S243–S245.
63. Clark RW, 2004. Timber rattlesnakes (*Crotalus horridus*) use chemical cues to select ambush sites. *Journal of Chemical Ecology* 30: 607-617.
64. Clark RW, 2002. Diet of the timber rattlesnake, *Crotalus horridus*. *Journal of Herpetology* 36: 494-499.

BOOK CHAPTERS AND BOOK REVIEWS

1. Clark RW, 2016. Hunting and feeding behavior in free-ranging snakes. In: *Rattlesnakes of Arizona* (Schuett FW, Feldner MJ, Reiserer RS, Smith CF, eds). Eco Publishing, Rodeo NM.
2. Schuett GW, Clark RW, Repp RA, Amarello M, Greene HW, 2016. Social behavior of rattlesnakes: a shifting paradigm. In: *Rattlesnakes of Arizona* (Schuett FW, Feldner MJ, Reiserer RS, Smith CF, eds). Eco Publishing, Rodeo NM.
3. Clark RW, 2015. Book Review: *How Snakes Work: Structure, Function, and Behavior of the World's Snakes*. *The Quarterly Review of Biology* 90:350.

RESEARCH GRANTS

1. Clark RW (PI), Long JD (Co-PI), 2013-current (renewed annually). Partnership to provide student internships in field sciences. National Park Service, funded at \$15,980 year, with ongoing renewal.
2. Long JD (PI), Clark RW (Co-PI), Lombardo K (Co-PI), Sigala-Rodriguez JJ (Co-PI), 2020-2021. Improving the siting and practices of offshore finfish farms in the Southern California Bight by incorporating historical and modern data from islands near existing fish pens, California Sea Grant. \$50,000 over two years.
3. Clark RW (PI), Goode M (Co-PI), Fischer C (Co-PI), 2020-2025. Integrating fine-scale landscape genomics into rangewide monitoring and management of flat-tailed horned lizards. Department of Defense. \$186,000 over 5 years.
4. Clark RW (PI), Higham TE (Co-PI), Sukuruman J (Co-PI), 2019-2023. Strike while the snake is hot: will increasing nighttime temperatures make an endothermic keystone species more susceptible to ectothermic predators? National Science Foundation, total of \$655,000 over 5 years, approximately \$400,000 to Clark research group.
5. Goode M (PI), Clark RW (Co-PI), 2018-2019. Flat-tailed horned lizard monitoring, Bureau of Reclamation. \$49,000.
6. Clark RW, 2017-2019. Biochemical warfare: coevolution of venom and venom resistance in rattlesnakes and mammals, CSUPERB, \$14,600.
7. Clark RW, 2016. High speed predator prey interactions between rattlesnakes and kangaroo rats, University Grant Program, SDSU, \$9,600.
8. Glaudas X (PI), Clark RW, 2015. Reproductive success and polyandry in puff adders, National Geographic Society, \$4,000.

9. Rice S (Co-PI), Clark RW (PI), 2015. Effects of climate change on island night lizards. Santa Monica Mountains Fund, \$5,400.
10. Clark, RW, 2014. Mating system and ecology of Coronado Island rattlesnake, University Grant Program, SDSU, \$9,800.
11. Rice S (Co-PI), Clark RW (PI), 2013. Conservation genetics of terrestrial vertebrates in habitat fragments of Cabrillo National Monument. National Park Service, \$5,000.
12. Clark RW, 2012. Using fine-scale population genetics to monitor the endangered San Clemente Island night lizard (*Xantusia riversiana*). United States Army Corps of Engineers, \$109,000.
13. Clark RW, 2012. Fine-scale genetic analysis of *Phaeognathus hubrichti*. Alabama Fish and Wildlife, \$11,500.
14. Clark RW (PI), Joshi S (Co-PI), 2010. Understanding predator-prey signaling interactions: the dynamics of antsnake displays in ground squirrels and kangaroo rats, National Science Foundation, \$390,000 over four years.
15. Clark RW, 2010. Conservation genetics of terrestrial vertebrates in San Diego County. University Grants Program, \$9,100.
16. Clark RW (PI), Fisher RA (Co-PI), 2009. Using landscape genetics to understand the impacts of habitat fragmentation on small animal communities in San Diego County. San Diego Foundation, \$70,700.
17. Clark RW, 2008. Understanding antsnake signaling displays in ground squirrels. National Geographic Society, \$14,400
18. Clark RW, 2007. Genetic diversity in an isolated timber rattlesnake population. New Hampshire Department of Fish and Game, \$7,100.
19. Clark RW, 2006. Population assessment of timber rattlesnakes in New York State. The Nature Conservancy, \$8,500.
20. Clark RW (PI), Greene HW (Co-PI), 2005. Population genetics of timber rattlesnakes. New York State Biodiversity Research Institute, \$29,730.
21. Clark RW, 2004. Conservation genetics of timber rattlesnakes. Edna Bailey Sussman Environmental Internship, \$2,700.
22. Clark RW, 2004. Kin-based sociality in timber rattlesnakes. Student Research Grant, Cornell University, \$1,000.
23. Clark RW, 2003. Ambush site-selection behaviors of timber rattlesnakes. Cornell University Sigma Xi Student Research Grant, \$550.
24. Clark RW, 2003. Optimal foraging models for ambush foragers. National Science Foundation Doctoral Dissertation Improvement Grant, \$9,986.
25. Clark RW, 2001. Ecology and behavior of the timber rattlesnake, a unique Adirondack species. Kieckhefer Adirondack Fellowship, \$4,650.
26. Clark RW, 2001. The foraging ecology of timber rattlesnakes. Mellon Foundation Fellowship, \$400.
27. Clark RW, 2000. The evolution of venom variability in venomous snakes. American Museum of Natural History Theodore Roosevelt Memorial Grant, \$1,000.
28. Clark RW, 1998. Ultimate causes of venom variation in western diamondback rattlesnakes, *Crotalus atrox*. American Museum of Natural History Southwestern Research Station Grant, \$800.

1. *Whitford MD, *Freymler GA, Higham, TE, Clark RW, 2020. The effect of temperature on predator and defense strikes of rattlesnakes. Society for Integrative and Comparative Biology, Austin TX.
2. Christensen BA, Schwaner MJ, *Freymler GA, Clark RW, McGowan CP, 2020. Exploring Reaction Time in Desert Kangaroo Rats. Society for Integrative and Comparative Biology, Austin TX.
3. Mendoza E, Schwaner J, *Freymler G, McGowan C, Clark RW, Azizi E, 2020. Kinematics of kangaroo rat foot-drumming. Society for Integrative and Comparative Biology, Austin TX.
4. *Freymler GA, Schwaner MJ, *Whitford MD, McGowan CP, Higham TE, Clark RW, 2020. Determining the functional significance of bipedalism in heteromyid rodents through comparisons of morphology and performance. Society for Integrative and Comparative Biology, Austin TX.
5. Schwaner MJ, *Freymler GA, Clark RW, McGowan CP, 2020. A heightened vigilance state alters mechanics of jumpbacks in kangaroo rats (*D. deserti*). Society for Integrative and Comparative Biology, Austin TX.
6. *Robinson KE, Holding ML, Clark RW, 2020. Biochemical Warfare: The Coevolution of Rattlesnake Venom and Venom Resistance in Prey Species. Society for Integrative and Comparative Biology, Austin TX.
7. Bakken GS, *Schraft HA, †Orduno-Baez A, Clark RW, 2020. Temperature Dependences and Angular Resolution of the Pacific Rattlesnake Facial Pit. Society for Integrative and Comparative Biology, Austin TX.
8. Schwaner MJ, *Freymler GA, Clark RW, McGowan CP, 2020. A heightened vigilance state alters mechanics of jump backs in kangaroo rats (*D. deserti*). Society for Integrative and Comparative Biology, Austin TX.
9. *Whitford MD, *Freymler GA, Higham, TE, Clark RW, 2019. The effect of temperature on snake strike performance. Biology of Pitvipers 3, Roedo, NM.
10. †Orduno-Baez A, Bakken GS, Clark RW, 2019. Body temperature does not influence behavioral responsiveness of rattlesnakes to visual stimuli. SDSU Student Research Symposium.
11. Clark RW, *Schraft HA, Bakken GS, 2018. Warmer snakes are less response to temperature contrast, Joint Annual Meeting of Ichthyologists and Herpetologists.
12. *Robinson KE, Clark RW, 2018. Biochemical Warfare: the coevolution of venom and venom resistance among small mammals. Venom Week Conference, University of Texas Kingsville
13. †Tiu D, Cattell RW, Clark RW, 2018. The influence of body temperature on infrared sensing in pit vipers. SDSU Student Research Symposium.
14. †Cattell RW, Tiu D, Clark RW, 2018. Quantifying behavioral responses to thermal stimuli in rattlesnakes. SDSU Student Research Symposium.
15. †Hammond J, Clark RW, 2018. Behavioral responses of banded geckos from predatory and non-predatory snake scents. SDSU Student Research Symposium.
16. *Whitford MD, *Freymler GA, Clark RW, 2017. High speed snake strikes in nature. Society for Integrative and Comparative Biology, New Orleans.

17. *Freymler GA, *Whitford MD, Clark RW, 2017. How to avoid a snake strike. Society for Integrative and Comparative Biology, New Orleans.
18. *Hoss SK, Clark RW, 2016. Maternal care behavior in pitvipers. Joint Annual Meeting Ichthyologists and Herpetologists, New Orleans, CA.
19. *Schraft HA, Clark RW, 2016. Kangaroo rats change body temperature when interacting with rattlesnakes. Gordon Research Conference on Predator-Prey Interactions, Ventura CA.
20. *Whitford MD, Freymler GA, Clark RW, 2016. Avoiding snake strikes: the effect of kangaroo anti-snake behavior on sidewinder rattlesnakes. Gordon Research Conference on Predator-Prey Interactions, Ventura CA.
21. *Putman B, Clark RW, 2015. Evasive responses of squirrels to rattlesnake strikes. Joint Annual Meeting of Ichthyologists and Herpetologists, Reno NV. *Clark grad student BJ Putman won the award for best student presentation for this talk.*
22. Clark RW, Dorr SW, Whitford MD, Freymler GA, 2015. Predator prey interactions between sidewinder rattlesnakes and desert kangaroo rats. Joint Annual Meeting of Ichthyologists and Herpetologists, Reno NV.
23. ‡Schefski J, *Putman B, Clark RW, 2014. Olfactory and visual cues used in snake discrimination by ground squirrels. SDSU Student Research Symposium, San Diego CA.
24. *Putman B, Clark RW, 2014. The unseen predator is the most fearful: evasive responses of squirrels to rattlesnake strikes. Gordon Research Conference on Predator-Prey Interactions, Ventura CA.
25. Clark RW, *Putman B, 2014. Predator-prey communication between ground squirrels and rattlesnakes. Gordon Research Conference on Predator-Prey Interactions, Ventura CA.
26. *Luckau T, Clark RW, 2013. Fine scale population genetics of two lizard species in southern California. Joint Annual Meeting of Ichthyologists and Herpetologists, Albuquerque NM.
27. *Williams L, Clark RW, 2013. Chemical cues used in predation risk assessment by granite night lizards. Joint Annual Meeting of Ichthyologists and Herpetologists, Albuquerque NM.
28. Clark RW, *Barbour MA, *Putman B, 2013. Natural interactions between ground squirrels and rattlesnakes. Animal Behavior Society, Boulder CO.
29. ‡Ayon R, Clark RW, 2013. Responses of ground squirrels to rattlesnake associated cues under field conditions. Animal Behavior Society, Boulder CO.
30. *Putman B, Clark RW, 2013. Experimental tests of ground squirrel vigilance toward rattlesnakes. Animal Behavior Society, Boulder CO.
31. *Putman B, Taylor E, Clark RW, 2012. Factors influencing the spatial ecology of northern Pacific rattlesnakes at different spatial scales. World Congress of Herpetology, Vancouver, Canada.
32. Clark RW, *Barbour MA, 2012. The response of rattlesnakes to the anti-snake displays of California ground squirrels. World Congress of Herpetology, Vancouver, Canada.
33. Clark RW, ‡Tangco S, *Barbour MA, 2011. Strike behavior of free-ranging rattlesnakes. Joint Annual Meeting of Ichthyology and Herpetology, Minneapolis MN.
34. Clark RW, ‡Tangco S, *Barbour MA, 2011. Predator-prey interactions between rattlesnakes and ground squirrels. Biology of the Rattlesnakes Conference, Tuscon, AZ.
35. *Santana F, Clark RW, Swaisgood R, Lemm J, Fisher RA, 2011. Measuring the Behavioral Effects of Artificial Hibernation in a Captive Population of Southern Mountain Yellow-

- Legged Frogs (*Rana muscosa*). Student Research Symposium, San Diego State University, San Diego, CA.
36. ‡Tangco S, Clark RW, *Barbour MA, 2011. The rattlesnake strikes under natural conditions. Student Research Symposium, San Diego State University, San Diego, CA. (*Tangco received Dean's Award for this presentation*)
 37. *Santana F, Clark RW, Swaisgood R, Lemm J, Fisher RA, 2011. Measuring the Behavioral Effects of Artificial Hibernation in a Captive Population of Southern Mountain Yellow-Legged Frogs (*Rana muscosa*). California/Nevada Declining Amphibian Population Task Force Conference, Yosemite Valley, CA
 38. ‡Tangco S, Clark RW, *Barbour MA, 2010. Timing and orientation of rattlesnake strikes under natural conditions (Poster). Annual Biomedical Research Conference for Minority Students, Charlotte, NC.
 39. *Barbour MA, Clark RW, 2010. The response of free-ranging rattlesnakes to antipredator behavior of ground squirrels. Animal Behavior Society, Williamsburg, VA.
 40. Clark RW, Barbour MA, 2010. Predator-prey interactions and the outcome of snake strikes. Animal Behavior Society, Williamsburg, VA.
 41. *Santana F, Clark RW, Swaisgood R, Lemm J, Fisher RA, 2010. Captive husbandry and breeding program for the Mountain Yellow-Legged Frog (*Rana muscosa*) at the San Diego Zoo's Institute for Conservation Research. Climate Change and Conservation of Native Amphibians Meeting, Albuquerque, NM.
 42. ‡Sabga, B, Clark RW, 2009 Manual lateralization in captive siamangs (poster). Student Research Symposium, San Diego State University, San Diego, CA.
 43. Clark RW, Brown WS, Stechert R, Zamudio KR, 2009. Don't tread on them: roads, interrupted dispersal, and genetic diversity in timber rattlesnakes (*Crotalus horridus*). 5th Annual Meeting of the Snake Ecology Group, Lewiston ID.
 44. *Barbour MA, Clark RW, 2009. Quantifying the foraging behavior of ambush hunting snakes, 5th Annual Meeting of the Snake Ecology Group, Lewiston ID.
 45. Clark RW, *Barbour MA, 2009. Ambush foraging behaviors of free-ranging rattlesnakes. Joint Meeting of Ichthyologists and Herpetologists, Portland OR.
 46. Clark RW, 2008. Cryptic social structure in reptiles: relatedness and aggregation in timber rattlesnakes. International Society for Behavioral Ecology.
 47. Clark RW, 2007. Population genetics in road-fragmented habitats. Roads and Ecopassages Forum, Toronto Zoo, Toronto, Canada.
 48. Clark RW, 2006. Mating behavior, gene flow, and population structure of timber rattlesnakes in fragmented habitats. Animal Behavior Society, Salt Lake City, UT.
 49. Clark RW, 2005. Timber rattlesnakes alter foraging behavior in response to pursuit-deterrent signals. Animal Behavior Society, Salt Lake City, UT.
 50. Clark RW, 2005. The use of fixed videography to monitor rattlesnake predatory behavior. Biology of the Rattlesnakes Symposium, Loma Linda University, Loma Linda CA.
 51. Clark RW, 2004. Kin recognition in rattlesnakes. 4th Annual Snake Ecology Group, Indianapolis, IN.
 52. Clark RW, 2003. Feeding experience and ambush site selection in *Crotalus horridus*. Joint Meeting of Ichthyologists and Herpetologists, Indianapolis, IN.

53. Clark RW, 2002. The use of prey-derived chemical cues by timber rattlesnakes (*Crotalus horridus*) to select ambush sites. International Society for Behavioral Ecology, Montreal, Canada.
54. Clark RW, 2001. The use of chemical cues in ambush site selection by timber rattlesnakes (*Crotalus horridus*). Joint Meeting of Ichthyologists and Herpetologists, State College, PA.

* SDSU graduate student † SDSU undergraduate student

OTHER PUBLICATIONS

1. Whitford MW, Freymiller GA, Clark RW, 2018. Rattlesnakes and kangaroo rats. Desert Report: News of the Desert from Sierra Club California. December 2018.
2. Whitford MW, Freymiller GA, Clark RW, 2018. Predator-prey interactions between rattlesnakes and kangaroo rats. Mojave National Preserve Science Newsletter 2018:1-4.
3. Nowak E, Schuett GW, Clark RW, 2014. Climate change and pitvipers: a case study of the Arizona Black Rattlesnake (*Crotalus cerberus*). IUCN Viper Specialist Group Newsletter, Sept 2014.
4. Rypien KL, Anderson J, Andras J, Clark RW, Gerrish GA, Mandel JT, Riskin DK, 2007. Students unite to create State of the Planet course. Nature 447:775.
5. Clark RW, 2005. Social lives of rattlesnakes. Natural History, 114:36-42.
6. Clark RW, 2005. Chromatophores allow chameleons to change colors. *Ithaca Journal* January 27, 2005.
7. Sherman PW, Clark RW, 2003. Cornell class explores insect behavior at Plantations. Cornell Plantation Notes 80:2-3

INVITED ACADEMIC TALKS

- 2019, Honored Guest, Biology of Pitvipers Conference, Chiricahua Desert Museum, Rodeo NM
2019, Science Day Symposium, Cabrillo National Monument, San Diego
2019, Research PI Presentation, San Diego State University Research Foundation Board Meeting
2018, Zoology Club, SDSU
2018, Chiricahua Desert Museum, Rodeo NM
2017, Department of Biology, University of Idaho
2017, Department of Biology, CSU Fullerton
2016 San Diego Zoo Education and Outreach, San Diego CA
2016 Colorado Desert Natural History Research Symposium, Anza Borrego, CA
2016 Department of Ecology, Evolution, and Organismal Biology, Ohio State University
2016 Department of Ecology and Evolution, University of California San Diego
2015 Department of Biology, Southern Utah University
2015 Department of Biology, California Polytechnic State University San Luis Obispo
2014 Keynote Speaker, Sociedad Herpetológica Mexicana, XIII Reunión Nacional de Herpetología en la Universidad Autónoma de Aguascalientes, 2014 (13th Annual Meeting of the National Meeting of the Mexican Society of Herpetologists)
2014 Department of Biology, Loma Linda University, Loma Linda CA
2013 Department of Evolution, Ecology, and Organismal Biology, UC Riverside, CA
2012 Department of Biology, Bucknell University, Lewisburg PA
2012 Institute for Conservation Research, San Diego, CA

2012 Department of Biology, CSU Fullerton
2011 Department of Biology, CSU Northridge
2011 Graduate Student Biological Society, CSU Long Beach
2011 Department of Ecology and Evolutionary Biology, UCLA
2010 Center for Teaching and Learning, SDSU, CA.
2009 Department of Biology, Loma Linda University, Loma Linda, CA
2009 San Diego Zoo Institute for Conservation Research, San Diego, CA
2008 Evolution, Ecology, and Organismal Biology Graduate Group, UC Riverside, CA
2008 Department of Geography, San Diego State University
2008 Department of Biology, San Diego State University
2007 Department of Ecology and Evolutionary Biology, Cornell University
2006 Department of Biology, California Polytechnic State University Pomona
2006 Department of Biology, San Diego State University
2006 Shawangunk Ridge Biodiversity Partnership Lecture Series, State University of New York, New Paltz.
2005 Department of Biology, Queen's University.
2005 Muhlenberg College Johnson & Johnson Pharmaceutical Research and Development LCC Seminar Series.
2005 New York State Outdoor Education Association, Featured Speaker

TEACHING EXPERIENCE

Instructor: Herpetology, 2019-present.

- Advanced upper division field and laboratory course in the ecology, evolution, and study of amphibians and reptiles

Instructor: Animal Behavior, 2007-present.

- Annual upper division lecture course in animal behavior

Instructor: Experimental Design and Data Analysis in Behavior and Ecology, 2012-present.

- Annual graduate seminar course

Research Mentor: Faculty-Student Mentoring Program, SDSU, 2008 - present

- Undergraduate research program designed to mentor students from disadvantaged socioeconomic backgrounds in scientific research

Lead Instructor: Theories and Principles of Ecology, Fall 2010.

- Advanced ecology course team-taught by three ecology faculty members

Co-Instructor: Theories and Principles of Ecology (biannually), Fall 2012-present

- Advanced ecology course team-taught by three ecology faculty

Instructor: Introduction to Biostatistics, Fall 2011, Spring 2017.

- Lower division course in statistics for biology majors at SDSU

Instructor: Advanced Topics in Ecology, 2010.

- Advanced seminar course in ecology

Instructor: Behavioral Ecology Laboratory, 2008-2009.

- Upper division laboratory course in behavioral ecology

Co-Course Coordinator: State of the Planet, 2006-2007.

- With other members of committee, developed and implemented this inter-disciplinary course designed to highlight the impending crises our society will face in the future, and how we might be able to best deal with them.

Head Teaching Assistant: Introduction to Neurobiology, 2004

- Administrative duties for large lectures, organizing and leading discussion sections

Head Teaching Assistant: Introduction to Animal Behavior, 2002

- Administrative duties for large lectures, designing curriculum for discussion sections and field studies in animal behavior, leading discussion sections

Teaching Assistant: Herpetology, 2001

- Organizing and administering laboratory component of course

Instructor: Writing in the Majors, Introduction to Animal Behavior, 2000

- Developed and taught discussion-based writing course for advanced undergraduates in animal behavior

Teaching Assistant: Introduction to Animal Behavior, 1998 and 1999

- Leading undergraduate discussion sections

Teaching Assistant: Introduction to Biology, 1997

- Leading undergraduate laboratory in introductory biology

STUDENTS ADVISED

Doctoral Students:

- Shannon Hoss (2008 – 2013)
- Breanna Putman (2010 – 2016)
- Stephen Rice (2011- 2017)
- Hannes Schraft (2014 – 2019)
- Malachi Whitford (2015 – 2020)
- Grace Freymiller (2016 – present)
- Dylan Maag (2018 – present)
- Ryan Hanscom (2020 – present)
- Craig Fischer (2020 – present)
- Ana Gomez Ramirez (2020 – present; co-advised with Dr. Jeremy Long)

Masters Students:

- Matthew Barbour (2008 – 2011)
- Frank Santana (2008 – 2011)
- Laura Williams (2011- 2013)
- Tara Luckau (2010 – 2014)
- JP Montagne (2011 – 2015)
- Kelly Lion (2013 – 2016)
- Kelly Robinson (2016-2019)
- Roman Nava (2016-present)
- Nathan Redetzke (2017 – present)
- Craig Fischer (2017 – 2020)
- Jordyn Mulder (2017 – present)
- Nathan Smith (2018 – present)

Undergraduate Students:

- Over 100 undergraduate students have served as research assistants in the Clark Lab since 2007. Several undergraduate research projects that have led to scientific publications and presentations (see sections on *Peer-reviewed Publications* and *Presentation at Conferences* above).

AWARDS AND HONORS

- Guest of Honor, Biology of Pitvipers Symposium, Chiricahua Desert Museum, July 2019
- Outstanding Faculty, Department of Biology, San Diego State University, 2017
- Keynote Speaker, National Meeting of the Mexican Society of Herpetologists, 2014
- Outstanding Teaching Assistant, Neurobiology and Behavior, Cornell University, 2003

ACADEMIC AND COMMUNITY SERVICE

IUCN Regional Coordinator:

- International Union for the Conservation of Nature, Viper Specialist Group, coordinator for North American Region, 2012 – present.

Associate Editor:

- Herpetologica, 2009 – present.

Undergraduate Curriculum Advisor, Ecology Emphasis

- SDSU, 2015 – present.

Ad Hoc Reviewer:

	Journal/Institution (# reviews)	
American Midland Naturalist (1)	Biology of Rattlesnakes (2)	Conservation Genetics (2)
Animal Behavior (6)	Ethology (3)	Journal of Mammalogy (1)
ABS Student Research Grant (3 years)	Frontiers Ecology & Evolution (1)	Journal Wildlife Management (4)
Biological Conservation (1)	Functional Ecology (3)	Journal of Zoology (1)
Biology Letters (2)	Graduate Women in Science (1)	Mammalian Species (1)
Behavioral Ecology (5)	Heredity (1)	Molecular Ecology (3)
Behavioral Ecology and Sociobiology (3)	Herpetologica (7)	Molecular Ecology Resources (1)
Behavioral Processes (3)	Herpetological Conservation and Biology (3)	National Science Foundation (4)
Biological Conservation (2)	Herpetological Journal (2)	Northeastern Naturalist (2)
Canadian Journal of Zoology (3)	Herpetological Monographs (1)	PLOS One (1)
Chemoecology (1)	Herpetological Review (3)	Proceedings of the National Academy of Sciences (2)
Conservation Biology (1)	Journal of Animal Ecology (1)	Proceedings of the Royal Soc B (2)
Copeia (9)	Journal of Arid Environments (1)	Scientific Reports (1)
CSUPERB (1)	Journal of Chemical Ecology (1)	Psychological Record (1)
Current Zoology (2)	Journal of Comp. Psychology (3)	Southeastern Naturalist (1)
Diversity and Distributions (1)	Journal of Ethology (2)	South American Journal of Herpetology (1)
Ecology (1)	Journal of Experimental Biol (1)	Western North American Naturalist (1)
Environmental Toxicology & Pharmacology (1)	Journal of Experimental Zoo. A (2)	Zoology (3)
	Journal of Heredity (1)	
	Journal of Herpetology (5)	

Committee service:

- College of Sciences Retention, Tenure, and Promotion Committee, 2020-present
- Institutional Animal Care and Use Committee, San Diego State University, 2014 – present
- Department of Biology Policy, Procedures, and Planning Committee, 2016 – present
- Department of Biology Scholarship Committee (Chair, 2016-2019), 2007-present
- Department of Biology Cell Biology Search Committee, 2018-2019
- SDSU University Grants and Lectureships Committee, 2017-2018
- Department of Biology Quantitative Ecology Search Committee (Chair), 2017-2018
- College of Sciences Research Committee, 2017-2018
- Campus-wide Committee on Undergraduate Research, SDSU, 2008-2015

- Department of Biology Functional Genomics Search Committee, 2014-2015
- State of the Planet Course Development Committee, 2005-2006. Committee of Cornell University students and faculty led by Tom Eisner, with the goal of developing a comprehensive, interdisciplinary course on the future of our world.
- Vice President of Dept. Neurobiology and Behavior Graduate Student Body, 2001 - 2002.

BROADER IMPACTS

Media interactions

- Interview for [Snake Talk](#) Podcast, 2020
- Provided scientific information/video for KQED [Deep Look episode on kangaroo rats](#), 2020
- [Research highlight](#) by LiveScience, *12 Times Science Proved the World is Amazing*, 2019
- Scientific consultant for Ed Yong's book on animal sensory systems, October 2019
- BBC World Service Radio, [profile on our research on kangaroo rats and snakes](#), July 2019
- KQED, [Kangaroo rats are spring-loaded ninjas](#), July 2019
- Quest Magazine, Interview on rattlesnake biology, July 2019
- Washington Post, Science Now, National Geographic, USA Today, many others featuring articles on kangaroo rats escaping rattlesnakes; research videos viewed over 100 million times across multiple platforms, March 2019
- New York Times, Interview on Snake Fungal disease, James Gorman, June 2018
- New York Times, Science Take article featuring kangaroo rat research, Oct 12, 2017
- National Geographic, CNN, Global News Canada and others featured our research on kangaroo rats and snakes, 2017
- New Scientist featured our research on snake behavior, 2016
- Science News feature on ground squirrel and rattlesnake research, 2015
- KZYX Radio interview with Robert Spies and Tim Bray, The Ecology Hour—Science Edition, April 12, 2015
- Scientific consultant and guest interviewee for BBC *One Talk to the Animals* documentary, aided documentary crew filming study organisms in the field, June 2013.
- Science Now feature on rattlesnakes and kangaroo rats, 2012
- KPBS, Tim Magazine, LA Times, CNN, Wall Street Journal all feature research on ground squirrel and rattlesnake interactions, July 2012
- Huffington Post, MSNBC, Science News features on social behavior of rattlesnakes, February 2012
- Scientific consultant and guest interviewee for NHK Japan nature documentary on ground squirrel-rattlesnake interactions, aided documentary crew filming study organisms in the field, July 2011
- UC Natural Reserve System feature on research, 2011
- Research interview with John Taylor, www.reptilelivingroom.com, 2011
- Fox News, Interview, How to catch a deadly runaway cobra, Cristina Corbin, 2011
- New York Times, interview concerning cobra escape at Bronx Zoo, 2011
- PI Highlight, SDSU Research Foundation, 2011
- Cornell Chronicle feature on rattlesnake conservation research, John Carberry, 2010
- Conservation Maven feature, Snakes interrupted: roads causing genetic decline, Rob Goldstein, 2011

- Discovery News feature, Rattlesnake, avoiding roads, becoming inbred: Why did the snake cross the road? It didn't, and that's a problem, say conservationists, 2011
- Scientific consultant on National Geographic Television production of *Venom Hunter*, 2010
- San Diego Union Tribune interview, Quake myths rely on cloudy facts, Scott Lafee, 2010
- Scientific consultant for National Geographic series *Dangerous Encounters*, 2010
- Channel 6 News San Diego interview on snake biology, 2010
- Scientific consultant for National Geographic series *Moment of Impact*, 2009
- Fox 5 News San Diego interview, Can pets and humans sense upcoming quakes?, 2009
- Scientific consultant for children's book on rattlesnakes, 2008
- Scientific consultant for British Broadcasting Company for filming predation behavior of timber rattlesnakes for the film series *David Attenborough's Life in Cold Blood*, 2006.
- Science News interview, When a chipmunk teases a rattlesnake, 2005
- Earthwatch Radio interview, Snake sociology, Cassie Wyss, 2005
- Science News interview, The social lives of snakes, S. Milius, 2004
- National Geographic News feature, Rattlesnakes show strong family bonds, J. Owens, 2004
- Research on snake social behavior featured in Science Now, Discovery, BBC News, Der Spiegel, 2004
- Elmira Star-Gazette feature on rattlesnake behavior research, J. Pfeiffer, 2003
- The Land Steward features on rattlesnake research, the fraternal order of the snakebite, R. Scheiman, 2004

Public outreach lectures:

- Joshua Tree National Park, 2020
- San Diego Herpetology Society, 2019
- San Diego Zoo, 2016
- SDSU Field Stations Docent Program, 2014
- Chula Vista Middle School, 2010
- CyberBridge High School Teacher Science Education Program, 2010
- San Diego Herpetological Society 2009
- North American Field Herpetological Association 2008
- Field Ecology, University of Notre Dame 2007
- Herpetology, Cornell University 2007
- Corning Rotary Club, July 2006
- Downsville Middle School, October 2006
- Cornell Wildlife Society, November 2005
- Tanglewood Nature Center, Elmira NY, April 2004, April 2003.
- Cayuga Trails Club, Ithaca NY, January 2004.
- Fingerlakes Land Trust, Ithaca NY, July 2005, August 2004. Led interested citizens on a guided walk of Steege Hill Nature Preserve to view timber rattlesnakes in their natural habitat.
- Introduction to Field Biology Cornell University, 2002, 2003, 2004, 2005, 2006.
- Cornell Herpetological Society, September 2001.
- Cornell Ethology and Animal Behavior Club, September 2001.
- Cornell Exotics Club, Ithaca NY, August 2001.
- Ovid High School, Ovid NY, October 1999
- Cayuga Elementary School, Ithaca NY, September 1999