

MICHAEL L. LOGAN
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Curriculum Vitae

Professional Positions

Assistant Professor, 2019 – present

Department of Biology
University of Nevada, Reno

Earl S. Tupper Fellow, 2019

Smithsonian Tropical Research Institute, Panama
Host: W. Owen McMillan

Biodiversity Genomics Fellow, 2017 – 2019

Smithsonian Tropical Research Institute, Panama
Host: W. Owen McMillan

Postdoctoral Fellow, 2016 – 2017

Harvard University, Cambridge, MA
Host: Jonathan Losos

US National Science Foundation Postdoctoral Fellow, 2014 – 2016

Stellenbosch University, South Africa
Host: Susana Clusella-Trullas

Education

PhD, Biology, 2009-2014

Dartmouth College, Hanover, NH
Thesis: Ecological and evolutionary responses of tropical ectotherms to climate change
Advisor: Ryan Calsbeek

M.S., Biology, 2007-2009

University of Texas at Arlington, Arlington, TX
Thesis: Morphology and habitat use among insular populations of the lizard *Anolis lemurinus* from the Cayos Cochinos archipelago of Honduras
Advisor: Jonathan Campbell

B.A., Zoology, 2005-2007

University of Southern Illinois, Carbondale, IL

A.S., Biology, 2002-2004

College of Lake County, Grayslake, IL

Publications

18. Neel LK*, **Logan ML***, Nicholson DJ, Miller C, Chung AK, Maayan I, Degon Z, DuBois M, Curlis JD, Taylor Q, Keegan KM, McMillan WO, Losos JB, Cox CL. 2021. Habitat structure mediates vulnerability to climate change through its effects on thermoregulatory behavior. *Biotropica*: 2021: 1-13. *Authors contributed equally

17. Cox CL, **Logan ML**. 2021. Using integrative biology to infer adaptation from comparisons of two (or a few) species. *Physiological and Biochemical Zoology*: 94: 162-170.

16. **Logan ML**, Neel LK, Nicholson DJ, Stokes AJ, Miller CL, Chung AK, Curlis JD, Keegan KM, Rosso AA, Maayan I, Folfas E, Williams CE, Casement B, Koyner MAG, Perez DJP, Falvey CH, Alexander SM, Charles KL, Graham ZA, McMillan WO, Losos JB, Cox CL. 2021. Sex-specific microhabitat use is associated with sex-biased thermal physiology in *Anolis* lizards. *Journal of Experimental Biology*, 224: jeb235697.

15. Rosso AA, Nicholson DJ, **Logan ML**, Chung AK, Curlis JD, Degon ZM, Knell R, Garner TWJ, McMillan WO, Cox CL. 2020. Sex-biased parasitism and expression of a sexual signal. *Biological Journal of the Linnean Society*, (131) 785-800.

14. Cox CL, Tribble HO, Richardson S, Chung AK, Curlis JD, **Logan ML**. 2020. Thermal ecology and physiology of an elongate and semi-fossorial arthropod, the bark centipede. *Journal of Thermal Biology*, (94) 102755.

13. **Logan ML**, Cox CL. 2020. Genetic constraints, transcriptome plasticity, and the evolutionary response to climate change. *Frontiers in Genetics*, (11) 538226.

12. Cox CL, Alexander S, Casement B, Chung AK, Curlis JD, Degon Z, Dubois M, Falvey C, Graham ZA, Folfas E, Gallegos MAK, Neel LK, Nicholson DJ, Perez DJP, Ortiz-Ross X, Rosso AA, Taylor Q, Thurman TJ, Williams CE, McMillan WO, **Logan ML**. 2020. Ectoparasite extinction in simplified lizard assemblages during experimental island invasion. *Biology Letters*, (16) 20200474.

11. **Logan ML**, Minnaar IA, Keegan KM, Clusella-Trullas S. 2020. The evolutionary potential of an insect invader under climate change. *Evolution*, (74) 132-144.

10. **Logan ML**, van Berkel J, Clusella-Trullas S. 2019. The Bogert Effect and environmental heterogeneity. *Oecologia*, (4) 817-827.

9. **Logan ML**. 2019. Did pathogens facilitate the rise of endothermy? *Ideas in Ecology and Evolution*, (12) 1-8.

8. Fey SB, Vasseur DA, Alujevic K, Kroeker KJ, **Logan ML**, DeLong JP, O'Connor MI, Peacor S, Rudolf VHW, Selden RL, Sih A, Clusella-Trullas S. 2019. Opportunities for behavioral rescue under rapid environmental change. *Global Change Biology*, (25) 3110-3120.

7. **Logan ML**, Curlis JD, Gilbert AL, Miles DB, Chung AK, McGlothlin JW, Cox RM. 2018. Thermal physiology and thermoregulatory behaviour exhibit low heritability despite genetic divergence between lizard populations. *Proceedings of the Royal Society B*, (285) 20180697.

6. Cox CL*, **Logan ML***, Chung AK, Bryan O, Kaur D, Leung E, McCormack J, McGinnis J, Miller L, Robinson C, Salem J, Scheid J, Warzinski T. 2018. Do ring-necked snakes choose retreat sites based upon thermal preferences? *Journal of Thermal Biology*, (71) 232-236. *Authors contributed equally.
5. **Logan ML**, Duryea MC, Molnar O, Kessler B, Calsbeek R. 2016. Spatial variation in climate mediates gene flow across an island archipelago. *Evolution*, (70) 2395-2403.
4. **Logan ML**, Fernandez SG, Calsbeek R. 2015. Abiotic constraints on the activity of tropical lizards. *Functional Ecology*, (29) 694-700.
3. **Logan ML**, Cox RM, Calsbeek R. 2014. Natural selection on thermal performance in a novel thermal environment. *Proceedings of the National Academy of Sciences of the United States of America*, (39) 14165-14169.
2. **Logan ML**, Huynh R, Precious R, Calsbeek R. 2013. The impact of climate change measured at relevant spatial scales: new hope for tropical lizards. *Global Change Biology*, (19) 3093-3102.
1. **Logan ML**, Montgomery CE, Boback SM, Reed RN, Campbell JA. 2012. Divergence in morphology, but not habitat use, despite low genetic differentiation among insular populations of the lizard *Anolis lemurinus* in Honduras. *Journal of Tropical Ecology*, (28) 215-222.

Other Publications

Logan ML. 2018. Using transplant experiments to understand adaptation and speciation in anoles. 7th *Anolis Newsletter*.

Clusella-Trullas S, **Logan ML**, Minnaar IA. 2015. In a warming world, can an invasive ladybird take the heat? *QUEST Magazine*, 11:2.

Logan ML. 2011. Can tropical forest lizards survive climate change? *Biodiversity Science Magazine* (www.biodiversityscience.com).

Grants and Funding

Total extramural funding = \$1,253,776 / Total intramural funding = \$110,085

\$653,076 – National Science Foundation ‘Rules of Life’ grant (lead PI)

\$22,800 – Smithsonian Tropical Research Institute continuing support grant (lead PI)

\$73,685 – Smithsonian Institution Scholarly Studies Research Grant (co-lead PI)

\$202,200 – Smithsonian Tropical Research Institute Earl S. Tupper Fellowship

\$41,500 – STRI/ASU Collaborative Initiative Research Grant (co-lead PI)

\$112,000 – Smithsonian Institution Biodiversity Genomics Fellowship

\$65,000 – South African National Research Foundation Grant for Competitive Researchers (co-PI)

\$141,000 – US National Science Foundation Postdoctoral Fellowship

\$25,000 – South African National Research Foundation Postdoctoral Fellowship (declined)

\$3,600 – Dartmouth GAANN fellowship

\$10,000 – Dartmouth Gilman Fellowship

\$12,000 – Operation Wallacea Research Grant (lead PI)

\$1,000 – East Texas Herpetological Society Research Scholarship

\$1,000 – Phi Sigma Biological Honor Society Research Grant

Awards

Best Presentation: European Society for Evolutionary Biology (Switzerland, 2015)

Outstanding Graduate Student Teacher Award – Dartmouth College. Selected by Dartmouth Undergraduates.

Best Student Paper Award finalist, Society for Integrative and Comparative Biology meeting, San Francisco, 2013.

Invited Presentations

University of Texas – Arlington (April 2022)

World Congress of Herpetology (January 2020; declined due to scheduling conflict)

Reed College. Portland, OR (March 2020; canceled because of covid-19)

Truman State University. Kirksville, MO (February 2020)

Smithsonian Tropical Research Institute. Tupper Seminar Series. Panama City, Panama (May 2019)

New Mexico State University. Las Cruces, NM (February 2019)

University of Massachusetts, Dartmouth. Dartmouth, MA (February 2019)

University of Nevada, Reno. Reno, NV (February 2019)

Smithsonian Tropical Research Institute. Princeton University Tropical Ecology field course, guest lecturer. Gamboa, Panama (February 2019)

Smithsonian Tropical Research Institute. Dartmouth College Foreign Studies Program, guest lecturer. Gamboa, Panama (January 2019)

Smithsonian Tropical Research Institute. Cambridge University Tropical Ecology field course, guest lecturer. Gamboa, Panama (August 2018)

Smithsonian Tropical Research Institute. BAMBI lecture series. Barro Colorado Island, Panama (August 2017).

Symposium – Ecology and physiology of amphibians and reptiles: challenges caused by global climate change. World Congress of Herpetology, Hangzhou, China (August 2016).

University of Lund. Lund, Sweden (March 2016).

Centre for Macroecology, Evolution, and Climate. University of Copenhagen, Denmark (June 2015).

University of Wisconsin – Milwaukee. Milwaukee, WI (September 2014).

NSF sponsored symposium – The vulnerability of tropical ectotherms to climate change. San Juan, Puerto Rico (August 2013).

Conference Presentations

Meetings attended: 7th Anolis Symposium, European Evolution, Evolution, Midwestern Ecology and Evolution, NSF climate change effects on ectotherms symposium, Smithsonian Fellows Symposium, Society for Integrative and Comparative Biology, World Congress of Herpetology

Nicholson DJ, Knell RJ, McCrea R, Neel LK, Curlis JD, Williams CE, Chung AK, McMillan WO, Garner TWJ, Cox CL, **Logan ML**. 2022. Climate anomalies and competition reduce establishment success during biological invasion. *Evolution*: Cleveland, OH.

Curlis JD, Cox CL, **Logan ML**, McMillan WO, Davis Rabosky AR. 2022. What makes a morph? Morphological, physiological, behavioral, and genetic comparisons between anoles with divergent dewlap colors. Joint Meeting of Ichthyologists and Herpetologists: Spokane, WA.

Cox CL, **Logan ML**, Nicholson DJ, Chung AK, Rosso AA, McMillan WO, Cox RM. 2022. Species-specific expression of growth-regulatory genes in *Anolis* congeners with divergent patterns of sexual size dimorphism. Society for Integrative and Comparative Biology: Phoenix, AZ.

Nicholson DJ, Knell RJ, McCrea R, McMillan WO, Neel LK, Chung AK, Curlis JD, Garner TWJ, Cox CL, **Logan ML**. 2022. Rare climate events and competition constrain establishment success in *Anolis* lizards. Society for Integrative and Comparative Biology: Phoenix, AZ.

Alujevic K, Streicher JW, Garcia RA, Riesgo A, Taboada S, **Logan ML**, Clusella-Trullas S. 2022. Mismatches between phenotypes and territory thermal environments shape fitness in an African lizard. Society for Integrative and Comparative Biology: Phoenix, AZ.

Gopal AC, Alujevic K, **Logan ML**. Temperature and the Pace-of Life Syndrome. 2022. Society for Integrative and Comparative Biology: Phoenix, AZ.

Pirani RM, Curlis JD, Arias C, McMillan O, Cox CL, **Logan ML**. 2022. Uncovering the ecological and genetic basis of a sexual signal: the dewlap of the Panamanian slender anole (*Anolis apletophallus*). Society for Integrative and Comparative Biology: Phoenix, AZ.

Garcia Costoya G, Faske TM, Moorman JD, **Logan ML**. 2022. Damned if you do and damned if you don't: adaptation to warmer environments leads to extinction in variable ones. Society for Integrative and Comparative Biology: Phoenix, AZ.

Logan ML, Cox CL. 2021. Genetic constraints, gene expression plasticity, and the importance of extreme weather events in the evolutionary response to climate change. Society for Integrative and Comparative Biology: Washington DC (online due to COVID-19).

Cox CL, **Logan ML**. 2021. Using integrative biology to infer adaptation from comparisons of two (or a few) species. Society for Integrative and Comparative Biology: Washington DC (online due to COVID-19).

Rosso AA, **Logan ML**, McMillan WO, Cox CL. 2021. Both gene expression and physiology respond plastically to thermal stress in a tropical forest lizard. Society for Integrative and Comparative Biology: online due to COVID-19.

Casement B, Cox CL, McMillan WO, **Logan ML**. 2020. The effects of abiotic conditions on activity time in tropical forest lizards: a large-scale field-experiment in the Panama Canal. Society for Integrative and Comparative Biology: Austin, TX.

Chung AK, Cox RM, **Logan ML**, McMillan WO, Cox CL. 2020. Sex-biased gene expression and sexual dimorphism in anole lizards. Society for Integrative and Comparative Biology: Austin, TX.

Cox CL, Rosso AA, Nicholson DJ, McMillan WO, **Logan ML**. 2020. Sex-biased parasitism corresponds to expression of a sexual signal in a tropical forest lizard. Society for Integrative and Comparative Biology: Austin, TX.

Folfas E, Cox CL, McMillan WO, **Logan ML**. 2020. Changes in escape behavior in a terrestrial vertebrate after experimental transplantation to a novel environment. Society for Integrative and Comparative Biology: Austin, TX.

Nicholson DJ, **Logan ML**, Cox CL, McMillan WO, Garner T, Knell R. 2020. Population dynamics and morphological change after experimental colonization of a novel environment. Society for Integrative and Comparative Biology: Austin, TX.

Rosso AA, **Logan ML**, McMillan WO, Cox CL. 2020. Phenotypic plasticity and the response to increasing temperatures in a tropical lowland lizard. Society for Integrative and Comparative Biology: Austin, TX.

Williams C, Kueneman J, McMillan WO, Cox CL, **Logan ML**. 2020. The response of the gut microbiome to climate warming in a vertebrate ectotherm: a field-transplant experiment in the Panama Canal. Society for Integrative and Comparative Biology: Austin, TX.

Nicholson DJ, **Logan ML**, Cox CL, McMillan WO, Garner T, Knell R. 2019. Population dynamics and morphological change after experimental colonization of a novel environment. British Ecological Society: Belfast, Northern Ireland.

Alujevic K, **Logan ML**, Streicher J, Clusella-Trullas S. 2019. Integration of thermal sensitivity into the pace-of-life syndrome. Zoological Society of Southern Africa: Kruger National Park, South Africa.

Logan ML. 2019. Did pathogens facilitate the rise of endothermy? Society for Integrative and Comparative Biology: Tampa Bay, FL.

Neel L, **Logan ML**, Losos J, McMillan WO, Cox CL, Angilleta M. 2019. Environmental heterogeneity, thermoregulatory strategy, and the effects of climate change on ectotherms across latitude. Society for Integrative and Comparative Biology: Tampa Bay, FL.

Nicholson DJ, **Logan ML**, Cox CL, Chung AK, Degon ZD, DuBois MM, Neel L, Curlis JD, McMillan WO, Garner T, Knell RJ. 2019. Natural selection on morphology in a tropical lizard after a rapid shift in habitat structure. Society for Integrative and Comparative Biology: Tampa Bay, FL.

Degon ZD, Nicholson DJ, Chung AK, Taylor Q, Curlis JD, **Logan ML**, Neel L, DuBois MM, McMillan WO, Cox CL. 2019. Sex-specific relationships between energetics and ectoparasites in a tropical lizard. Society for Integrative and Comparative Biology: Tampa Bay, FL.

Rosso AA, Nicholson DJ, Chung AK, Curlis JD, Knell R, Garner T, **Logan ML**, McMillan WO, Cox CL. 2019. Ectoparasites and the expression of sexual signals in a tropical lizard. Society for Integrative and Comparative Biology: Tampa Bay, FL.

Logan ML. 2018. Using experimental islands to explore evolutionary dynamics under climate change. 7th Anolis Symposium: Miami, FL.

Logan ML. 2018. Using experimental islands to test eco-evolutionary hypotheses. Smithsonian Fellows Symposium: Panama City, Panama.

Logan ML, Curlis JD, Gilbert AL, Miles DB, Chung A, McGlothlin JW, Cox RM. 2018. Genetic constraints on adaptation to rapid environmental change. Society for Integrative and Comparative Biology: San Francisco, CA.

Fey SB, Vasseur DA, **Logan ML**, Alujevic K, O'Connor M, Clusella-Trullas S. 2018. Resolving constraints and opportunities for behavioral rescue in response to rapid environmental change. Society for Integrative and Comparative Biology: San Francisco, CA.

Nicholson DJ, Cox CL, **Logan ML**, Chung A, Curlis JD, McMillan WO, Garner TWJ, Knell RJ. 2017. The ecological and morphological drivers of ectoparasite load in a tropical ectotherm. Ecology Across Borders: Ghent, Belgium.

Alujevic K, **Logan ML**, Streicher JW, Clusella-Trullas S. 2017. The evolution of complex phenotypes in lizards: can multiple physiological functions be optimized at the same time? Entomological/Zoological Societies of Southern Africa: Pretoria, South Africa.

Fey SB, Vasseur DA, Alujevic K, **Logan ML**, Clusella-Trullas S. 2017. Microclimatic variation, behavioral thermoregulation, and thermal sensitivity jointly mediate the responses of ectotherms to rapid environmental change. Ecological Society of America: Portland, OR.

Georges J, **Logan ML**, Watson CM. 2017. Potential consequences of *Anolis cristatellus* invasion of Dominica on endemic *A. oculatus* populations in a dynamic thermal environment. Society for Integrative and Comparative Biology: New Orleans, LA.

Logan ML, Minnaar IA, Clusella-Trullas, S. 2017. The evolutionary potential of a global insect invader in the face of rapid environmental change. Society for Integrative and Comparative Biology: New Orleans, LA.

Logan ML, Curlis JD, Minnaar IA, McGlothlin JW, Clusella-Trullas S, Cox RM. 2016. Phenotypic correlations suggest that thermal adaptation is constrained in lizards and ladybugs. Society for Integrative and Comparative Biology: Portland, OR.

Logan ML, Duryea MC, Molnar O, Kessler B, Calsbeek R. 2015. Migration-selection balance and the response of metapopulations to climate change. European Society for Evolutionary Biology: Lausanne, Switzerland. **Best Presentation Award winner.**

Logan ML. 2014. Abiotic constraints on tropical lizard abundance. Society for Integrative and Comparative Biology: Austin, TX.

Logan ML, Cox RN, Calsbeek R. 2013. Natural selection on the thermal performance curve of *Anolis sagrei*. Society for the Study of Evolution: Snowbird, UT.

Logan ML. 2013. Fine-scale variation in thermal ecology suggests resilience to climate change among tropical lizards. Society for Integrative and Comparative Biology: San Francisco, CA **Selected as finalist for Best Student Paper Award.**

Logan ML. 2011. The thermal ecology of open-habitat and forest lizards and their potential response to climate change. Society for Integrative and Comparative Biology: Salt Lake City, UT.

Logan ML, Montgomery CE, Boback SM, Reed RN, Campbell JA. 2009. The comparative ecology of *Norops lemurinus* on the islands of Cayo Menor and Cayo Mayor of the Cayos Cochinos Archipelago of Honduras. Society for Integrative and Comparative Biology: Boston, MA.

Haughey M, Green S, **Logan ML**, Boback S, Montgomery C. 2008. A comparison of body size and condition of *Boa constrictor imperator* on the Cayos Cochinos Archipelago. Society for Integrative and Comparative Biology: Boston, MA.

Logan ML, Sears M, Angilletta M. 2007. Being a mom isn't always so hot: the effects of reproductive status on thermoregulatory behavior in squamate reptiles. Society for Integrative and Comparative Biology: San Antonio, TX.

Teaching

Designed and delivered upper-level undergraduate course—Comparative Animal Physiology (BIOL 316), University of Nevada, Reno. 2021 – present.

Designed and delivered graduate-level evolution course (EECB 752), University of Nevada, Reno. 2019 – present.

Field course: NEO-BESS Integrative Biology Course (Tropical Vertebrate Physiology Module). Lecturer and field research advisor to undergraduates from McGill University at the Smithsonian Tropical Research Institute in Gamboa, Panama. 2018 & 2019.

Field course: Tropical Ecological Research I & II. Teaching assistant and lecturer. Costa Rica (2013). Designed and delivered lectures for several modules on the ecology, evolution, and behavior of tropical amphibians and reptiles. Developed independent research projects with undergraduates.

Field course: Coral Reef Research. Teaching assistant and lecturer. Cayman Islands (2013). Designed and delivered lectures for several modules on the ecology, evolution, and behavior of coral reef fishes. Developed independent research projects with undergraduates.

Animal Behavior: Laboratory instructor (2013)

Ecology: Laboratory instructor (2012)

Physiological Ecology: Laboratory instructor (2012)

Genetic Variation and Evolution: Laboratory instructor (2009 – 2011)

Cell and Molecular Biology: Laboratory instructor (2008)

Introductory Biology: Laboratory instructor (2007)

External service

Guest Editor for Ecological Monographs (2020-2021)

NSF panelist – Rules of Life panel, Division of Environmental Biology, May 2022

Reviewer

National Science Foundation grant proposals, National Geographic Society Grant Proposals, Graduate Women in Science grant proposals (www.gwis.org), American Naturalist, Amphibia-Reptilia, Annals of the Brazilian Academy of Sciences, Biological Conservation, Biological Invasions, Biological Journal of the Linnean Society, Biological Reviews, Biology Open, Breviora, Canadian Journal of Zoology, Climate Research, Climatic Change, Comparative Biochemistry and Physiology - Part A: Molecular & Integrative Physiology, Current Zoology, Diversity and Distributions, Ecological Applications, Ecology, Ecology and Evolution, Ecology Letters, Ecosphere, Evolution, Evolution Letters, Frontiers in Ecology and Evolution, Frontiers in Zoology, Functional Ecology, Global Change Biology, Global Ecology and Biogeography, Heredity, Herpetologica, Herpetological Conservation and Biology, Herpetological Review, Journal of Animal Ecology, Journal of Biogeography, Journal of Comparative Physiology B, Journal of Ethology, Journal of Evolutionary Biology, Journal of Experimental Zoology Part A, Journal of Insect Physiology, Journal of Thermal Biology, Molecular Ecology, Nature Climate Change, Northeastern Naturalist, Oikos, PeerJ, Philosophical Transactions of the Royal Society B, Physiological and Biochemical Zoology, Proceedings of the National Academy of Sciences USA, Proceedings of the Royal Society B: Biological Sciences, Scientific Reports

Membership in Scientific Organizations

Society for Integrative and Comparative Biology

Society for the Study of Evolution