

COLIN MACKENZIE DONIHUE

Department of Organismic and Evolutionary Biology
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RESEARCH FOCUS

I study the drivers and consequences of functional trait variation in lizards. My research yields insight into human-driven variation in lizard behavioral, morphological, physiological, and performance traits. My field research in Southern Europe, the West Indies, East Africa, and North America makes use of large-scale natural experiments and direct manipulative studies. I also work with 3D analysis techniques on modern and zooarchaeological museum collections. I seek to understand how human land use is redirecting the evolutionary trajectory of lizard populations and broader dynamics of ecological communities.

EDUCATION

- 2011 – 2016** School of Forestry and Environmental Studies, Yale University, New Haven CT
Ph.D. Conservation Ecology and Evolutionary Biology
Dissertation title: “Drivers of functional trait variation in *Podarcis erhardii*, the Aegean Wall Lizard”
- 2015 – 2016** Dept. of Organismic and Evolutionary Biology, Harvard University, Cambridge MA
Visiting Scholar *Host*: Dr. Jonathan Losos
- 2009 – 2011** School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI
M.Sc. Natural Resources and Environmental studies
- 2004 – 2008** Carleton College, Northfield, MN
B.A. *Cum laude* Biology major with a focus in Ecology

ACADEMIC POSITIONS

- 2016** Postdoctoral Fellow, Harvard University, Dr. Jonathan Losos’ Lab

PUBLICATIONS

- Donihue, C.M.** 2016. Aegean wall lizards switch foraging modes, diet, and morphology in a human-built environment. *Ecology and Evolution* 6: 7433–7442.
- Donihue, C.M.** 2016. Microgeographic variation in locomotor traits among lizards in a human-built environment. *PeerJ* 4, e1776.
- Donihue, C.M.,** K.M. Brock, J. Foufopoulos, A. Herrel. 2015. Feed or fight: What drives bite force differences in the Aegean Wall Lizard, *Podarcis erhardii*, across the Greek Cyclades? *Functional Ecology* 30(4) 556-575.
- Schmitz, O.J., R.W. Buchkowski, K.T. Burghardt, & **C.M. Donihue**. 2015. Functional traits and trait-mediated interactions: Connecting community-level interactions with ecosystem functioning. *Advances in Ecological Research* 52: 319-343.
- Donihue, C.M.,** M.R. Lambert. 2014. Adaptive evolution in urban ecosystems. *AMBIO*. DOI: 10.1007/s13280-014-0547-2
- Sagonas, K., P. Pafilis, P. Lymberakis, **C.M. Donihue**, A. Herrel, & E.D. Valakos. 2014. Insularity

affects head morphology, bite force and diet in a Mediterranean lizard. *Biological Journal of the Linnean Society* 112(3) 469-484.

7. **Donihue, C.M.**, J. Foufopoulos, C. Riginos, L. Porensky, & R.M. Pringle. 2013. Glade cascades: Indirect legacy effects of pastoralism enhance the abundance and spatial structuring of arboreal fauna. *Ecology* 94(4) 827-837.

PEER-REVIEWED NATURAL HISTORY CONTRIBUTIONS

8. **Donihue, C.M.** *in press*. *Podarcis siculus*: A breeding population in Boston's Fenway Victory Gardens. Geographic Distribution Notes: *Herpetological Review*.
9. Mossman*, A., K. Culhane*, Z. Miller*, K. Brock, P. Pafilis, & **C.M. Donihue**. 2016. An extreme new record of *Natrix natrix* from a Mediterranean Islet in Greece. *Herpetozoa*.
10. Lambert, M.R., B.A. Goldfarb, G.J. Watkins-Colwell, & **C.M. Donihue**. 2016. *Podarcis siculus* (Italian Wall Lizard). Habitat, invasion of suburban Winchester County, New York. *Herpetological Review*.
11. Goldfarb, B.A., M.R. Lambert, **C.M. Donihue**, & G.J. Watkins-Colwell. 2016. *Podarcis siculus* in Winchester County NY. Geographical Distribution Notes: *Herpetological Review*.
12. **Donihue, C.M.**, M.R. Lambert, & G.J. Watkins-Colwell. 2015. *Podarcis sicula*: Natural history of the invader as it reaches Connecticut. *Herpetological Review* 46(2): 260-261.
13. **Donihue, C.M.**, M.R. Lambert, & G.J. Watkins-Colwell. 2014. *Podarcis sicula*: The first population found in New England. Geographical Distribution Notes: *Herpetological Review* 45(4) 661-662.
14. Brock K.M., **C.M. Donihue**, & P. Pafilis. 2014. Novel records of frugivory and ovophagy in *Podarcis* lizards from East Mediterranean Islands. *North-Western Journal of Zoology* 10(1) 223-225.

OTHER CONTRIBUTIONS

15. **Donihue, C.M.**, B. Kazez. Illustrating a free, open-source method for quantifying locomotor performance with sprinting Aegean wall lizards. *PeerJ PrePrint*: 2:e701v1
<http://dx.doi.org/10.7287/peerj.preprints.701v1>

* Undergraduate students under my supervision

INVITED TALKS, POSTERS, AND PRESENTATIONS

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| 2016 | Carleton College Biology Department , Northfield MN Invited Talk Title: <i>Lizard Ecology and Evolution in the Anthropocene</i> |
| 2015 | Ecological Society of America Annual Meeting , Baltimore MD Talk Title: <i>Human land use with cascading ecological effects: an examination of hunting mode switching in Podarcis erhardii and associated effects on insect populations</i> |
| 2014 | 21st Century Naturalists: The American Society of Naturalists , Asilomar CA Talk Title: <i>Human Impacts on Lizard Adaptability and Ecological Dynamics in the Greek Archipelago</i> Yale Forestry and Environmental Studies Doctoral Seminar , New Haven CT Talk Title: <i>Context Dependence in the Aegean Wall Lizard</i> |
| 2013 | Yale Forestry and Environmental Studies Doctoral Seminar , New Haven CT Talk Title: <i>Human impacts on lizard adaptation and ecological dynamics in the Greek archipelago</i> |

- 2012** **Student Conference on Conservation Science**, New York City, NY
Workshop leader for 40 conference attendees
Workshop Title: *Harnessing Social Media for Conservation Science*
- 2011** **Student Conference on Conservation Science**, New York City, NY.
Poster Title: *Interaction Cascades in Anthropogenic Glades: How Pastoral Practices Increase the Abundance of Native Species in an African Savanna*
- Ecological Society of America Annual Meeting**, Austin, TX
Talk Title: *Interaction Cascades in Anthropogenic Glades: Adding habitat heterogeneity in an otherwise homogenous landscape across multiple spatial scales and trophic levels.*
- 2010** **Discovery Day at the Mpala Research Centre**, Laikipia, Kenya
Talk Title: *Interaction Cascades in Anthropogenic Glades*
- International Conference on Pastoralism and Climate Change Adaptation in Africa**, Egerton University, Kenya
Talk Title: *Mpala Research Centre: A Case Study in Pastoralism as a Coupled Human-Natural System*

GRANTS, FELLOWSHIPS, AND HONORS

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| 2017 | NSF Postdoctoral Fellowship in Biology 36 months of funding for research at Harvard University and the Paris Natural History Museum. | \$250,440 |
| 2015 | Ecological Society of America Early Career Mentoring Fellow Selected among hundreds of applicants for individual mentorship during the 2015 ESA meeting in Baltimore, MD. | \$200 |
| | Yale Institute for Biospheric Studies Dissertation Improvement Grant <i>Putting trait variation in context: understanding the impact of lizard hunting mode switching in human contexts.</i> | \$3,000 |
| 2014 | Yale College Undergraduate Research Fellowships Summer research fellowships to support undergraduate research assistants K. Culhane, A. Mossman, and Z. Miller. | \$16,500 |
| | Yale Institute for Biospheric Studies Dissertation Improvement Grant <i>What drives context-dependent trait variability in Greek lizards?</i> | \$4,000 |
| | Crowdfunding with Experiment.com <i>Are Greek lizards adapting to live with humans?</i> | \$4,600 |
| 2013 | National Geographic Waitt Foundation Grant <i>Anthropogenic Impacts on Lizard Adaptability and Ecosystem Functioning in the Greek Archipelago.</i> | \$12,000 |
| 2011 | Yale Institute for Biospheric Studies Fellowship <i>Functional Convergence in Island Lizard Communities.</i> | \$5,000 |
| | Samuel Trask Dana Award “...to the graduate student in the school judged most outstanding on the basis of scholarship and service.” | |

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| 2010 | University of Michigan International Institute Experiential Learning Fund <i>Integrative Experiential Learning and Research in Mpala, Kenya.</i> With Dr. J. Foufopoulos, Dr. R. Hardin, W. DePuy and K. Yurco | \$6,000 |
| | Rackham Graduate Student Research Grant <i>Interaction Cascades in Anthropogenic Glades</i> | \$1,500 |
| | Natural Resources and Environment Master's Thesis Grant <i>Interaction Cascades in Anthropogenic Glades</i> | \$1,000 |
| 2009 | Joel Heinen Graduate Student Fund Recipient | \$1,000 |
| 2007 | Elected to Sigma Xi , the scientific research society | |
| 2004 | Named a Carleton Scholar “...in recognition of outstanding qualities of scholarship, character and promise.” | |

PROFESSIONAL SERVICE AND OUTREACH

REVIEWER

Biological Journal of the Linnean Society, Acta Ethologica, Integrative and Comparative Biology, Journal of Herpetology

SCIENCE CONSULTANT

Capstone Press, Chicago IL. Consulting reptile expert for *Flying Dragons* by Will Mara; *Bearded Dragons* by Will Mara; *Komodo Dragons* by Jill Sherman

POPULAR PRESS COVERING MY RESEARCH

New York Times, The Greenwich Time, The Boston Guardian, The Beaker, (e)Science, WorldPrimetime, Yale Peabody Museum, The Last Word on Nothing Blog, Anole Annals

SOCIAL MEDIA AND SCIENCE COMMUNICATION

Active personal science blog www.colindoniue.com (300+ posts; 20,000+ visitors to date). Twitter and instagram science communication (@colindoniue).

TEACHING EXPERIENCE

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| 2012 – 2014 | Yale University Teaching fellow for graduate-level course F&ES 550 “Natural Science Research Methods” (Fall 2012, 2013, 2014) and F&ES 740 “Dynamics of Ecological Systems” (Spring 2013) F&ES 550: Extensive contact time with first-year Masters students to help in thesis project development. |
| 2010 | University of Michigan Graduate Student Instructor for graduate-level course SNRE 509 “Ecology: Science of Context and Interaction.” Sole responsibility for three, two-hour lab sections; included lab lectures, office hours, grading, individual tutoring, and course content review sessions for class of 150 students |

2007 – 2008 Carleton College

Laboratory Teaching Assistant: One term supervising Population Ecology Lab, one term supervising Environmental Animal Physiology Lab, three terms supervising Introductory Biology labs.

PROFESSIONAL MEMBERSHIPS

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| Member American Society of Naturalists | December 2014 – Present |
| Member Ecological Society of America | July 2011 – Present |
| Associate Member, F1000 Biology | July 2010 – Present |

SKILLS AND INTERESTS

Languages: French – proficient; Greek and Spanish – basic

Computer Software: Advanced abilities with Microsoft Office, Endnote, Adobe Photoshop, Adobe InDesign, R, SPSS, and JMP statistical software packages