COLIN M. DONIHUE

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RESEARCH FOCUS

I am an evolutionary ecologist studying the drivers and consequences of variation in animal functional traits. In particular, my research focuses on predicting changes in behavioral, morphological, and performance traits as a result of changes in ecological context. My field research in Southern Europe, the West Indies, East Africa, and North America makes use of direct manipulative studies and landscape-scale natural experiments. My work generates fundamental insights into eco-evolutionary dynamics and critical applied lessons for conservation in human-dominated landscapes.

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 & Environment, University of Michigan, Ann Arbor, MI
M.Sc. Natural Resources and Environmental Studies

2004 – 2008 Carleton College, Northfield, MN
B.A. Biology major with a focus in Ecology

ACADEMIC POSITIONS

2020 Visiting Instructor, Colby College (January 2020)

2017 – 2020 NSF Postdoctoral Fellow, Harvard University (2017 – 2018), Washington University in St. Louis (2019 – 2020). Sponsoring scientist: Dr. Jonathan Losos

2018 Visiting Scholar, Functional Evolution Group: Muséum National d'Histoire Naturelle. Paris, France. Sponsoring scientist: Dr. Anthony Herrel

2016 Postdoctoral Researcher, Harvard University, Dr. Jonathan Losos' Lab

PUBLICATIONS IN REVIEW

Manuscripts available upon request:

- **C.M. Donihue**, A. Kowaleski, A. Algar, S. Baeckens, R.W. Buchkowski, A.-C. Fabre, H.K. Frank, A.J. Geneva, D.L. Mahler, R.G. Reynolds, J.A. Velasco, J.J. Kolbe, J.B. Losos, A. Herrel. Hurricane effects on neotropical lizards span geographic and phylogenetic scales. Accepted, pending revisions: *Proceedings of the National Academy of Sciences*

- M. Vasilopoulou-Kampitsi, J. Goyens, **C.M. Donihue**, P. Pafilis, A. Herrel, R. Van Damme, P. Aerts. Intersexual differences in manoeuvrability in the Aegean wall lizard (*Podarcis erhardii*). Accepted, pending revisions: *Journal of Zoology*

- Lambert, M.R., and **C.M. Donihue**. Using evolutionary tools for urban biodiversity management. In Revisions: *Nature Ecology & Evolution*.

- **C.M. Donihue**, J.C. Daltry, S. Challenger, A. Herrel. Population increase and changes in behavior and morphology in the Redonda ground lizard (Pholidoscelis atratus) following the successful removal of alien rats and goats. In Review: *Integrative Zoology*

PUBLICATIONS

*undergraduate & †graduate students under my supervision; §authors contributed equally

1. **C.M. Donihue,** A. Herrel, J. Martín, J. Foufopoulos, P. Pafilis, S. Baeckens. Chemical signal evolution is rapid and repeatable: lizards have more complex chemical fingerprints on experimental islets. In Press: *Journal of Animal Ecology*.

2. A. Rabe, N. Herrmann, K. Culbertson, **C.M. Donihue**, S. Prado-Irwin. Post-hurricane shifts in the morphology of island lizards. In press: *Biological Journal of the Linnaean Society*

3. Pafilis, P., A. Herrel, G. Kapsalas, M. Vasilopoulou-Kampitsi, A.-C. Fabre, J. Foufopoulos, **C.M. Donihue**. 2019. Habitat shapes thermoregulation of Mediterranean lizards introduced to replicate experimental islets. *Journal of Thermal Biology* 84, 368–374.

4. Dufour, C.M.S., **C.M. Donihue**, J.B. Losos, A. Herrel. 2019. Parallel increases in grip strength in two species of *Anolis* lizards after a major hurricane on Dominica. *Journal of Zoology*.

    - Cover Photo
    - *press:* The BBC, National Geographic – France, New Scientist, Big Think
    - *video:* MSN Videos

5. **Donihue, C.M.**, A. Herrel, A-C Fabre, A. Kamath, A.J. Geneva, T.W. Schoener, J.J. Kolbe, J.B. Losos. 2018. Hurricane-induced selection on the morphology of an island lizard. *Nature* 560, 88-91.

    - *press*: Nature, National Geographic, The New York Times, The Atlantic, Smithsonian Magazine, The Associated Press, PRI's The World, The BBC, Scientific American, Le Figaro, The Weather Channel, The Independent, The Telegraph, Le Monde, Popular Science, Axios
    - *video*: [150,000+ views] National Geographic, Nature Videos, The Associated Press, The Weather Channel, Zeste de Science (French CNRS)

6. Itescu, Y., R. Schwarz, **C.M. Donihue**, et al. 2018. Inconsistent patterns of body size evolution in co-occurring island reptiles. *Global Ecology and Biogeography* 2018:00: 1-13.

7. **Donihue, C.M.** 2016. Aegean wall lizards switch foraging modes, diet, and morphology in a human-built environment. *Ecology and Evolution* 6: 7433-7442.

    - Recommended by Faculty of 1000 (F1000)

8. **Donihue, C.M.** 2016. Microgeographic variation in locomotor traits among lizards in a human-built environment. *PeerJ* 4, e1776.

    - *video:* ScienceVio

9. **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.
    - *press:* BLink, Sage Magazine
    - *video:* [2,000+ views] Functional Ecology
10. 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.
11. **Donihue[§], C.M.** , M.R. Lambert[§]. 2014. Adaptive evolution in urban ecosystems. *AMBIO*. DOI: 10.1007/s13280-014-0547-2
    - Recommended by Faculty of 1000 (F1000)
    - *video*: [1,000,000+ views] MinuteEarth
12. 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 Linnaean Society* 112(3): 469-484.
13. 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.
14. **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.
    - *press:* ScienceDaily

PEER-REVIEWED NATURAL HISTORY CONTRIBUTIONS

15. **Donihue, C.M.**, G. Giller, A. Herrel. 2017. An unusual meal for the Redonda Ground Lizard. *Herpetological Review* 48(3): 655.
16. **Donihue, C.M.** 2017. *Podarcis siculus*: A breeding population in Boston's Fenway Victory Gardens. Geographic Distribution Notes: *Herpetological Review*.
    - *press:* Earth Island Journal
17. 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*.
18. 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*.
    - *press:* The Last Word on Nothing
19. 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*.

20. **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.

    - *press:* The New York Times, The Beaker, Greenwich Time

21. **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.

OTHER CONTRIBUTIONS

22. **Donihue. C.M.**, A. Herrel. 2019. "A report on *Anolis nubilus* from the now rat-free island of Redonda." *Anolis Newsletter VII,* pp. 63-66. Eds. Stroud, J.T., Geneva, A.J., Losos, J.B. Washington University, St. Louis MO. DOI: 10.7936/gjg3-h168.

    - *press:* Scientific American
    - *video:* Antigua Barbuda Today

23. Jens De Meyer, **C.M. Donihue**, D. Scantlebury, J. Ng, R. E. Glor, J.B. Losos, & A. J. Geneva. 2019. Protocol for setting up and rearing a successful lizard room. *Anolis Newsletter VII,* pp. 37-62. Eds. Stroud, J.T., Geneva, A.J., Losos, J.B. Washington University, St. Louis MO.

24. **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

INVITED TALKS, POSTERS, AND PRESENTATIONS

2020 **Biology Department Seminar: Colby College**, Waterville ME
Talk Title: *Hurricanes to humans: Drivers of trait changes in the Anthropocene*

2019 **MassPARC: Partners in Reptile and Amphibian Conservation,** Westborough, MA
Talk Title: *Italian Wall Lizards in Boston*

Biology Department Seminar: University of Florida, Gainesville, FL
Talk Title: *Hurricanes to humans: Drivers of trait changes in the Anthropocene*

St. Louis Ecology, Evolution, and Conservation Retreat, Lewis and Clark CC, IL
Talk Title: *Hurricane effects on anoles span geographic and phylogenetic scales*

Living Earth Collaborative Seminar Series, Washington University, St. Louis, MO
Talk Title: *Experimental evolution in the wild: Lessons for conservation in a rapidly changing world*

2018 **Department Seminar Series: FunMorph Lab**, University of Antwerp, Belgium
Talk Title: *Natural selection in the wild: Plasticity and Evolution in Island Lizards*

Joint Congress on Evolutionary Biology, Montpellier, France
Poster Title: *How does an adaptive radiation begin? Contingency and determinism in* Anolis sagrei *ecological speciation*

2nd Symposium on Mediterranean Lizards, Tel Aviv, Israel
Talk Title: *Megabites: Rapid increase in lizard bite force following replicated introduction to small Greek Islets*

7th Anole Symposium, Miami, FL

Talk Title: *Hurricane-induced Adaptive Shifts in the Morphology of an Island Lizard*
Poster Title: *Reporting on the Reptiles of Redonda*

Conservation Seminar Series, St. John's, Antigua and Barbuda
Talk Title: *Conservation in a Rapidly Evolving World*

2017 **NSF Postdoctoral Fellows Conference**, Cambridge, MA
Poster Title: *Rapid Evolution of Lizard Form and Function*

New England Herpetological Society, Weymouth, MA
Invited Talk Title: *Italian Wall Lizards in New England*

2016 **Carleton College Biology Department**, Northfield, MN
Invited Talk Title: *Lizard Ecology and Evolution in the Anthropocene*

2015 **Ecological Society of America Annual Meeting**, Baltimore, MD
Talk Title: *Human land use with cascading ecological effects: an examination of hunting mode switching in* Podarcis erhardii *and associated effects on insect populations*

2014 **21st Century Naturalists: The American Society of Naturalists**, Asilomar, CA
Talk Title: *Human Impacts on Lizard Adaptability and Ecological Dynamics in the Greek Archipelago*

Yale Forestry and Environmental Studies Doctoral Seminar, New Haven, CT
Talk Title: *Context Dependence in the Aegean Wall Lizard*

2013 **Yale Forestry and Environmental Studies Doctoral Seminar**, New Haven, CT
Talk Title: *Human impacts on lizard adaptation and ecological dynamics in the Greek archipelago*

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

2017 **NSF Postdoctoral Fellowship in Biology** $250,440
36 months of funding for research at Harvard University, Washington University in St. Louis, and the Paris Natural History Museum.

2015 **Ecological Society of America Early Career Mentoring Fellow** $200

Selected among hundreds of applicants for individual mentorship during the 2015 ESA meeting in Baltimore, MD.

Yale Institute for Biospheric Studies Dissertation Improvement Grant $3,000
Putting trait variation in context: understanding the impact of lizard hunting mode switching in human contexts.

2014 **Yale College Undergraduate Research Fellowships** $16,500
Summer research fellowships to support undergraduate research assistants K. Culhane, A. Mossman, and Z. Miller.

Yale Institute for Biospheric Studies Dissertation Improvement Grant $4,000
What drives context-dependent trait variability in Greek lizards?

Crowdfunding with Experiment.com $4,600
Are Greek lizards adapting to live with humans?

2013 **National Geographic Waitt Foundation Grant** $12,000
Anthropogenic Impacts on Lizard Adaptability and Ecosystem Functioning in the Greek Archipelago.

2011 **Yale Institute for Biospheric Studies Fellowship** $5,000
Functional Convergence in Island Lizard Communities.

Samuel Trask Dana Award
"…to the graduate student in the school judged most outstanding on the basis of scholarship and service."

2010 **University of Michigan Experiential Learning Fund** $6,000
Integrative Experiential Learning and Research in Mpala, Kenya.
With Dr. J. Foufopoulos, Dr. R. Hardin, W. DePuy and K. Yurco

Rackham Graduate Student Research Grant $1,500
Interaction Cascades in Anthropogenic Glades

Natural Resources and Environment Master's Thesis Grant $1,000
Interaction Cascades in Anthropogenic Glades

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

STUDENTS UNDER MY SUPERVISION

Washington University, St. Louis: Benjamin Krasnoff (2019)
Harvard University: Master's Student: Raphaël Scherrer (2016); Undergraduate Students: Annelie Herrmann (2017-2018); Vanessa Lam (2017-2018); Emmanuel d'Agostino (2017-2019)
Yale University: Kathryn Culhane (2014-2016); Angus Mossman (2014), Zachary Miller (2014)

REVIEWER

National Science Foundation, National Geographic Grants

Nature, Functional Ecology, Behavioral Ecology, Biological Invasions, Biology Reviews, Biology Letters, Ecology and Evolution, Journal of Urban Ecology, Biological Journal of the Linnean Society (2), Journal of Morphology (2), Journal of Anatomy, Acta Ethologica (2), Food Webs, Integrative and Comparative Biology, Journal of Herpetology, Journal of Natural History, Acta Herpetologica (3)

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

National Geographic, The Atlantic, Nature News, New York Times, Smithsonian Magazine, PRI's The World, The Associated Press, The BBC, The Independent, The Conversation, Popular Science, Axios, Atlas Obscura, Popular Mechanics, Mashable, Gizmodo, The Big Think, The Greenwich Time, Earth Island Journal, The Boston Guardian, New Scientist, The Beaker, (e)Science, Yale Peabody Museum, NPR Living on Earth, The Last Word on Nothing Blog, Why Evolution Is True Blog, Wait Wait Don't Tell Me!

SOCIAL MEDIA AND SCIENCE COMMUNICATION

Award-winning personal science blog www.colindonihue.com (320+ posts; 25,000+ visitors to date). Twitter and instagram science communication @colindonihue, [200,000+ annual impressions].

TEACHING EXPERIENCE

2020 **Colby College**
Visiting instructor for "Biodiversity Conservation in an Era of Global Change"
BI197: January intensive short course for 20 undergraduates.

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 Master's 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 DEVELOPMENT

Mentorship Training Program, Washington University in St. Louis July 2019

PROFESSIONAL MEMBERSHIPS

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, Adobe Creative Suite, R, SPSS, and JMP statistical software packages

RECOMENDERS

Jonathan Losos

Director, Living Earth Collaborative
William H. Danforth Distinguished University Professor
Department of Biology, Washington University
Email: losos@wustl.edu
Phone: +1 (314) 935-3460
Relationship: Postdoctoral fellowship mentor

Oswald Schmitz

Oastler Professor of Population and Community Ecology
School of Forestry and Environmental Studies, Yale University
Email: oswald.schmitz@yale.edu
Phone: +1 (203) 436-5276
Relationship: Ph.D. advisor

Anthony Herrel

Directeur de Recherche (DR2)
Muséum National d'Histoire Naturelle (UMR7179), Paris, France
Email: anthony.herrel@mnhn.fr
Phone: +33 14 07 98 120
Relationship: Postdoctoral fellowship mentor