

CURRICULUM VITAE

**MARTHA MONICA MUÑOZ**

926 West Campus Drive Virginia Tech Blacksburg, VA 24060  
email: mmunoz5@vt.edu; phone: (540) 232-8468; website: www.munozlab.biol.vt.edu

**EDUCATION:**

- 2014 Ph.D. Organismic and Evolutionary Biology, Harvard University  
2007 B.A. Biology, *summa cum laude*, Boston University (with Distinction)

**APPOINTMENTS:**

- 2017- **Assistant Professor**  
Department of Biological Sciences, Virginia Tech  
2015-2017 **Post-doctoral Researcher**  
Department of Biology, Duke University  
2014-2015 **Post-doctoral Researcher**  
Research School of Biology, The Australian National University  
2007-2008 **Fulbright Research Scholar**  
National Museum of Natural Sciences, Madrid

**FELLOWSHIPS:**

- 2017 Foerster-Bernstein Postdoctoral Fellowship, Duke University (declined)  
2014 National Science Foundation, Postdoctoral Research Fellowship (declined)  
2013 John Parker Merit Fellowship, Harvard University  
2012 Robert A. Chapman Memorial Fellowship, Harvard University  
2010 National Science Foundation, Graduate Research Fellowship  
2008 Herchel Smith Graduate Fellowship, Harvard University  
2007 William J. Fulbright Research Fellowship, Spain

**GRANTS AND AWARDS:**

- 2018 National Science Foundation, Rules of Life:FELS Conference grant, \$21,868  
Global Change Center Seed Grant, Virginia Tech, \$19,810  
2017 Young Investigator Award, American Society of Naturalists  
2014 Raymond B. Huey Best Student Talk Award, Division of Ecology and Evolution,  
Society for Integrative and Comparative Biology  
2012 National Science Foundation, Doctoral Dissertation Improvement Grant, \$14,999  
2012 Sigma Xi Grant-In-Aid  
2012 David Rockefeller Center for Latin American Studies Grant, Harvard University  
2010 George Putnam Expedition Grant, Harvard University  
2008 Ken B. Miyata Expedition Grant, Harvard University  
2006 Phi Beta Kappa Honor Society, Boston University (early induction)  
2006 College of Arts and Sciences Merit Award, Boston University  
2006 Harold C. Case Award, Boston University  
2003 National Hispanic Merit Scholar

**PUBLICATIONS:**

<sup>1</sup>Muñoz lab undergraduate student; <sup>2</sup>Muñoz lab graduate student; <sup>3</sup>Muñoz lab postdoctoral researcher

24. **Muñoz MM**, Price SA. The future is bright for evolutionary morphology and biomechanics in the era of big data. *Integrative and Comparative Biology* (In Review)

23. **Muñoz MM**. The evolutionary dynamics of complex mechanical systems. *Integrative and Comparative Biology* (In Review).

22. <sup>3</sup>Farallo VR, **Muñoz MM**, Uyeda JC, Miles DB. Spatial scale modulates patterns of niche evolution in plethodontid salamanders. *Proceedings of the National Academy of Sciences* (In Revision)

21. <sup>1</sup>Salazar JC, Castañeda MR, Londoño GA, Bodensteiner BL<sup>2</sup>, **Muñoz MM**. 2019. Physiological evolution during adaptive radiation: A test of the island effect in *Anolis* lizards. *Evolution* (In Press)

20. Kuo C-Y, **Muñoz MM**, Irschick DJ. 2019. Lizard foraging: A perspective integrating sensory ecology and life histories. Pp. 87-106 in **Behavior of Lizards: Evolutionary and Mechanistic Perspectives** (VL Bels & AP Russell, Eds.) Taylor and Francis Publishing; Abingdon, UK.

19. **Muñoz MM**, <sup>2</sup>Bodensteiner BL. 2019. Janzen's hypothesis meets the Bogert effect: Connecting climatic variation, thermoregulatory behavior, and rates of physiological evolution. 2019. *Integrative Organismal Biology* 1:oby002. \*Invited contribution for inaugural issue

18. Dominguez-Guerrero S, **Muñoz MM**, Pasten-Tellez D, Arenas-Moreno D, Rodriguez-Miranda L, Manriquez-Moran N, Mendez de la Cruz F. 2019. Behavior constrains physiological plasticity of a wild lizard population. *Journal of Thermal Biology* 79:135-143.

17. **Muñoz MM**, Hu Y, Anderson PSL, Patek SN. 2018. Strong mechanical relationships bias the tempo and mode of morphological evolution. *eLife* 7:e37621.

16. Boronow KE, Shields IH, **Muñoz MM**. 2018. Parallel behavioral divergence with microhabitat in *Anolis* (Squamata: Dactyloidae) lizards from the Dominican Republic. *Breviora* 561:1—17.

15. **Muñoz MM**, Losos JB. 2018. Thermoregulatory behavior simultaneously promotes and forestalls evolution in a tropical lizard. *American Naturalist* 191:E15—E26.

14. **Muñoz MM**, Anderson PSL, Patek SN. 2017. Mechanical sensitivity and the dynamics of evolutionary rate shifts in biomechanical systems. *Proceedings of the Royal Society, B* 284:20162325.

13. **Muñoz MM**, Langham GM, Brandley MC, Williams SE, Moritz C. 2016. Basking behavior predicts the evolution of heat tolerance in Australian rainforest lizards. *Evolution* 70:2537—

2549.

12. **Muñoz MM**, Moritz C. 2016. Adaptation to a changing world: Evolutionary resilience to climate change. Pp. 238-252 in **How Evolution Shapes Our Lives: Essays on Biology and Society**. (JB Losos & RE Lenski, Eds.) Princeton University Press, Princeton, NJ.

11. Phillips BL, **Muñoz MM**, Hatcher A, Macdonald S, Llewelyn J, Lucy V, Moritz C. 2016. Heat hardening in a tropical lizard: geographic variation explained by the predictability and variance in environmental temperatures. *Functional Ecology* 30: 1161—1168.

10. Conover AE, Cook EG, Boronow KE, **Muñoz MM**. 2015. Effects of ectoparasitism on behavioral thermoregulation in the tropical lizards, *Anolis cybotes* (Squamata: Dactyloidae) and *A. armouri* (Squamata: Dactyloidae). *Breviora* 545:1—13.

9. **Muñoz MM**, Crandell KE, Campbell-Staton S, Fenstermacher K, Kim H, Van Middlesworth P, Sasa M, Losos JB, Herrel A. 2015. Multiple paths to aquatic specialization in four species of Central American aquatic *Anolis* lizards. *Journal of Natural History* 49:1717—1730.

8. **Muñoz MM**. 2015. The London Baedeker for the Darwin enthusiast. *Evolution: Education and Outreach* 8:1.

7. **Muñoz MM**, Wegener JE, Algar AC. 2014. Untangling intra- and interspecific effects on body size clines reveals divergent processes structuring convergent patterns in *Anolis* lizards. *American Naturalist* 184:636—646.

6. **Muñoz MM**, Stimola MA, Algar AC, Conover A, Rodriguez A, Landestoy MA, Bakken GS, Losos JB. 2014. Evolutionary stasis and lability in thermal physiology in a group of tropical lizards. *Proceedings of the Royal Society, B* 281:20132433.

5. **Muñoz MM**, Crawford NG, McGreevy TJ, Messana NJ, Tarvin RD, Revell LJ, Zandvliet RM, Hopwood JM, Mock E, Schneider AL, Schneider CJ. 2013. Divergence in coloration and ecological speciation in the *Anolis marmoratus* species complex. *Molecular Ecology* 22:2668—2682.

4. **Muñoz MM**, Hewlett J. 2011. Ecological consequences of continual volcanic activity on the lizard, *Anolis lividus*, from Montserrat. *Herpetological Review* 42:160—165.

3. Yamaguchi A, **Muñoz MM**, Bose TO, Oberlander JG, Smith S. 2010. Sexually distinct development of vocal pathways in *Xenopus laevis*. *Developmental Neurobiology* 70:862—874.

2. Crandall ED, Jones EM, **Muñoz MM**, Akinronbi B, Erdmann MV, Barber PH. 2008. Comparative phylogeography of two seastars and their ectosymbionts within the Coral Triangle. *Molecular Ecology* 17:5276—5290.

1. Reitzel AM, Sullivan JC, Brown BK, Chin, DW, Cira EK, Edquist SK, Genco BM, Joseph OC,

Kaufman CA, Kovitvongsa K, **Muñoz MM**, Negri TL, Taffel JR, Zuehike RT, Finnerty JR. 2007. Ecological and developmental dynamics of a host-parasite system involving a sea anemone and two ctenophores. *Journal of Parasitology* 93:1392—1402.

**INVITED REVIEWS:**

**Muñoz MM** (2017) A convergent synthesis: Scientists ‘replay the tape of life’ to reveal the laws of evolution. **John Templeton Foundation** (70 pp.)

**INVITED COMMENTARIES:**

- “The wild experiment that showed evolution in real time” by E. Yong, *The Atlantic*, Jan. 2019.
- “A single spine from this cactus can lift a half-pound slab of pork” by K. Wu, *PBS NOVA*, Nov. 2018.
- “Hurricanes may have made these lizards better huggers” by K. Eschner, *Popular Science*, July 2018.
- “Lizards with Bigger Toes and Smaller Hind Legs Survive Hurricanes” by J. Learn, *Smithsonian Magazine*, July 2018.
- “Return of the ‘Ologies: Natural History Makes a Comeback on Campus” by D. Lyman, *Undark Magazine*, November 2017.

**INVITED SEMINARS:**

- 2019 Harvard University, OEB, Grad Student Invited Speaker (upcoming)
- University of Pittsburgh, Department of Biological Sciences (upcoming)
- Clemson University, Department of Biological Sciences (upcoming)
- Yale University, Department of Ecology and Evolutionary Biology
- University of Chicago, Department of Ecology and Evolution
- University of Wisconsin-Madison, Department of Integrative Biology
- College of Charleston, Darwin Week Speaker
- Christopher Newport University, Department of Organismal and Environmental Biology
- 2018 Purdue University, Department of Biological Sciences
- University of Florida, Department of Biology
- Case Western Reserve University, Department of Biology
- Mountain Lake Biological Station, University of Virginia
- University of Idaho, Department of Biological Sciences
- University of Chicago, Committee on Evolutionary Bio., Evolutionary Morphology Series
- 2017 Duke University, Department of Biology, Population Biology Series
- University of Virginia, Department of Biology
- Ohio University, Department of Biological Sciences
- University of North Carolina, Chapel Hill, Biology Department
- 2016 Duke University, Department of Biology, University Program in Ecology Series
- Virginia Tech, Department of Biological Sciences
- University of North Carolina, Asheville, Department of Biology
- East Carolina University, Department of Biology
- 2015 The Australian National University, Division of Ecology and Evolution
- 2014 James Cook University, Centre for Tropical Biodiversity and Climate Change
- University of Arizona, Department of Ecology & Evolutionary Biology, Lunch Seminar
- Union College, Department of Biology

- 2012 Indiana State University, Department of Biology  
Harvard Museum of Natural History, Topics in Evolution Public Lecture
- 2010 Buffalo State College, Women in Science and Math Lecture Series

**INVITED SYMPOSIA & PLENARIES:**

- 2020 Society for Integrative and Comparative Biology, Austin, TX
- 2019 International Congress of Vertebrate Morphology, Prague, Czech Republic  
International Biogeography Society Special Meeting: Humboldt 250, Quito, Ecuador  
Joint Meeting of Ichthyology and Herpetology, Snowbird, UT  
North American Paleontological Conference, Riverside, CA
- 2017 American Society of Naturalists Young Investigator Symposium, Portland, OR  
AICAR (Association for Amphibian and Reptile Research and Conservation) conference,  
San Miguel de Allende, México (Plenary Talk, Delivered in Spanish)  
Latin American Herpetology Meeting, Quito, Ecuador (Delivered in Spanish)
- 2013 Biological Impacts of Tropical Warming for Ectotherms, San Juan, PR

**CONFERENCE PRESENTATIONS:**

I. As Presenting Author

- 2019 Society for Integrative and Comparative Biology, Tampa, FL (2 talks)
- 2018 Society for Integrative and Comparative Biology, San Francisco, CA  
Regional Society for Integrative and Comparative Biology Meeting, Clemson, SC
- 2017 Society for Integrative and Comparative Biology Regional Meeting, Blacksburg, VA  
Society for Integrative and Comparative Biology, New Orleans, LA
- 2016 Regional Society for Integrative and Comparative Biology Meeting, Durham, NC  
Society for Integrative and Comparative Biology, Portland, OR
- 2015 Australian Society of Herpetology, Eildon, Australia
- 2014 ASN/SSB/SSE Evolution Meeting, Raleigh, NC  
Society for Integrative and Comparative Biology, Austin, TX
- 2013 ASN/SSB/SSE Evolution Meeting, Snowbird, UT  
Society for Integrative and Comparative Biology, San Francisco, CA
- 2012 Society for Integrative and Comparative Biology, Charleston, SC
- 2009 Society for Integrative and Comparative Biology, Boston, MA
- 2008 Latin American Herpetology Conference, Varadero, Cuba  
Fulbright Researcher Conference, Valencia, Spain
- 2006 ASN/SSB/SSE Evolution Meeting, Stony Brook, NY  
Boston University Undergraduate Research Symposium, Boston, MA
- 2005 Young Scientist Symposium, Woods Hole, MA
- 2004 Society for Neuroscience, New Orleans, LA (poster)

II. Student or Postdoc as Presenting Author

- 2019 Society for Integrative and Comparative Biology, Tampa, FL (2 talks)
- 2013 Society for Integrative and Comparative Biology, San Francisco (1 talk, 1 poster)
- 2012 Society for Integrative and Comparative Biology, Charleston, SC

**TEACHING EXPERIENCE:**

**Department of Biological Sciences, Virginia Tech, Assistant Professor**

- 2019 Evolutionary Biology (BIOL 2704) – Sophomore-level class with 127 students
- 2018 Life in the Anthropocene (BIOL 5984) – Upper-level/graduate seminar with 11 students
- 2018 Evolutionary Biology (BIOL 2704) – Sophomore-level class with 62 students

**Department of Organismic and Evolutionary Biology, Harvard University, Graduate TF**

\*Distinction in Teaching Award from the Derek Bok Center, Harvard University

- 2013 Adaptive Radiation (Seminar course)
- 2011 Evolutionary Biology\*  
Animal Behavior\*
- 2009 Evolutionary Biology\*

**PROFESSIONAL SERVICE:**

**I. CONFERENCES AND SYMPOSIA ORGANIZED:**

- 2019 Society for Integrative and Comparative Biology, Tampa, FL (Symposium)
- 2018 ASN/SSB/SSE Evolution Meeting; Montpellier, France (Symposium)
- 2017 Society for Integrative and Comparative Biology, Virginia Tech (Regional Meeting)

**II. PROFESSIONAL REVIEWING:**

**Selected Journals:** *American Naturalist, Biological Journal of the Linnaean Society, Biology Letters, BMC Evolutionary Biology, Breviora, Canadian Journal of Zoology, Diversity and Distributions, Ecography, Ecology Letters, Ethology Ecology & Evolution, Evolution, Evolutionary Biology, Functional Ecology, Global Ecology and Biogeography, Herpetologica, Herpetological Journal, Journal of Biogeography, Journal of Experimental Biology, Journal of Morphology, Journal of Thermal Biology, Molecular Ecology, Nature Communications, Nature Ecology and Evolution, Oecologia, Scientific Reports, Zoology*

**Grants and Independent Agencies:** John Templeton Foundation, National Geographic Society, National Science Foundation

**Funding Panels:** National Science Foundation

**III. UNIVERSITY SERVICE:**

**a. Departmental Committees, Virginia Tech**

- 2017- Diversity Committee, Department of Biological Sciences

**b. Students Advised, Virginia Tech**

- 2018- Henry Camarillo (PhD Advisor)
- 2017- Brooke Bodensteiner (PhD Advisor)

**c. Student Committees, Virginia Tech**

- 2019- Chloe Moore (PhD Committee)
- 2019- Alex Grimaudo (MA Committee)
- 2018- Sean Kelly (MA Committee)
- 2017- Jack Whitehead (PhD Committee Co-Chair)

**IV. SOCIETY SERVICE:**

**SOCIETY FOR INTEGRATIVE AND COMPARATIVE BIOLOGY**

2019-2021 Secretary, Division of Ecology and Evolution

2018-2020 Public Affairs Committee

2016- Huey Award Committee, Division of Ecology & Evolution

**V. SCIENTIFIC AFFILIATIONS:**

American Society of Naturalists

Society for the Study of Evolution

Society for Integrative and Comparative Biology

Physical Biology of Organisms