

Anna Pérez-Umphrey, Ph.D.

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EDUCATION

Ph.D., Louisiana State University, Jan 2016-Dec 2021

Degree program: Wildlife Biology; GPA: 4.21

Dissertation: Long-term effects of the 2010 Deepwater Horizon oil spill on two terrestrial vertebrate species and the immunogenetics of a hantavirus reservoir host.

Supervisor: Dr. Sabrina Taylor

B.Sc. (Honors Scholar; *magna cum laude*), Colorado State University, May 2013

Degree program: Wildlife Biology; GPA: 3.90

Thesis subject: Rapid evolution and developmental plasticity in the behavior of the Trinidadian guppy, *Poecilia reticulata*.

Supervisor: Dr. Lisa Angeloni

PROFESSIONAL EXPERIENCE

Postdoctoral Associate

Hawley/Langwig Laboratory, Virginia Tech University, Blacksburg, VA (Nov 2021-Present)

Project: Host-pathogen co-evolution and heterogeneity in disease susceptibility

Graduate Research Assistant

Taylor Laboratory, Louisiana State University, Baton Rouge, LA (Jan 2016-Dec 2021)

Project: Gulf of Mexico Research Initiative

Research Assistant

Texas A & M University and University of Tennessee, Knoxville, TN

Mbaracayú Forest Biosphere Reserve, Alto Paraná, Paraguay (Jan-March 2017)

Project: Mammalian diversity and hantaviruses of the Interior Atlantic Forest, Paraguay

Crew Leader

Virginia Tech University, Eglin Air Force Base, FL (Oct 2015-Jan 2016)

Project: Reticulated flatwoods salamander and Red-cockaded Woodpecker monitoring

Endangered Species Technician

Virginia Tech University, Eglin Air Force Base, FL (Oct 2014-Mar 2015)

Project: Reticulated flatwoods salamander and gopher tortoise monitoring

Surveyor

Kingfisher Ecological, Manzanita, OR (April-August 2015)

Project: Northern Spotted Owl surveying

Herpetofauna Technician

Missouri Department of Conservation, Ellington, MO (Feb-Oct 2014)

Project: Missouri Ozark Forest Ecosystem Monitoring Program

Contractor

USGS Fort Collins Science Center, Fort Collins, CO (May-Aug 2013)

Project: Boreal toad monitoring

REU Intern

Duke University Marine Conservation Molecular Facility, Beaufort, NC (June-Aug 2012)

Project: Hybridization in landlocked anadromous river herring

Laboratory Research Technician

Angeloni, Funk, & Hoke Laboratories, Colorado State University, Fort Collins, CO (Aug 2010-May 2012; Aug 2012-May 2013)

Project: Population genetics and behavioral ecology of the Trinidadian guppy

Wildlife Intern

Bosque School, Albuquerque, NM (May-Aug 2010)

Project: Bosque Ecosystem Monitoring Program

Laboratory Research Technician

Colorado State University Fisheries Ecology Laboratory, Colorado State University, Fort Collins, CO (Sep-Dec 2009)

Project: Otolith chemistry to trace the origins of June sucker

PUBLICATIONS

Undergraduate mentee*

- Published** Pérez-Umphrey, A., Jonsson, C. B., Bonisoli-Alquati, A., Snider, A. M., Stouffer, P. C., and S. S. Taylor. (2022) Sex and habitat drive hantavirus prevalence in the marsh rice rat (*Oryzomys palustris*) in coastal saltmarshes impacted by the 2010 Deepwater Horizon oil spill. *Ecosphere*, 13(2): e3929.
- Snider, A., Bonisoli-Alquati, A., Pérez-Umphrey, A., Stouffer, P., and S. S. Taylor. (2021). Comparing the utility of gizzard and fecal samples for dietary metabarcoding in Seaside Sparrows. *Ornithological Applications*, duab060.
- Hart, M. E., Pérez-Umphrey, A., Stouffer, P.C, Bergeon Burns, C. M., Bonisoli-Alquati, A., Taylor, S. S., and S. Woltmann. (2021). Nest survival of Seaside Sparrows (*Ammodramus maritima*) in the wake of the Deepwater Horizon oil spill. *PLoS ONE* 16(10): e0259022.
- Spruill-Harrell, B., Pérez-Umphrey, A., Valdivieso-Torres, L., Cao, X., Owen, R. D., and C. B. Jonsson. (2021). Impact of predator exclusion and habitat on seroprevalence of New World Orthohantavirus harbored by two sympatric rodents within the Interior Atlantic Forest. *Viruses*, 13:1963.
- Moyo, S., Bennadji, H., Laguaite, D., Bonisoli-Alquati, A., Olin, J.A., Stouffer, P., Taylor, S., Pérez-Umphrey, A., Snider, A., Lopez-Duarte, P., Roberts, B.,

Hooper-Bui, L., and M. J. Polito. (2021). Stable isotope analyses identify trophic niche partitioning between sympatric terrestrial vertebrates in coastal saltmarshes with differing oiling histories. *PeerJ*, 9:e11392.

Thomas, S.*, Leblanc, L.*, **Pérez-Umphrey, A.**, Williams, S. T., Nevarez, J., and S. S. Taylor. (2020). DNA yield and turtle handling time: buccal swabs versus blood samples from Red-eared Sliders and Eastern Musk Turtles. *Southeastern Naturalist*, (29)2: 355-362.

Pérez-Umphrey, A., Bergeon Burns, C. M., Stouffer, P. C, Woltmann, S. and S. S. Taylor. (2018). Polycyclic aromatic hydrocarbon exposure in Seaside Sparrows (*Ammodramus maritimus*) following the 2010 Deepwater Horizon oil spill. *Science of the Total Environment*, (630): 1086-1094.

Hasselman, D. J., Argo, E. E., McBride, M. C., Bentzen, P., Schultz, T. F., **Pérez-Umphrey, A.**, and E. P. Palkovacs. (2014). Human disturbance causes the formation of a hybrid swarm between two naturally sympatric fish species. *Molecular Ecology*, (23)5: 1137-1152.

In prep

Pérez-Umphrey, A., Elbers, J., Settlecowski, A., Jonsson, C. B., Snider, A., Bonisoli-Alquati A., Stouffer, P.C, and S. S. Taylor. Characterizing the immunome of a hantavirus host species, the marsh rice rat (*Oryzomys palustris*).

Pérez-Umphrey, A., Elbers, J., Jonsson, C. B., Snider A., Bonisoli-Alquati A., Stouffer, P. C, and S. S. Taylor. A multiomics approach to studying hantaviral persistence in a reservoir host species, the marsh rice rat (*Oryzomys palustris*).

LeBlanc L.*, Snider, A. M., **Pérez-Umphrey, A.**, and S. S. Taylor. Parasite prevalence in marsh rice rats (*Oryzomys palustris*) on sites affected by the 2010 Deepwater Horizon oil spill.

RESEARCH IN THE NEWS

Science Magazine article on Bayou virus prevalence in marsh rice rats research published in Ecosphere: "Pathogenic hantavirus persists in marsh rice rats near New Orleans" by Ecological Society of America, March 18, 2022.

<https://scienmag.com/march-research-news-from-the-ecological-society-of-america/>

CONFERENCE PRESENTATIONS

Seaside Sparrow nest success and marsh rice rat population dynamics and disease ecology, following the 2010 Deepwater Horizon oil spill. 2021 Saltmarsh Habitat & Avian Research Program (SHARP) Annual Meeting. Virtual. [Oral Presentation]

Population dynamics and disease prevalence in the marsh rice rat (*Oryzomys palustris*) following the 2010 Deepwater Horizon Oil Spill. 2019 International Conference on Hantaviruses. Leuven, Belgium. [Oral Presentation]

Population dynamics and disease prevalence in the marsh rice rat (*Oryzomys palustris*) following the 2010 Deepwater Horizon Oil Spill. 2019 Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. [Poster Presentation]

Seaside sparrow oil exposure following the 2010 Deepwater Horizon Oil Spill. 2018 International Ornithological Congress. Vancouver, Canada. [Poster Presentation]

Seaside Sparrow oil exposure following the 2010 Deepwater Horizon Oil Spill. 2018 Gulf of Mexico Oil Spill and Ecosystem Science Conference. New Orleans, LA. [Oral Presentation]

Immunogenetics of the marsh rice rat (*Oryzomys palustris*) in Louisiana salt marshes after the 2010 Deepwater Horizon oil spill. 2016 SE Association of Fish and Wildlife Agencies. Baton Rouge, LA. [Poster Presentation]

Rapid evolution and developmental plasticity in the behavior of the Trinidadian guppy. 2013 Animal Behavior Society. Boulder, CO. [Poster Presentation]

Rapid evolution and developmental plasticity in the behavior of the Trinidadian guppy. 2013 Front Range Student Ecology Symposium. Fort Collins, CO. [Oral Presentation]

Evidence that rearing environment affects time budgets in *Poecilia reticulata*. 2012 Front Range Student Ecology Symposium. Fort Collins, CO. [Oral Presentation]

The Bosque Ecosystem Monitoring Program. 2009 Border-Wide EE Conference. Juarez, Mexico. [Oral Presentation]

Live capture and the effects of the sedative Domitor and antagonist Antisedan on the North American porcupine. 2008 Joint Arizona and New Mexico Fisheries Society and Wildlife Chapter. Prescott, Arizona. [Poster Presentation]

TEACHING ACTIVITIES

GUEST LECTURES

Long-term effects of the Deepwater Horizon oil spill and the immunogenetics of a hantavirus host. One Health: People, Animals, and the Environment, ANSC 4005. Louisiana State University, Baton Rouge, LA. 07 Oct 2021.

Genetics from a Management Perspective. Forest Biology, RNR 3105. Louisiana State University, Baton Rouge, LA. 2 Oct 2018.

Careers in Wildlife Biology. Environmentors Program. Louisiana State University, Baton Rouge, LA. 26 Feb 2018.

TEACHING ASSISTANT

BIOL/RNR 4015 Conservation Biology Recitation. Fall 2018, n=13 students

BIOL/RNR 4015 Conservation Biology Recitation. Fall 2019, n=13 students

AWARDS & SCHOLARSHIPS

Graduate Student Association Travel Award, 2019 (\$450)

- Travel grant awarded by Louisiana State University's Graduate Student Association to attend and present research at the XI International Conference on Hantaviruses in Leuven, Belgium.

Glasgow Travel Grant, 2019 (\$600)

- Travel grant awarded by the School of Renewable Natural Resources to attend and present research at the XI International Conference on Hantaviruses in Leuven, Belgium.

Ben and Pauline Stanley Excellence Award, 2018 (\$500)

- Awarded to a doctoral student with an outstanding record of research, service, and teaching in the School of Renewable Natural Resources

GoMRI Scholar, 2017

- Awarded to outstanding graduate students whose research is funded by the Gulf of Mexico Research Initiative

Charles Turner Award, 2013 (\$1,500)

- Granted funding to attend and present at the 2012 Animal Behavior Society national meeting in Boulder, CO

magna cum laude, 2013

- Recognized as one of the top 3% of students graduating with a Fish, Wildlife, and Conservation Biology degree

University Honors Scholar, 2013

- Recognized for the successful completion of Colorado State University's Honors Program, including the successful defense of an honors thesis and graduating with a minimum 3.50 cumulative GPA

Natural Resources Dean's List, 2009-2013

- Recognized as a student in Colorado State University's Natural Resources Department with a 3.50 semester GPA

CSU Honors Program, 2009-2013 (\$1,000/semester)

- Accepted into (minimum 3.70 high school GPA) and continued to satisfy the requirements (minimum 3.00 college GPA) of Colorado State University's Honor's College

Western Undergraduate Exchange Scholarship, 2009-2013 (~\$49,060/4-year degree)

- Granted tuition remission over a four-year period as a resident of a Western state (New Mexico) that met the scholarship requirements (minimum 4.00 high school GPA & 24 ACT score; minimum 3.00 college GPA)

Thomas Shepherd Diversity Scholarship, 2012 (\$1,000)

- Granted to an outstanding minority Natural Resources student with an interest in perusing a career in the sciences

NSF Research Experience for Undergraduates, 2012 (\$5,000)

- Selected to conduct research at Duke University's Marine Conservation Molecular Facility

Peitersen Scholarship, 2011 (\$500)

- Selected by the Department of Biology to conduct research on Western chorus frogs in subalpine areas of Colorado

SERVICE & OUTREACH

UNDERGRADUATE MENTORSHIP

Layni LeBlanc's honors thesis (Mentor), Louisiana State University, Baton Rouge, LA, January 2020-Present

- Currently mentoring Layni LeBlanc, in the design and implementation of her honors thesis research studying parasite prevalence in marsh rice rats collected from oiled and unoiled sites in Louisiana
- Aided in writing a research proposal and securing the following funding sources:
 - Millard Perkins Endowment, 2020 (\$2,973)
 - AgCenter F&A Funds, 2020 (\$3,690)

AFRI Explore Program (Mentor), Louisiana State University, Baton Rouge, LA, June-August 2018

- Helped undergraduate students collect and analyze data for a study examining DNA collection techniques for different turtle species occurring on Louisiana State University's campus

UNIVERSITY SERVICE

LSU Women in Science Outreach Committee (Member), Louisiana State University, Baton Rouge, LA, 2017-2019

LSU Girl's Day at the Museum (Volunteer), Museum of Natural Science, Louisiana State University, Baton Rouge, LA, 30 June 2018

- Demonstrated DNA extraction from strawberries for elementary and middle school-aged summer campers

EnvironMentors Program (Mentor), College of the Coast and Environment, Louisiana State University, Baton Rouge, LA, October 2017-May 2018

- Mentored a high school student from Scotlandville Magnet High School once a week over the 2017-2018 school year in the design and completion of a research project: "The influence of human food sources on squirrel distribution and abundance on LSU's campus."

Baton Rouge Magnet High School Science Fair (Judge), Baton Rouge, LA, 30 April 2018

Colorado State University chapter of the Wildlife Society (Secretary), Fort Collins, CO, 2012-2013

PUBLIC OUTREACH

BREC Conservation BioBlitz (Volunteer Scientist), Greenwood Community Park, Baton Rouge, LA, 21 April 2018

- Led a “reptile and amphibian hike” with members of the public through a local community park

Bosque Ecosystem Monitoring Program (Educator), Albuquerque, New Mexico, June 2010

Summer of Service Scholarship Program (Educator), Belen, New Mexico, July 2010

PROFESSIONAL SERVICE

Reviewer for:

- Marine and Freshwater Research
- Journal of Biogeography
- Environmental Monitoring and Assessment