

Emma Steigerwald

PhD candidate

Department of Environmental Science, Policy, and Management

University of California, Berkeley

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EDUCATION AND TRAINING

- Ph.D. candidate **University of California, Berkeley**
National Science Foundation Graduate Research Fellowship Program
Academic advisors: Dr. Rosemary Gillespie and Dr. Rasmus Nielsen
Dpt of Environmental Science, Policy, and Management
Museum of Vertebrate Zoology affiliate
Dissertation (in progress): Population genetics of climate-driven range shift in the Marbled four-eyed frog, *Pleurodema marmoratum*
- B.S. *summa cum laude* **Vanderbilt University**
Molecular and Cellular Biology, 2012
Honors thesis advisor: Dr. Seth Bordenstein
Honors thesis: Genome assembly of new WO phage virotype from *Wolbachia* in *Cadra cautella*

GRANTS, AWARDS, AND HONORS

2021	ESPM Continuing Fellowship, Dpt of Environmental Science, Policy, and Management, UC Berkeley.....	\$28,560
2021	Alden W. Miller Fellowship, Museum of Vertebrate Zoology	\$23,464
2020	David and Marvalee Wake Fund, Museum of Vertebrate Zoology	\$1,200
2019	Fellowship of Graduate Student Travel, Society for Integrative and Comparative Biology.....	\$1,000
2019	Sophie Danforth Conservation Biology Fund, Roger Williams Park Zoo & R.I. Zoological Society.....	\$1,000
2019	Karl Koford Memorial Scholarship, Museum of Vertebrate Zoology.....	\$2,000
2019	Reed Scholarship, North California Association of Phi Beta Kappa.....	\$7,000
2018	George and Violet Homem Graduate Award, UC Berkeley.....	\$1,147
2018	Lewis & Clark Fund for Exploration & Field Research, American Philosophical Society.....	\$5,000
2018	Tinker Field Research Grant, Center for Latin American Studies, UC Berkeley	\$1,080
2018	Olvier B. Lyman Wildlife & Fisheries Program Award, UC Berkeley.....	\$1,000
2018	Grants in Aid of Research, Sigma Xi Berkeley Chapter.....	\$500
2018	GradNews Award, UC Berkeley Graduate Division.....	\$100
2017-20	National Science Foundation Graduate Research Fellowship Program.....	\$138,000
2017	Starter Grant, UC Berkeley Dpt of Environmental Science, Policy, and Management.....	\$3,000
2017	The Green Initiative Fund MiniGrant, Reusable Dishware for ESPM Department.....	\$2,000
2015	Principal Project Grant, Loroparque Fundación, for El Oro Parakeet project...	\$44,000
2014	Biodiversity & Conservation Fellow, Dpt Environment, Society, & Global Change, Universität Freiburg.....	

2014	Principal Project Grant, Loroparque Fundación, for El Oro Parakeet project...	\$40,000
2013-14	Keegan Fellow, Vanderbilt University: Wildlife Conservation in the World's Biodiversity Hotspots.....	\$15,000
2012	Harry S. Truman Scholar, state of Georgia.....	\$30,000
2010	Scholarship for Military Children & Airmen Memorial Foundation Scholarship.	\$3,000
2008-12	Lanier Scholar (full tuition) & College Honors Scholar, Vanderbilt University..	\$180,000
2008	Student Challenge Achievement Program scholar, Earthwatch Foundation: "Ecology & Paleoanthropology of the Intermountain West".....	
2008	International Baccalaureate (IB) Diploma.....	

PUBLICATIONS

Steigerwald E, Sorokin A, Condori FP, Guevara YJ, Crispin G, & Chaparro JC (2021) Elevational range extension of the marsupial frog, *Gastrotheca marsupiata* (Duméril & Bibron, 1841) (Anura, Hemiphraactidae), from southern Peru. Check List. 17(1): 145-150. doi: 10.15560/17.1.145

Sorokin A and **Steigerwald E** (2018) Evidence for parental care in *Feihyla kajau* (Anura: Rhacophoridae). Phyllomedusa 17(1):127-130. doi: <http://dx.doi.org/10.11606/issn.2316-9079.v17i1p127-130>

Sorokin A and **Steigerwald E** (2017) Interspecific combat between *Nymphargus aff. grandisonae* and *Espadarana prosoblepon*. Herpetology Notes. 10:283-284.

Sorokin A and **Steigerwald E** (2017) *Ameerega trivitta* (three striped poison frog): Ectoparasitism. Herpetological Review. 48(2):407-408.

Steigerwald E, Igual JM, Payo-Payo A, and Tavecchia G (2015) Population & individual response to decreased food availability in an opportunistic gull (*Larus michabellis*). IBIS 157(3):439-448. doi: <https://doi.org/10.1111/ibi.12252>

PRESENTATIONS

ORAL PRESENTATIONS

2021 **Evolution: Joint annual meeting of the America Society of Naturalists, the Society for the Study of Evolution, and the Society of Systematic Biologists.**

Batrachochytrium dendrobatidis at 5400masl: the genetics & dynamics of amphibian disease among melting glaciers

2021 **Bay Area Conservation Biology Symposium**

Batrachochytrium dendrobatidis at 5400masl: amphibian disease at the top of the world

2020 **C.I. Vertebrate, Universidad Nacional de San Antonio Abad del Cusco**

The evolutionary impact of ecological responses to climate change

2019 **University of California, Berkeley, Seminar on Biology of Amphibians and Reptiles**

Frogs, Frost, and Fungus: herpetofauna of the Peruvian high Andes

2019 **Universidad Andina, Peru**

Introduced trout and native amphibians of the Vilcanota

2018 **Universidad Nacional de San Antonio Abad del Cusco, Peru**

Glaciers retreat, frogs advance: colonization, connectivity, & contagion in Andean frogs

- 2018 **University of California, Berkeley, Conservation Community Meeting**
Implications of deglaciation for three frog species
- 2015 **Universität Freiburg Wildlife Ecology Seminar, Germany
& Cambridge Conservation Initiative, UK**
Conservation Management of the El Oro Parakeet.
- 2012 **Vanderbilt University, Undergrad honors thesis defense**
Genome assembly of new WO phage virotype from Wolbachia in *Cadra cautella*

RESEARCH EXPERIENCE

- 2016-present **University of California, Berkeley**
PhD Candidate
*Dissertation research (in progress): Population genetics of climate-driven range shift in the Marbled four-eyed frog, *Pleurodema marmoratum*.* Collected non-destructive tissue samples and accompanying morphological data from 1,104 individuals of three species (*Pleurodema marmoratum*, *Rhinella spinulosa*, *Telmatobius marmoratus*) across mountain passes and around the larger landscape of the Cordillera Vilcanota, Peru. Using de novo genome assembly and whole genome resequencing to understand the structure and adaptation of a frog expanding into recently deglaciated terrain. Using amplicon sequencing to understand the evolutionary history of the co-occurring pathogen *Batrachochytrium dendrobatidis*.
- 2014-2016 **Albert-Ludwigs Universität Freiburg & Fundación Jocotoco**
Field team leader
*El Oro Parakeet (*Pybrrura orcesi*) Project*
Installed and monitored parakeets nestboxes, sampled blood, banded birds, gathered body condition data, and observed movement for endangered, endemic parakeet. Made recommendations for ecological corridor to Jocotoco and the provincial government. Obtained permits and funded the project.
- 2013 **Universidad Nacional Autónoma de México & Parque Aluxes**
Field technician
*Reintroduction of the Scarlet Macaw (*Ara macao cyanoptera*) to Chiapas, Mexico*
Made ethological observation prior to soft release and radiotracked released macaws.
- 2011-12 **Mediterranean Institute for Advanced Studies (IMEDEA)**
Summer research experience
Research project: Effects of decreased anthropogenic food availability on an opportunistic gull: evidence for a size-mediated response in breeding females. Conducted nest monitoring, and measured banded shearwaters, gulls, and their eggs. Used a six-year data set to assess how the closure of an open-air landfill affected body condition and reproductive parameters in the Yellow-legged gull, *Larus michabellis*. Also assisted with pitfall trapping, measuring, and photoidentifying Lilford's Wall Lizard, *Podarcis lilfordi*.
- 2009- 2012 **Vanderbilt University**
Undergraduate researcher.
*Honors thesis: Genome assembly of new WO phage virotype from Wolbachia in *Cadra cantella*.* In the Bordenstein lab, isolated and DNA extracted phage particles, assembled contigs, and annotated genome. Discussed in terms of whether the Modular Theory of Evolution might hold true for phages restricted to life within obligate intracellular

bacteria. Previously, in the Funk lab, assisted in studies of isolation by ecology in monophagic insects: field collected leaf beetles, assisted with mating and feeding preference tests, DNA extraction, and AFLP-PCR.

- 2010 **State University of New York**
Summer field technician
*Research Project: Gastrointestinal parasites of Ecuadorian mantled howler monkeys (*Alouatta palliata aequatorialis*) based on fecal analysis.* Collected howler and human faecal samples, mapped howler territories, and served as a Spanish translator.
- 2008 **Earthwatch Foundation Student Challenge Achievement Program**
Summer field technician
Research Project: Paleoanthropology and Ecology of the Intermountain West
Assisted in the excavation of a Shoshone bison jump site and the coring of glacial alpine lakes.

TEACHING EXPERIENCE

- 2021 **University of California, Berkeley** Introduction to the Environmental Sciences
- 2020 **University of California, Berkeley** Natural History Museums and Biodiversity Science
- 2017 **University of California, Berkeley** Wildlife Ecology, Graduate Student Instructor & guest lecturer for ‘Conservation Genetics’ unit
- 2010 & 2011 **Vanderbilt University** Introduction to the Biological Sciences Laboratory, Teacher’s Assistant

COMMUNITY SERVICE & OUTREACH

- 2020-present **Manuscript reviewer**
Molecular Biology and Evolution
Amphibian & Reptile Conservation
Systematic Biology
- 2020-present **DEI Working Group on Translation chair, Museum of Vertebrate Zoology**
Establishing MVZ guidelines on when work should be translated into languages other than English and how those translations should be made available. Making translated classic papers of evolution available on the Understanding Evolution website.
- 2019-2020 **Conservation Working Group chair and contributor, AmphibiaWeb**
Writing Newsboxes and species accounts for AmphibiaWeb, a major online resource for amphibian biology, taxonomy, conservation, and diseases.
- 2019-2020 **President, Society for Conservation Biology, Berkeley Chapter**
2017-2019 **Treasurer,**
Leading and managing funding for SCB-Berkeley’s regularly scheduled seminars, workshops, and service days as well as helping to coordinate the Bay Area Conservation Biology Symposium
- 2019 **Our Neighbors, the Frog and Toad** **Cordillera Vilcanota, Peru**
Created and delivered an environmental education workshop focused on amphibians, climate change, and mining concessions for 460 students in six Quechua communities

2014-2016 **The El Oro Parakeet and You**

El Oro Province, Ecuador

Created and delivered an environmental education workshop focused on biodiversity and ecological corridors for 750 high school students in seven towns local to my fieldwork