

# Curriculum vitae

Jeffrey L. Weinell

American Museum of Natural History  
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[JeffWeinell.github.io](https://JeffWeinell.github.io)

## EDUCATION

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### University of Kansas

Lawrence, Kansas, USA

PhD in Ecology and Evolutionary Biology (2022)

Dissertation: Assembling the Philippine snake fauna

### Villanova University

Villanova, Pennsylvania, USA

MS in Biological Sciences (2016)

Thesis: Systematics and Phylogeography of the *Trachylepis varia* species complex.

### Louisiana State University

Baton Rouge, Louisiana, USA

BS Biology (2014)

## APPOINTMENTS

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### American Museum of Natural History

New York, New York, USA

*Postdoctoral Fellow* (2022–present)

- Used field, molecular, computational, and collections-based research methods to complete two federally funded research projects.
- Assembled and annotated 400 whole genomes representing 300 species of reptiles using novel next generation DNA and RNA sequence data.
- Used integrative computational methods to study the joint evolution of genomes, body morphology, and lineage diversification in squamate reptiles.
- Used cutting-edge bioinformatic methods and genomic, morphological, geographical, and ecological data sampled from wild populations to study adaptation and speciation processes in different environments in Brazil.
- Presented research at two international conferences.
- Published two papers in peer-reviewed science journals.
- Facilitated graduate student research through hands on field, molecular genomics, and bioinformatics training.

*Mentor, Science Research Mentoring Program* (2024–present)

- Met with three high school students twice per week (four hours/week) to mentor them on a research project that I developed for them to engage in the scientific method.
- Provided bioinformatics training in genomics methods relevant to the project.
- Facilitated students to create and present a research poster, talk, and paper.

### University of Kansas

Lawrence, Kansas, USA

*Graduate Teaching Assistant* (2016–2022)

- Designed and led instruction for Field Herpetology.
- Assisted taught Molecular & Cell Biology, Animal Behavior, and Herpetology.

## APPOINTMENTS (*continued*)

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### University of Kansas

Lawrence, Kansas, USA

#### *Graduate Research Assistant* (2017–2018, 2021)

- Trained two incoming graduate students in laboratory and computational methods.
- Digitized phylogenetic trees from literature for Open Tree of Life Project.
- Assembled the first taxonomically comprehensive geographic occurrence dataset for all species of snakes in the Philippines.

#### *Graduate Curatorial Assistant* (2020)

- Curated alcohol-preserved specimens and frozen tissues of amphibians and reptiles in University of Kansas Natural History Museum and Biodiversity Institute.
- Processed outgoing loans of specimens, tissue samples, and genomic DNA.
- Accessioned new material sampled during fieldwork into the Herpetology collections.
- Facilitated sharing of specimen extended data to approved scientists and the public.
- Curated biodiversity data using Specify collections management software.

### Villanova University

Villanova, Pennsylvania, USA

#### *Graduate Teaching Assistant* (2014–2016)

- Assisted taught undergraduate level courses Bioinformatics, Biotechnology, Evolution, General Biology Lab, and Microbiology Lab.

## AWARDS, GRANTS, AND FELLOWSHIPS (Total: \$270,564)

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2024	\$132,900	NSF Postdoctoral Fellowship
2022	\$116,000	NSF Postdoctoral Fellowship
2020	\$1,000	Panorama Grant. University of Kansas Biodiversity Institute
2019	\$2,000	EEB Summer Research Fellowship. University of Kansas
2019	\$1,000	Graduate Student Travel REI Grant. University of Kansas
2019	\$1,000	Panorama Grant. KU Biodiversity Institute
2019	\$1,000	Genotyping-by-sequencing (GBS) Conservation Grant. Jacqueline Dillard and Elshire Group
2018	\$1,000	EEB Summer Research Fellowship. University of Kansas
2018	\$500	BI Summer Research Fellowship. University of Kansas
2018	\$1,000	Graduate Student Travel REI Grant. University of Kansas
2018	\$500	Graduate Scholarly Presentation Travel Fund. University of Kansas
2018	\$1,500	Doctoral Student Research Fund. University of Kansas
2017	\$1,000	Panorama Grant. University of Kansas Biodiversity Institute
2017	\$1,750	EEB Summer Research Fellowship. University of Kansas
2017	\$1,750	BI Summer Research Fellowship. University of Kansas
2017	\$750	3 <sup>rd</sup> Southeast Asian Gateway Evolution Travel Grant
2016	\$2,177	Graduate Student Summer Research Fellowship. Villanova University
2015	\$3,000	Graduate Student Summer Research Fellowship. Villanova University
2015	\$737	Biology Summer Research Fellowship. Villanova University

## MANUSCRIPTS PUBLISHED (18 total; 11 first author; h-index 10)

18. **Weinell, Jeffrey L**, Frank T Burbrink, Sunandan Das, Rafe M Brown. **2024**. Novel phylogenomic inference and ‘Out of Asia’ biogeography of cobras, coral snakes, and their allies. *Royal Society Open Science* 11, 240064.
17. Ceriaco, Luis MP, Mariana P Marques, Diogo Parrinha, Arthur Tiutenko, **Jeffrey L Weinell**, Brett O Butler, Aaron M Bauer. **2024**. The *Trachylepis* (Squamata: Scincidae) of Angola: An integrative taxonomic review with the description of seven new species. *Bulletin of the American Museum of Natural History* 465, 1–153.
16. Das, Sunandan, Eli Greenbaum, Shai Meiri, Aaron M Bauer, Frank T Burbrink, Christopher J Raxworthy, **Jeffrey L Weinell**, Rafe M Brown, Jonathan Brecko, Olivier S G Pauwels, Nirhy Rabibisoa, Achille P Raselimanana, Juha Merilä. **2023**. Ultraconserved elements-based phylogenomic systematics of the snake superfamily Elapoidea, with the description of a new Afro-Asian family. *Molecular Phylogenetics and Evolution* 180, 107700.
15. Hantak, Maggie M, Robert P Guralnick, Alexander C Cameron, Aaron H Griffing, Sean M Harrington, **Jeffrey L Weinell**, Daniel J Paluh. **2022**. Color scales with climate in North American ratsnakes: a test of the thermal melanism hypothesis using community science images. *Biology Letters* 18(12), 20220403.
14. **Weinell, Jeffrey L**, Alan E Leviton, Rafe M Brown. **2021**. A new species of reed snake, genus *Calamaria* (Colubridae: Calamariinae), from Mindoro Island, Philippines. *Philippine Journal of Systematic Biology* 14(2), 1–14.
13. **Weinell, Jeffrey L**, Anthony J Barley, Cameron D Siler, Nikolai L Orlov, Natalia B Ananjeva, Jamie R Oaks, Frank T Burbrink, Rafe M Brown. **2021**. Phylogenetic relationships and biogeographic range evolution in cat-eyed snakes, *Boiga* (Serpentes: Colubridae). *Zoological Journal of the Linnean Society* 192, 169–184.
12. **Weinell, Jeffrey L**, Daniel J Paluh, Cameron D Siler, Rafe M Brown. **2020**. A new, miniaturized genus and species of snake (Cyclocoridae) from the Philippines. *Copeia* 108(4), 907–923.
11. Som, Hannah E, L Lee Grismer, Jesse L Grismer, Perry L Wood Jr, Evan SH Quah, Rafe M Brown, Arvin C Diesmos, **Jeffrey L Weinell**, Bryan L Stuart. **2020**. A new *Liopeltis* Fitzinger, 1843 (Squamata: Colubridae) from Pulau Tioman, Peninsular Malaysia. *Zootaxa* 4766(3), 472–484.
10. **Weinell, Jeffrey L**, Errol Hooper, Alan E Leviton, Rafe M Brown. **2019**. Illustrated Key to the Snakes of the Philippines. *Proceedings of the California Academy of Sciences, Series 4* 66(1), 1–49, 47 figs.
9. **Weinell, Jeffrey L**, William R Branch, Timothy J Colston, Todd R Jackman, Arianna Kuhn, Werner Conradie, Aaron M Bauer. **2019**. A species-level phylogeny of *Trachylepis* (Scincidae: Mabuyinae) provides insight into their reproductive mode evolution. *Molecular Phylogenetics and Evolution* 136, 183–195.
8. **Weinell, Jeffrey L**, Daniel J Paluh, Amber L Singh, and David C Blackburn. **2019**. *Myersophis alpestris* (Myers’ Mountain Snake). Reproduction. *Herpetological Review* 50(1) 164–165.

MANUSCRIPTS PUBLISHED (*continued*)

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7. Leviton, Alan E, Cameron D Siler, **Jeffrey L Weinell**, Rafe M Brown. **2018**. Synopsis of the snakes of the Philippines: A synthesis of data from biodiversity repositories, field studies, and the literature. *Proceedings of the California Academy of Sciences, Series 4* 64(14), 399–568.
  6. **Weinell, Jeffrey L** & Rafe M Brown. **2018**. Discovery of an old, archipelago-wide, endemic radiation of Philippine snakes. *Molecular Phylogenetics and Evolution* 119, 144–150.
  5. **Weinell, Jeffrey L** & Aaron M Bauer. **2018**. Systematics and phylogeography of the widely distributed African skink *Trachylepis varia* species complex. *Molecular Phylogenetics and Evolution* 120, 103–117.
  4. **Weinell, Jeffrey L** & Christopher C Austin. **2017**. Refugia and Speciation in North American Scarlet Snakes (*Cemophora*). *Journal of Herpetology* 51(1), 161–171.
  3. **Weinell, Jeffrey L**, Daniel M Portik, Aaron M Bauer. **2017**. Noteworthy records of amphibians and reptiles from Mozambique. *African Herp News* 65, 4–10.
  2. Metallinou, Margarita, **Jeffrey L Weinell**, Benjamin R Karin, Werner Conradie, Philipp Wagner, Andreas Schmitz, Todd R Jackman, Aaron M Bauer. **2016**. A single origin of extreme matrotrophy in African mabuyine skinks. *Biology Letters* 12(8), 20160430.
  1. Karin, Benjamin R, Margarita Metallinou, **Jeffrey L Weinell**, Todd R Jackman, Aaron M Bauer. **2016**. Resolving the higher-order phylogenetic relationships of the circumtropical *Mabuya* group (Squamata: Scincidae): An out-of-Asia diversification. *Molecular Phylogenetics and Evolution* 102, 220–232.

## CONFERENCE PRESENTATIONS

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| 2024 | 3 <sup>rd</sup> Joint Congress on Evolutionary Biology. Montreal, Canada. Genomics of adaptation and speciation in Naked-toed Geckos across Atlantic Rainforest and “Dry Diagonal” environments in Brazil.                  |
| 2023 | NSF Dimensions Adaptive Diversification Grant Meeting. São Pedro, Brazil. How do lizards adapt genetically to the Brazilian Dry Diagonal?   |
| 2023 | Camp '23: Celebrating 100 years of Charles L. Camp's <i>Classification of the Lizards</i> . New York City, New York. Novel phylogenomic inference and ‘Out of Asia’ biogeography of cobras, coral snakes, and their allies. |
| 2022 | 5 <sup>th</sup> Global Assessment of Reptile Distributions (GARD) Meeting. Tel-Aviv, Israel. Assembling the Philippine Snake Fauna.   |
| 2021 | Evolution Meetings. Virtual. Assessing the importance of paleo-island collision on the population-level evolution of snakes throughout Luzon Island, Philippines.   |
| 2019 | International Biogeography Society. Malaga, Spain. An empirical assessment of variation in relative dispersal ability among widely distributed Philippine snakes.   |
| 2018 | Joint Meeting of Ichthyologists and Herpetologists. Rochester, New York. Morphological specialization and molecular phylogenetic history of the Philippine-endemic snake subfamily Cyclocorinae.                            |

### CONFERENCE PRESENTATIONS (*continued*)

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- 2017 3<sup>rd</sup> Southeast Asian Gateway Evolution (SAGE) Conference. Bogor, Indonesia. Phylogenetic relationships and biogeographic range evolution in Cat Snakes *Boiga* (Serpentes: Colubridae).
- 2016 Joint Meeting of Ichthyologists and Herpetologists. New Orleans, Louisiana. A single origin of extreme matrotrophy in African mabuyine skinks.
- 2014 Joint Meeting Of Ichthyologists and Herpetologists. Chattanooga, Tennessee. *Cemophora* revisited: a molecular perspective on the phylogeography of scarlet snakes (*Cemophora coccinea*).
- 2013 E. A. Liner Louisiana Herpetology Conference. Chauvin, Louisiana. Morphological differentiation between two species of crocodile skinks (*Tribolonotus*) from mainland New Guinea.

### TEACHING EXPERIENCE

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- 2021–22 *Molecular & Cellular Biology*. Teaching Assistant. University of Kansas
- Facilitated student learning through engaging discussions
  - Graded student assessments
- 2018–21 *Field Herpetology*. Teaching Assistant (led instruction). University of Kansas
- Designed curriculum
  - Logistical planning
  - Led instruction
  - Managed budget
- 2020 *Animal Behavior*. Teaching Assistant. University of Kansas
- Graded student assessments
- 2018 *Herpetology*. Teaching Assistant. University of Kansas
- Led laboratory component of student instruction
  - Created lab-based learning modules
- 2016–18 *Human Anatomy Dissection*. Teaching Assistant. University of Kansas
- Led student instruction
  - Oversaw cadaver dissection
- 2016–18 *Human Anatomy Observation*. Teaching Assistant. University of Kansas
- Led student instruction
  - Supervised four undergraduate teaching assistants
- 2016 *Evolution*. Teaching Assistant. Villanova University
- Fielded student questions
  - Graded student assessments
- 2016 *Microbiology Lab*. Teaching Assistant. Villanova University
- Fielded student questions
  - Graded student assessments
- 2015 *Bioinformatics*. Teaching Assistant. Villanova University
- Contributed to curriculum development
  - Engaged student questions
  - Graded student assessments

TEACHING EXPERIENCE (*continued*)

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- 2015      *Biotechnology*. Teaching Assistant. Villanova University
- Contributed to curriculum development
  - Engaged student questions
- 2014–15    *General Biology Lab*. Teaching Assistant. Villanova University
- Led lab-based instruction
  - Graded student assessments

## TEACHING SERVICE

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- 2023      First Year Seminar in EEEB. Columbia University
- Led interactive lecture *Snakes and Biogeography*
  - Created student assessment
- 2022      Comparative Genomics II. Richard Gilder Graduate School
- Assisted classroom-based and computational instruction
- 2017      Field Herpetology. University of Kansas
- Assisted field-based instruction

## INVITED SEMINARS AND WORKSHOPS LED

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- 2024      *Species delimitation workshop*. American Museum of Natural History.
- 2023      *Genomic adaptations to arid environments in the Brazilian Dry Diagonal*.  
Bioinformatics Working Group. American Museum of Natural History.
- 2021      *Hidden in plain sight: Collections-based research and the discovery of a  
remarkable group of Philippine-endemic snakes*. University of the Philippines  
Los Baños Museum of Natural History Biodiversity Seminar.
- 2019      *Novel solutions for integration of differing data streams, technologies, and  
discipline-specific traditions for the collection and analysis of biodiversity  
data*. Biodiversity Informatics Training Workshop. Father Saturnino Urios  
University, Philippines.

## MENTORSHIP

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- 2024      Three high School students in the Science Research Mentorship Program.  
American Museum of Natural History.
- 2021–22    Quentin Smith. TRIO Ronald E. McNair Postbaccalaureate Scholar, University  
of Kansas
- 2017–20    Grant Johnson. Undergraduate researcher, University of Kansas.
- 2016–18    Tatiana Doroskin. Undergraduate researcher, University of Kansas.
- 2016–17    Michael Burger. Undergraduate researcher University of Kansas. I facilitated  
Mike's independent study investigating species boundaries and species  
delimitation of the semi-aquatic snake genus *Tropidonophis* from the  
Philippines.

## WORKING GROUPS

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- 2022–24    **Bioinformatics Working Group.** American Museum of Natural History.  
 2022–24    **Global Assessment of Reptile Distributions (GARD).** Update and improve accuracy of the GARD species distribution dataset using GIS and expert knowledge of North American and Southeast Asian reptiles.

## COLLECTIONS-BASED FIELDWORK

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- 2023    **Brazil.** Collected specimens and tissues for genomic and transcriptomic sampling for Brazilian Dry Diagonal adaptive evolution project (<https://www.brdd.ib.unicamp.br/>).
- 2021    **Kansas.** Led Field Herpetology course at the University of Kansas. Trained 9 undergraduate and 2 graduate students in methods to observe, collect, and preserve specimens and genetic tissues of amphibian and reptiles for biodiversity research.
- 2019    **Philippines.** Collaborated with Ateneo de Naga University to inventory amphibians and reptiles across elevational gradients of the Caramoan Peninsula (Luzon Island) and across Leyte and Samar islands.
- 2019    **Kansas.** Trained 9 undergraduate students enrolled in Field Herpetology course (University of Kansas) in methods to observe, collect, and preserve specimens and genetic tissues of amphibian and reptiles for biodiversity research.
- 2018    **Philippines.** Resurveyed taxonomic type localities for amphibian and reptile species originally described from eastern Mindanao Island. Collaborated with Father Saturnino Urios University to train undergraduate students in specimen and tissue collection and preservation methods for amphibians and reptiles.
- 2018    **Kansas.** Trained 16 students (15 undergraduate, 1 graduate) enrolled in Field Herpetology (University of Kansas) to observe, collect, and preserve specimens and genetic tissues of amphibian and reptiles for biodiversity research.
- 2017    **Solomon Islands.** Conducted biodiversity inventories of terrestrial vertebrates (herps, birds, and mammals) across three Western Province islands and collaborating with scientists at University of New Mexico, University of Melbourne, and Solomon Islands National University. Trained one undergraduate and one graduate student in collections-based field research methods.
- 2017    **Kansas.** Trained students enrolled in Field Herpetology (University of Kansas) to observe, collect, and preserve specimens and genetic tissues of amphibian and reptiles for biodiversity research collections.
- 2015    **Zambia.** Collected specimens and genetic tissues of amphibians and reptiles for biodiversity research collections through collaboration with Copperbelt University. For lizards, I obtained microhabitat, morphometric, thermal physiology data through observations and experiments to support collaborative science with PIs Barry Sinervo (UC Santa Cruz) and Don Miles (Ohio University).

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JOURNAL REFEREE

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African Journal of Herpetology | Amphibians & Reptiles | Checklist | Herpetology Notes  
 Journal of Herpetology | Journal of Natural History | Molecular Phylogenetics & Evolution  
 PeerJ | Phyllomedusa | Russian Journal of Herpetology | Systematic Biology | ZooKeys  
 Zoologica Scripta | Zoological Journal of the Linnean Society | Zootaxa

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PROFESSIONAL AFFILIATIONS

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American Society of Ichthyologists & Herpetologists | Ecological Society of America  
 International Biogeography Society | Society for the Study of Amphibians & Reptiles  
 Herpetologists' League | Society for the Study of Evolution | Society of Systematic Biologists

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SOFTWARE DEVELOPED

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misc.wrappers    R package that facilitates population genetic analyses, data format  
                          conversion, and data visualization.  
                          <https://github.com/JeffWeinell/misc.wrappers>

REEs                R package for identifying rapidly evolving regions of genomes and  
                          selection of optimal target loci for phylogenomic studies.  
                          <https://github.com/JeffWeinell/REEs>

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OUTREACH

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2018                *Stand Up for Science* — Discussed science with the public to raise funds for  
                          graduate student research in the KU Natural History Museum.

2018                *Winter Table* — Discussed science with the public at to foster continued  
                          support for the KU Natural History Museum.

2018                *Sexy Science* — Discussed science with the public at the KU Natural History  
                          Museum.

2018                *Science Night* — Discussed science with the public at this popular science  
                          outreach event hosted by Lawrence Beer Company and KU EEB GSO.

2016                *Macabre at the Museum* — Engaged with the public through spooky science  
                          stories at KU Natural History Museum.

2016                *Party in the Panorama* — Communicated science to donors at fundraiser and  
                          outreach event at KU Natural History Museum.

2014                President, South-Central Chapter. North American Field Herping Association.

2013                Education Specialist, South-Central Chapter. North American Field Herping  
                          Association.

2013                Bio-inventory hike leader. National Geographic BioBlitz. Jean Lafitte National  
                          Historic Park and Preserve, Louisiana.

2011–13            Survey of amphibians and reptiles. Frenchtown Road Conservation Area,  
                          Baton Rouge, Louisiana.



**POPULAR PRESS COVERAGE**

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- 2024 Live Science. Evolution of snakes takes surprise twist — cobras didn't come from where we thought they did. <https://tinyurl.com/zc7etdy9>
- 2024 Science News. Hundreds of snake species get a new origin story. <https://tinyurl.com/3em2s5mm>
- 2024 Miami Herald. 'Long'-tailed creature — with unique snout — found on Angola farm. It's a new species. <https://tinyurl.com/57xjytxx>
- 2020 CNN. Scientists discover a new species of snake hiding in plain sight. <https://tinyurl.com/34p44tk8>
- 2020 Science Daily. Remarkable new species of snake found hidden in a biodiversity collection. <https://tinyurl.com/4e2ma3xd>