

RESEARCH INTERESTS

My research goals are to (1) elucidate causal genetic mechanisms underlying novel traits, (2) understand how phenotypes diversify at macro- and micro-evolutionary scales, and (3) identify factors that promote and constrain biodiversity. To accomplish these goals, I link studies of natural history with functional genomics using both molecular and computational tools. My current research applies integrative methods to study origins of acquired chemical defenses and subsequent phenotypic diversification.

EDUCATION

2011 – 2017 **Ph.D., Biological Sciences**, Evolution, Ecology, and Behavior, Dept. of Integrative Biology, University of Texas at Austin (UT). *Dissertation title*: Phylogenetic origins and evolutionary consequences of alkaloid resistance in poison frogs. *Advisors*: Dr. David Cannatella & Dr. Harold Zakon

2006 – 2010 **B.A., Biology *summa cum laude*** with Distinction and a Specialization in Ecology and Conservation Biology, Boston University (BU). *Thesis title*: Post-metamorphic growth of red-eyed treefrogs (*Agalychnis callidryas*): Variation with size at metamorphosis, foraging, and activity. *Advisor*: Dr. Karen Warkentin

PROFESSIONAL APPOINTMENTS

2019 – **Assistant Professor**, Dept. of Integrative Biology, University of California Berkeley (UCB).
Assistant Curator, Museum of Vertebrate Zoology, UCB.

2018 – 2019 **Postdoctoral Scholar-Fellow**, Miller Institute for Basic Research in Science and the Dept. of Integrative Biology, UCB. Hosted by Dr. Rasmus Nielsen and Dr. Noah Whiteman

2017 – 2018 **Postdoctoral Fellow**, Dept. of Integrative Biology, University of Texas at Austin (UT), under Dr. David Cannatella.

PUBLICATIONS

PEER-REVIEWED JOURNAL ARTICLES (^contributed equally, †graduate student mentee, ‡undergraduate student mentee, §postdoctoral scholar mentee, *corresponding)

22. López-Hervas‡, KS, SR Ron, JC Santos, M Betancourth-Cundar, DC Cannatella*, and **RD Tarvin***. Accepted. Deep divergences among inconspicuously colored clades of *Epipedobates* poison frogs. *Molecular Phylogenetics and Evolution*. bioRxiv DOI: [10.1101/2023.06.29.547117](https://doi.org/10.1101/2023.06.29.547117)
21. Nachman, MW, EJ Beckman, RCK Bowie, C Cicero, CJ Conroy, R Dudley, TB Hayes, MS Koo, EA Lacey, CH Martin, JA McGuire, JL Patton, CL Spencer, RD Tarvin, MH Wake, IJ Wang, A Achmadi, ST Álvarez-Castañeda, MJ Andersen, JA Arroyave Gutiérrez, CC Austin, FK Barker, LN Barrow, GF Barrowclough, J Bates, AM Bauer, KC Bell, RC Bell, AW Bronson, RM Brown, FT Burbrink, KJ Burns, CD Cadena, DC Cannatella, TA Castoe, P Chakrabarty, JP Colella, JA Cook, JL Cracraft, DR Davis, AR Davis Rabosky, G D'Elía, JP Dumbacher, JL Dunnum, SV Edwards, JA Esselstyn, J Faivovich, J Fjeldså, OA Flores-Villela, K Ford, J Fuchs, MK Fujita, JM Good, E Greenbaum, S Hackett, A Hamidy, J Hanken, T Haryoko, MTR Hawkins, LR Heaney, DM Hillis, BD Hollingsworth, AD Hornsby, PA Hosner, M Irham, S Jansa, RA Jiménez, L Joseph, JJ Kirchman, TJ LaDuc, AD Leaché, EP Lessa, H López-Fernández, NA Mason, J McCormack, CD McMahan, RG Moyle, RA Ojeda, LE Olson, CK Onn, LR Parenti, G Parra-Olea, BD Patterson, GB Pauly, SE Pavan, AT

- Peterson, S Poe, DL Rabosky, CJ Raxworthy, S Reddy, A Rico-Guevara, A Riyanto, LA Rocha, SR Ron, SM Rovito, KC Rowe, J Rowley, S Ruane, D Salazar-Valenzuela, AJ Shultz, B Sidlauskas, DS Sikes, NB Simmons, MLJ Stiassny, JW Streicher, BL Stuart, AP Summers, JJ Tavera Vargas, P Teta, CW Thompson, RM Timm, O Torres-Carvajal, G Voelker, RS Voss, K Winker, C Witt, EA Wommack, RM Zink. 2023. Specimen collection is essential for modern science. *PLoS Biology* 21: e3002318.
<https://doi.org/10.1371/journal.pbio.3002318>
20. Wan[†], YC, MJ Navarrete[†], LA O'Connell, LH Uricchio, A Roland, ME Maan, SR Ron, M Betancourth-Cundar, MR Pie, K Howell, CL Richards-Zawacki, ME Cummings, DC Cannatella, JC Santos, and **RD Tarvin**. 2023. Selection on visual opsin genes in diurnal Neotropical frogs and loss of the SWS2 opsin in poison frogs. *Molecular Biology and Evolution* 40: msad206. <https://doi.org/10.1093/molbev/msad206>
 19. **Tarvin***, RD, KC Pearson[†], TE Douglas[†], V Ramírez-Castañeda[†], MJ Navarrete[†]. *In press*. The diverse mechanisms animals use to resist toxins. <https://doi.org/10.1146/annurev-ecolsys-102320-102117>
Annual Review of Ecology, Evolution, and Systematics.
 18. Montana[‡], KO, V Ramírez-Castañeda[†], and **RD Tarvin***. 2023. Are Pacific Chorus Frogs (*Pseudacris regilla*) resistant to tetrodotoxin (TTX)? Characterizing potential TTX exposure and resistance in an ecological associate of Pacific Newts (*Taricha*). *Journal of Herpetology* 57: 220–228.
<https://doi.org/10.1670/22-002>
 17. Chambers[^], EA, **RD Tarvin^**, JC Santos, SR Ron, M Betancourth-Cundar, DM Hillis, MV Matz, and DC Cannatella. 2023. 2b or not 2b? 2bRAD is an effective alternative to ddRAD for phylogenomics. *Ecology and Evolution* 13: e9842. <https://doi.org/10.1002/ece3.9842>
 16. Ramírez-Castañeda^{†*}, V, EP Westeen, J Frederick, S Amini, D Wait, AS Achmadi, N Andayanie, E Arida, U Arifin, MA Bernal, E Bonaccorso, MB Sanguila, RM Brown, J Che, FP Condori, D Hartiningtias, AE Hiller, DT Iskandar, RA Jiménez, R Khelifa, R Márquez, JG Martínez-Fonseca, JL Parra, JV Peñalba, L Pinto-García, OH Razafindratsima, SR Ron, S Souza, J Supriatna, RCK Bowie, C Cicero, JA McGuire, **RD Tarvin***. 2022. A set of principles and practical suggestions for equitable fieldwork in biology. *Proceedings of the National Academy of Sciences of the United States of America* 119: e2122667119.
<https://doi.org/10.1073/pnas.2122667119> - [Public talk](#) - [Press Release](#)
 15. Womack*, MC, E Steigerwald, DC Blackburn, DC Cannatella, A Catenazzi, J Che, MS Koo, JA McGuire, SR Ron, C Spencer, VT Vredenburg, **RD Tarvin***. 2022. State of the Amphibia 2020: A review of five years of amphibian research and existing resources. *Ichthyology and Herpetology* 110: 638–661.
<https://doi.org/10.1643/h2022005>
 14. Steigerwald*, E, V Ramírez-Castañeda[†], DYC Brandt, A Báldi, JT Shapiro, L Bowker*, **RD Tarvin***. 2022. Overcoming language barriers in academia: machine translation tools and a vision for a multilingual future. *BioScience* 72(10): 988–998. <https://doi.org/10.1093/biosci/biac062> - [UC Berkeley Press Release](#) (in [Spanish](#), [Portuguese](#), [Hungarian](#)) - [Optica](#)
 13. Douglas^{†*}, TE, SG Beskid[‡], CE Gernand[‡], BE Nirtaut[‡], K Tamsil[‡], R Fitch, **RD Tarvin***. Trade-offs between cost of ingestion and rate of intake drive defensive toxin use. 2022. *Biology Letters* 18(2): 20210579. DOI: 10.1098/rsbl.2021.0579
 12. Pearson^{††*}, K, and **RD Tarvin***. A review of chemical defense in harlequin toads (Bufonidae: *Atelopus*). 2022. *Toxicon: X*, 13: 100092. DOI: 10.1016/j.toxcx.2022.100092 [UC Berkeley Press Release](#) - [La Repubblica](#)
 11. Akram, A, M Rais, K López-Hervas[‡], **RD Tarvin**, M Saeed, DI Bolnick, and DC Cannatella. An insight into molecular taxonomy of bufonids, microhylids, and dicroglossid frogs: First genetic records from Pakistan. 2021. *Ecology and Evolution* 11, 14175–14216. DOI: 10.1002/ece3.8134
 10. Uetz P, MS Koo, R Aguilar, E Brings, A Catenazzi, AT Chang, R Chaitanya, P Freed, J Gross, M Hammermann, J Hosek, M Lambert, Z Sergi, CL Spencer, K Summers, **RD Tarvin**, VT Vredenburg, DB

Wake. 2021. A Quarter Century of Reptile and Amphibian Databases. *Herpetological Review* 52(2):246-255.

9. **Tarvin, RD.** 2020. A sucker for taste. *Cell* 183: 587–588. DOI: 10.1016/j.cell.2020.10.012 (invited preview article)
8. Santos, JC, **RD Tarvin**, LA O'Connell, D Blackburn, and LA Coloma. 2018. Diversity within diversity: Transcriptomic characterization of eukaryotic symbionts in poison frogs. *Molecular Phylogenetics and Evolution* 125: 40–50.
7. **Tarvin^{^*}, RD**, CM Borghese[^], W Sachs, JC Santos, L Yu, LA O'Connell, DC Cannatella, RA Harris, and HH Zakon. 2017b. Interacting amino acid replacements allow poison frogs to evolve epibatidine resistance. *Science* 357: 1261–1266. Press/Interviews: [UT Press Release](#) - [NSF](#) - [The Scientist](#) - [Science News](#) - [National Geographic](#) - [Science Update](#) - [Le Monde](#) - [IB Times](#) - [Science X](#) - [The Wire](#) - [NRC](#) - [Xinhua Net](#) - [GEN](#) - [ABC España](#) - [GenScript](#) - [Science For the People](#) - [BYUradio](#) - [The Daily Texan](#)
6. **Tarvin^{^*}, RD**, E Powell^{^‡}, JC Santos, SR Ron, and DC Cannatella. 2017a. The birth of aposematism: High phenotypic divergence and low genetic diversity in a young clade of poison frogs. *Molecular Phylogenetics and Evolution* 109: 283–295.
5. **Tarvin^{*}, RD**, JC Santos, LA O'Connell, HH Zakon, and DC Cannatella. 2016. Convergent substitutions in sodium channel suggest multiple origins of toxin resistance in poison frogs. *Molecular Biology and Evolution* 33: 1068–1081.
4. **Tarvin^{*}, RD**, CS Bermúdez, VS Briggs, and KM Warkentin. 2015. Carry-over effects of size at metamorphosis in red-eyed treefrogs: higher survival but slower growth of larger metamorphs. *Biotropica* 47: 218–226.
3. **Tarvin^{*}, RD**, P Peña, and SR Ron. 2014. Changes in population size and survival in *Atelopus spumarius* (Anura: Bufonidae) are not correlated with chytrid prevalence. *Journal of Herpetology* 48: 291–297.
2. Muñoz, M, NG Crawford, TJ McGreevy, NJ Messana, **RD Tarvin**, LJ Revell, RM Zandvliet, JM Hopwood, E Mock, AL Schneider, and CJ Schneider. 2013. Divergence in coloration and ecological speciation in the *Anolis marmoratus* species complex. *Molecular Ecology* 22: 2668–2682.

BOOK CHAPTER

1. Santos[^], JC, **RD Tarvin[^]**, and LA O'Connell[^]. 2016. A review of chemical defense in poison frogs (Dendrobatidae): Ecology, pharmacokinetics and autoresistance. In: Schulte, BA, TE Goodwin, MH Ferkin, Eds. *Chemical Signals in Vertebrates* 13. Switzerland: Springer International Publishing. p. 305-337.

NON-PEER-REVIEWED PUBLICATIONS

4. Fanaian, S, D Peralta, JT Shapiro, K Owens, **RD Tarvin**, P Iturralde-Pólit, Removing language barriers for better science. *Global Development Blog*, April 2022. <http://globaldev.blog/blog/removing-language-barriers-better-science>
3. Bernal, XE, B Rojas, MA Pinto, ÁM Mendoza-Henao, A Herrera-Montes, MI Herrera-Montes, A del Pilar Cáceres Franco, 254 signatories (including **RD Tarvin**). 2019. Empowering Latina scientists. *Science* 363: 825-826.
2. **Tarvin, RD.** 2015. Frog expedition in Cameroon. *Save The Frogs*, September 2015.
1. **Tarvin, RD**, Acosta, D, and S Ron. 2015. Is habitat destruction more dangerous for *Atelopus* than chytrid? *Froglog* 113:38.

MANUSCRIPTS IN REVISION

none

MANUSCRIPTS IN REVIEW

Douglas[†]*, TE, R Márquez[^]*, VR Holmes, JS Johnston, and **RD Tarvin***. Genome size evolution and life history correlates in the poison frog family Dendrobatidae. bioRxiv DOI: [10.1101/2023.06.30.547273](https://doi.org/10.1101/2023.06.30.547273)

Betancourth-Cundar, M, JC Ríos-Orjuela, AJ Crawford, DC Cannatella, and **RD Tarvin***. Honoring the Afro-Colombian musical culture with the naming of *Epipedobates [to be revealed]* sp. nov. (Anura: Dendrobatidae), a frog from the Pacific rainforests.

MANUSCRIPTS IN PREPARATION

Tarvin, RD, JL Coleman, DA Donoso, M Betancourth-Cundar, K López-Hervas, SR Ron, JC Santos, DC Cannatella, and R Fitch. Passive accumulation of toxins in cryptic poison frogs (Anura: Dendrobatidae) may shed light on the origins of acquired chemical defenses.

Holding[^], M, SRR Kolora[^], J Baldoza[‡], K von Madell[‡], J Smith, **RD Tarvin***, and P Sudmant*. Complete reference genomes of the California Ground and Fox Squirrel provide insights into native population diversity and invasive species dynamics.

Tarvin, RD, JC Santos, SR Ron, and DC Cannatella. Visual signal evolution in *Epipedobates* poison frogs during early stages of aposematism.

Salerno, PE, **RD Tarvin**, R Jaffé, SR Ron, GB Pauly, FJM Rojas-Runjaic, JC Señaris, and DC Cannatella. Genomics of Lost World frogs reveals complex evolutionary histories of nearby sky-island endemics.

Ramírez-Castañeda[†], V, **RD Tarvin**, R Márquez. Convergence in sodium channel mutations associated with neurotoxin resistance in snakes (Colubridae: *Erythrolamprus*)

Uricchio[§], LH, JC Santos, LA O'Connell, SR Ron, L Coloma, M Pie, C Richards-Zawacki, DC Cannatella, and **RD Tarvin**. Convergent evolution of voltage-gated sodium channels in toxic frogs suggests candidate sites associated with toxin resistance

AWARDS AND HONORS

- 2021 **Hellman Fellow**, Frank and Karen Dabby STEM Fellowship in the Society of Hellman Fellows, University of California, Berkeley
- 2018 **Miller Fellowship**, Miller Institute for Basic Research in Science, University of California, Berkeley
- 2018 **Postdoctoral Research Fellowship in Biology** (Research Using Biological Collections), National Science Foundation (declined in lieu of Miller Fellowship)
- 2016 **University Graduate Continuing Fellowship**, University of Texas at Austin
- 2016 **Ford Foundation Dissertation Fellowship Honorable Mention**, National Academies of Sciences, Engineering, and Medicine
- 2014 **Graduate Research Opportunities Worldwide Fellow**, National Science Foundation and USA International Development
- 2014 **Graduate Women in Science Fellowship Honorable Mention**, Sigma Delta Epsilon
- 2013 **Graduate Research Fellowship**, National Science Foundation
- 2006 **Half-tuition merit scholarship**, Boston University

GRANT SUPPORT

PENDING

Source:	Bureau of Land Management	Role:	PI
Title:	Genetics, morphology, and biology of <i>Taricha</i> newts, a lethal predator of red-legged frogs (<i>Rana draytonii</i>)	Funding Period:	07/01/24 – 06/30/27
		Total Direct Costs:	\$228,315

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Source: National Science Foundation	Role: Co-PI
Title: Collaborative Research: Comparing the roles of conserved and novel molecular building blocks underlying kleptocnidy in nudibranch gastropods	Funding Period: 04/01/24 – 03/30/27
	Total Direct Costs: \$434,497

CURRENT

Source: National Institutes of Health	Role: PI
Title: R35: Evolutionary genetics of adaptation to toxins in animals	Funding Period: 09/01/23 – 08/31/28
	Total Direct Costs: \$1,250,000

Source: Be Smart About Safety, UC Berkeley	Role: Co-PI
Title: Enhancing field safety in the Department of Integrative Biology	Funding Period: 01/01/24 – 12/30/26
	Total Direct Costs: \$20,330

Source: National Science Foundation	Role: PI
Title: Collaborative Research: EDGE CMT: A four-dimensional genotype-phenotype map of poison frog skin color	Funding Period: 12/15/23 – 12/14/27
	Total Direct Costs: \$1,157,513

Source: Life Sciences Initiative, UC Berkeley	Role: PI
Title: Integrative Biology Research Mixers	Funding Period: 06/01/22 – 06/30/24
	Total Direct Costs: \$15,000

Source: California Conservation Genomics Project	Role: Co-PI
Title: Mapping California's Vertebrate Genomic Diversity	Funding Period: 05/01/20 – 04/31/23
	Total Direct Costs: \$758,200

COMPLETED

Source: National Science Foundation (DEB-1556967)	Role: Senior Personnel
Title: Collaborative Research: Phylogenetics of autoresistance in poison frogs as revealed by phylogenomics, neurophysiology, and comparative ecology	Funding Period: 08/01/16 – 07/31/21
	Total Direct Costs: \$727,758 (to Cannatella, UT Austin)

Source: Berkeley Collegium Narrowing the Gap Between Teaching and Research	Role: Co-PI
Title: Developing a research-based genomics course with the UC Berkeley squirrels	Funding Period: 06/01/19 – 05/31/21
	Total Direct Costs: \$14,975

Source: National Geographic Society (048191) State-Aligned Needs Call for Partners	Role: PI
Title: EcoBlitz CA	Funding Period: 09/01/19 – 12/31/19
	Total Direct Costs: \$10,000

Source: National Science Foundation (DEB-1404409)	Role: Co-PI
Title: DISSERTATION RESEARCH: Why poison frogs don't poison themselves: phylogenetic origins and consequences of autoresistance	Funding Period: 07/01/14 – 06/30/15
	Total Direct Costs: \$12,965

DOCTORAL RESEARCH FUNDING

- 2014 **Ecology, Evolution, and Behavior DDIG Grant**, University of Texas at Austin
- 2014 **Young Explorers Grant**, National Geographic Society (#9468-14)
- 2014 **Grant-in-Aid-of-Research**, Society for Integrative and Comparative Biology
- 2013 **Grants in Herpetological Conservation and Research**, Minnesota Herpetological Society

- 2013 **Rosemary Grant Award**, Society for the Study of Evolution
- 2013 **E.E. Williams Research Grant Award**, Herpetologists' League
- 2013 **Gaige Award**, American Society for Ichthyologists and Herpetologists
- 2012 **Grant in Herpetology**, North Carolina Herpetological Society
- 2012 **Graduate Student Research Award**, Society of Systematic Biologists
- 2012 **Grant in Herpetology**, Society for the Study of Reptiles and Amphibians
- 2012 **Grant for Graduate Student Research in Herpetology**, Chicago Herpetological Society
- 2012 **Grant in Herpetology**, Texas Herpetological Society
- 2012 **Graduate Student Start-up Grant**, University of Texas at Austin

UNDERGRADUATE RESEARCH FUNDING

- 2010 **Ada Draper Award** for independent studies abroad, Boston University
- 2009 **Undergraduate Research Opportunities Program**, Boston University
- 2008 **Undergraduate Research Opportunities Program**, Boston University

INVITED SEMINARS AND CONFERENCE PRESENTATIONS

INVITED PRESENTATIONS AT CONFERENCES

- Tarvin, RD.** 2023. Conference on Diverse Mechanisms of Toxin Resistance, Max Planck, Berlin, Germany (invited speaker).
- Tarvin, RD.** 2023. Mexican Herpetology Meetings, Ensenada, Mexico. (Invited keynote speaker; in Spanish).
- Tarvin, RD.** 2022. Asociación Colombiana de Herpetología, Tercer Congreso Colombiano de Herpetología. Conferencista Magistral (Invited keynote speaker; in Spanish).
- Tarvin, RD.** 2022. Miller Institute for Basic Research in Science 24th Annual Interdisciplinary Symposium. Invited speaker
- Tarvin, RD.** 2021. International Virtual Meeting of Herpetology - Sociedad Herpetológica Mexicana. Invited keynote speaker (in Spanish)
- Tarvin, RD.** 2021. International Society on Toxinology, Cairns, Queensland, Australia. Invited keynote speaker
- Tarvin, RD.** 2021. California/Nevada Amphibian Populations Task Force Annual Meeting, Petaluma, CA. Invited keynote speaker (postponed because of COVID-19 pandemic)
- Waite, K, J Cutler, J Bentley, D McGuire, A Antoniou, J Lura, and **RD Tarvin.** 2020. National Council for the Social Studies & National Council for Geographic Education 2020 Conference.
- Waite, K, J Cutler, J Bentley, D McGuire, A Antoniou, J Lura, and **RD Tarvin.** 2020. The North American Association for Environmental Education 2020 Conference.
- Cutler, J, K Waite, J Bentley, D McGuire, A Antoniou, J Lura, and **RD Tarvin.** 2019. National Geographic Education Summit, Washington, DC.
- K Waite, A Antoniou, J Lura, DP de Leon Barido, J Cutler, J Bentley, D McGuire, and **RD Tarvin.** 2020. California Association for Environmental & Outdoor Education, Virtual Statewide Conference
- K Waite, A Antoniou, J Lura, J Cutler, J Bentley, D McGuire, and **RD Tarvin.** 2020. California Council for the Social Studies 2020 Conference, Costa Mesa, CA.
- Tarvin, RD.** 2019. Symposium: Professional Women in Herpetology: Lessons and Insights. Joint Meeting of Ichthyologists and Herpetologists, Snowbird, UT.
- Tarvin, RD.** 2018. National Geographic Explorer and Educator Meet-up. Monterey, California.

Tarvin, RD. 2016. Symposium: Young Explorers Works in Progress. National Geographic Society, Washington, DC.

Tarvin, RD, W Sachs, C Borghese, JC Santos, LA O'Connell, DC Cannatella, HH Zakon, and A Harris. 2016. Symposium: Omic Technologies for Investigating Venom Evolution. 8th World Congress of Herpetology, Hangzhou, China.

Tarvin, RD. 2015. Brain, Behavior, and Evolution Symposium. University of Texas, Austin, Texas.

SELECTED REGULAR PRESENTATIONS AT CONFERENCES (‡undergraduate mentee, †graduate student mentee)

Ramírez-Castañeda†, V, MB Sanguila, RM Brown, **RD Tarvin.** 2022. The fieldwork that we envision: a future of equitable field biology and reciprocity with the local communities. 30th Philippine Biodiversity Symposium, Father Saturnino Urios University, Butuan City, Philippines.

Beskid‡, SG, TE Douglas†, **RD Tarvin.** 2021. Investigating the origins of chemical defense in the *Drosophila melanogaster* model system. SACNAS National Diversity in STEM Digital Conference.

Montana‡, KO, V Ramírez-Castañeda†, **RD Tarvin.** 2021. Characterizing Potential Tetrodotoxin Resistance in Pacific Chorus Frogs, *Pseudacris regilla*. SACNAS National Diversity in STEM Digital Conference.

YC Wan‡, MJ Navarrete†, LA O'Connell, LH Uricchio, A Roland, ME Maan, SR Ron, M Betancourth-Cundar, A Amézquita, MR Pie, KA Howell, CL Richards-Zawacki, ME Cummings, DC Cannatella, JC Santos, **RD Tarvin.** 2021. Diurnality shapes the visual capacity of colorful Neotropical frogs and evidence for the loss of SWS2 in dendrobatid poison frogs. Oral presentation. I Latin American Congress of Evolution (CLEVOL).

Tarvin, RD, N Martin‡, YC Wan‡, N Kayfetz-Vuong‡. 2021. RNAseq of kleptocnid in aeolid nudibranchs. Oral presentation. Virtual Evolution 2021.

Tarvin, RD. 2020. Poison frog ddRAD methodological complications. Oral presentation. Virtual Genomic Social Hour, California Academy of Sciences, San Francisco, CA.

Tarvin, RD, D Donoso, R Fitch, K López‡, M Betancourth, A Amézquita, JC Santos, SR Ron, and DC Cannatella. 2020. Fine-scale evolution of aposematism in poison frogs. Oral presentation. 9th World Congress of Herpetology, Dunedin, New Zealand.

Goodman, JK, MJ Nonte, RW Fitch, **RD Tarvin,** DC Cannatella, and SR Ron. 2019. Poster presentation. Alkaloids of the Ecuadorian poison frog *Epipedobates boulengeri*. Undergraduate Research Symposium, Indiana State University.

de Leon, B III, C Rivera, P Jaiyasuriya, M Vicinanza, D Cannatella, **RD Tarvin,** and JC Santos. 2019. Poster presentation. Life history traits and mitochondrial protein mutation across Amphibia: Increased diversification in smaller species, small families, and short lives. Evolution, Providence, Rhode Island.

Santos, JC, T Cheng, T Lorea, D Cannatella, and **RD Tarvin.** 2019. Poster presentation. Evolution of diet specialization across Neotropical Anurans: Alkaloid sequestration and environment. Evolution, Providence, Rhode Island.

2b or not? 2d? Comparison of RADseq methods in two frog clades. 2018. Oral presentation. D Cannatella, **RD Tarvin,** A Chambers, J Santos, S Ron, M Betancourth, A Amézquita, D Hillis, and M Matz. Society of Systematic Biologists meeting, Columbus, Ohio.

Collins M, **RD Tarvin,** M Kandziora, W Dahdul, D Paul. 2018. Poster presentation. Phenomap - challenges and successes in bringing together multiple data projects to build new visualizations of phenotypic information and specimen records. *Biodiversity Information Science and Standards* 2: e25698. Biodiversity Information Standards (TDWG), Dunedin, NZ

Tarvin, RD, JC Santos, SR Ron, and DC Cannatella. 2017. Oral presentation. Visual signal evolution in *Epipedobates* poison frogs. XI Congreso Latinoamericano de Herpetología, Quito, Ecuador.

López, KS, **RD Tarvin**, SR Ron, M Betancourth, A Amézquita, and DC Cannatella. 2017. Oral presentation. Is *Epipedobates boulengeri* a species complex? Molecular phylogeny of an inconspicuous poison frog. XI Congreso Latinoamericano de Herpetología, Quito, Ecuador.

Tarvin, RD, CM Borghese, W Sachs, JC Santos, L Yu, LA O'Connell, DC Cannatella, RA Harris, and HH Zakon. 2017. Oral presentation. Evolution of resistance to epibatidine, a potent toxin, in dendrobatid poison frogs. Joint Meeting of Ichthyologists and Herpetologists, Austin, Texas.

Tarvin, RD, CM Borghese, W Sachs, JC Santos, L Yu, LA O'Connell, DC Cannatella, RA Harris, and HH Zakon. 2017. Oral presentation. Evolution of alkaloid resistance in poison frogs revealed by comparative phylogenetics. Annual Meeting of the Society for Molecular Biology and Evolution, Austin, Texas.

Tarvin, RD, W Sachs, C Borghese, JC Santos, LA O'Connell, DC Cannatella, HH Zakon, and A Harris. 2016. Oral presentation. Evolution of epibatidine resistance in poison frogs. Society for the Study of Evolution, Austin, Texas.

Tarvin, RD, JC Santos, L O'Connell, HH Zakon, and DC Cannatella. 2014. Oral presentation. Evolución de la resistencia contra los alcaloides en Dendrobatidae y *Atelopus*. X Congreso Latinoamericano de Herpetología, Cartagena, Colombia.

Tarvin, RD, JC Santos, L O'Connell, HH Zakon, and DC Cannatella. 2014. Oral presentation. Genetic basis of alkaloid resistance in harlequin toads and poison frogs. Society for the Study of Evolution, Raleigh, NC, USA.

Santos, JC, **RD Tarvin**, L O'Connell, and LA Coloma. 2014. Oral presentation. Overview of the comparative transcriptomics in poison frogs. Society for Molecular Biology and Evolution, San Juan, Puerto Rico.

Tarvin, RD. 2012. Oral presentation. Chytrid or habitat degradation? Evaluating the causes of population decline of *Atelopus spumarius* at Río Pucayacu, Ecuador. UT Graduate Research Symposium, Austin, TX.

SYMPOSIUM ORGANIZED

R Márquez and **RD Tarvin**. Coloración y genética en ranas venenosas. 07/2017. XI Congreso Latinoamericano de Herpetología, Quito, Ecuador.

INVITED RESEARCH SEMINARS

- 2024 University of Texas at Austin, Department of Integrative Biology
- 2023 Pontificia Universidad Católica del Ecuador, Biological Sciences (in Spanish)
- 2023 University of California, Davis, Integrative Genetics and Genomics Graduate Group
- 2023 University of North Carolina, Charlotte, Department of Bioinformatics and Genomics
- 2023 University of Florida, Helicopter Science Series
- 2022 California Academy of Sciences, Institute for Biodiversity Science & Sustainability
- 2022 University of Arizona, Department of Ecology and Evolutionary Biology
- 2022 Universidad Indoamérica, Facultad de Ciencias del Medio Ambiente (in Spanish)
- 2021 University of Pittsburgh, Department of Biological Sciences
- 2021 East Carolina University, Department of Biology
- 2021 San Francisco State University, Department of Biology
- 2021 Auburn University, Department of Biological Sciences, Graduate-student invited speaker
- 2020 Universidad San Francisco de Quito, Cumbayá, Ecuador, Colegio de Ciencias Biológicas y Ambientales (in Spanish)
- 2020 Universidad del Quindío, Quindío, Colombia, Grupo de Herpetología. (in Spanish)
- 2020 University of California, Berkeley, Herp Group Seminar Series (postponed due to COVID-19)
- 2020 University of Florida, Museum of Natural History, Graduate-student invited speaker
- 2020 Southern Illinois University Carbondale, Department of Zoology (postponed due to COVID-19)
- 2020 University of California, Berkeley, Dept. of Environmental Science, Policy & Management Wildlife and Conservation Seminar

- 2019 University of California, Berkeley, Miller Institute for Basic Research in Science
- 2019 University of Texas at Arlington, Department of Biology
- 2018 Texas Tech University, Department of Biological Sciences
- 2018 University of Texas at Austin, Osher Lifelong Learning Institute Seminar Series
- 2018 Louisiana State University, Natural History Museum, Graduate-student invited speaker
- 2017 Aquarium of the Pacific, invited speaker
- 2016 University of Texas at Austin, Population Biology Seminar Series
- 2016 Universidad de Nariño (Colombia), Department of Biology
- 2016 Universidad de los Andes (Colombia), Department of Biological Sciences
- 2016 University of Texas at Austin, Waggoner Center for Alcohol and Addition Research
- 2014 Pontificia Universidad Católica del Ecuador, School of Biology

TEACHING EXPERIENCE

UNIVERSITY OF CALIFORNIA, BERKELEY

Courses Taught

- IB 84 / FRENCH 24: an updated IB 84 (2024 onward), co-taught with Mairi McLaughlin, Dept. of French
- IB 24/84: Breaking Language Barriers in Evolution and Ecology (Freshman/Sophomore seminar); Translations are posted online: <https://evolution.berkeley.edu/improving-access-to-primary-literature-in-biology-through-translation/>
- IB 98: Science Communication and Education DeCal (Guest lectures only)
- IB 104LF: Natural History of the Vertebrates
- IB 134L: Practical Genomics
- IB 234: Seminar on Biology of Amphibians & Reptiles

Teaching Record

- 2024 Sp Instructor, IB 234 (with Jim McGuire & Marvalee Wake)
Co-Instructor, IB 84 (with Mairi McLaughlin, Department of French)
- 2023 Fa Instructor, IB 134L (with Peter Sudmant)
Instructor, IB 234 (with Jim McGuire & Marvalee Wake)
Guest Lecturer, IB 105: Natural History Museums and Biodiversity Science
Guest Lecturer, IB 77: Integrative Human Biology
- 2023 Su Guest Lecturer, Crash Course in Ecology and Evolution (online, 1200 students)
- 2023 Sp Instructor, IB 234 (with Jim McGuire & Marvalee Wake)
Instructor, IB 84
Guest Lecturer, IB 98
- 2022 Fa Guest Lecturer, IB 305: Thriving in Academia
Guest Lecturer, IB 98
Guest Lecturer, IB 105: Natural History Museums and Biodiversity Science
Instructor, IB 134L (with Peter Sudmant)
Instructor, IB 234 (with Jim McGuire & Marvalee Wake)
- 2022 Sp Instructor, IB 84
Instructor, IB 234 (with Jim McGuire & Marvalee Wake)
Instructor, IB 104LF (with Alan Shabel and Andrew Rush)
- 2021 Fa Guest Lecturer, IB 77: Integrative Human Biology
Instructor, IB 134L (with Peter Sudmant)
Instructor, IB 234 (with Jim McGuire & Marvalee Wake)
- 2021 Sp Instructor, IB 234 (with Jim McGuire & Marvalee Wake)
Instructor, IB 24
- 2020 Fa Instructor, IB 134L (with Peter Sudmant)
Instructor, IB 234 (with Jim McGuire, Marvalee Wake, and Dave Wake)

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- 2020 Sp Instructor, IB 234 (with Jim McGuire, Marvalee Wake, and Dave Wake)
- 2019 Fa Instructor, IB 234 (with Jim McGuire, Marvalee Wake, and Dave Wake), Fall
- 2019 – present: Faculty member, NIH T32 Training Grant: Genomics
- 2019 Fa Guest Lecturer, IB 77: Integrative Human Biology
- 2019 Su Guest Lecturer, Field Genomics

UNIVERSITY OF TEXAS AT AUSTIN

- 2018 Guest Lecturer, Animal Physiology
- 2016 Instructional Assistant, Introduction to R for Bioinformatics, Center for Computational Biology and Bioinformatics
- 2016 Instructional Assistant, Introduction to Unix for Bioinformatics, Center for Computational Biology and Bioinformatics
- 2016 Co-instructor, Biocomputing peer-led working group, Center for Computational Biology and Bioinformatics. Course materials: http://ccbbatut.github.io/Biocomputing_Spring2016/
- 2015 Co-instructor, Biocomputing peer-led working group, Center for Computational Biology and Bioinformatics. Course materials: http://ccbbatut.github.io/Biocomputing_Spring2015/
- 2014 Co-instructor, Introduction to Bioinformatics, Big Data Summer School, Center for Computational Biology and Bioinformatics
- 2014 Instructional assistant, Short course in R, Department of Statistics
- 2013 Instructional assistant, Short course in R, Department of Statistics
- 2013 Teaching Assistant, Herpetology
- 2012 Teaching Assistant, Entomology
- 2012 Teaching Assistant, Introductory Biology
- 2011 Teaching Assistant, Comparative Anatomy

BIOINFORMATICS WORKSHOPS IN ECUADOR

- 2019 Co-Instructor, Genomics of Biodiversity, International Biogeography Society Meeting, Quito, Ecuador. With colleague P. Salerno I designed and taught a day-long interactive course in genomics to 14 undergraduate students, graduate students, postdocs, and professors (mostly from South America). All course materials are available online at https://rdtarvin.github.io/IBS2019_Genomics-of-Biodiversity/
- 2017 Co-Instructor, Desde el laboratorio hasta la programación: Como diseñar e implementar exitosamente un proyecto de secuenciación de RAD [From the lab to programming: How to successfully design and carry out a RAD sequencing project], Pontificia Universidad Católica del Ecuador (PUCE), Quito, Ecuador. With colleague P. Salerno I designed and taught a week-long course in Spanish to 17 graduate students from South America. All course materials are available at https://rdtarvin.github.io/RADseq_Quito_2017/. The overarching goal of this course was to provide Next Generation Sequencing wetlab and drylab training to South American students and their institutions.

ORGANIZATION FOR TROPICAL STUDIES

- 2018 Invited Faculty, Tropical Biology: An Ecological Approach
- 2013 Instructional Counselor, Exotica: Biological Diversity in Costa Rica

THE CARPENTRIES

- 2016 Software Carpentry Workshop Teacher, python section, University of California San Francisco
- 2016 – 2019: Registered Trainer, Data Carpentry
- 2015 – 2019: Registered Trainer, Software Carpentry

MENTORING

UNIVERSITY OF CALIFORNIA, BERKELEY

Postdoctoral Trainees

- 2021 – 2023 Dr. Inga Conti-Gerpe (2021 NSF Postdoctoral Research Fellowship in Biology; co-advised by Dawson Lab, UCB; now tenure-track faculty at Lingnan University, Hong Kong)
- 2021 – 2023 Dr. Genevieve Mount (2020 NSF Postdoctoral Research Fellowship in Biology; co-advised by Womack Lab, Utah State University; now a bioinformatician at Boehringer Ingelheim)
- 2019 – 2021 Dr. Lawrence Uricchio (now a tenure-track Asst. Professor at Tufts University)

Graduate Student Trainees

- 2021 – Kannon Pearson (IB PhD student; 2023 NSF GRFP awardee)
- 2020 – María José Navarrete (IB PhD student; 2020 AAUW International Fellow)
- 2019 – Valeria Ramírez-Castañeda (IB PhD student; 2020 and 2021 P.E.O. International Peace Scholarship recipient, Sigma Xi awardee, 2021 Outstanding GSI Awardee)
- 2019 – 2023 Tyler Douglas (IB PhD student; 2020 NSF GRFP Honorable Mention)

Undergraduate Thesis Advisor

- 2023 – Peter Chen (IB). Investigating prophylactic and therapeutic self-medication in *Drosophila melanogaster*.
- 2020 – 2021 Kannon Pearson (ESPM). A review of chemical defense in harlequin toads (*Bufo* spp.: *Atelopus*).
- 2020 – 2021 Jada Baldoza (Mills College, Oakland, CA). Complete mitochondrial genomes of two squirrels, *Otosperophilus beecheyi* and *Sciurus niger*.
- 2019 – 2020 Yin Chen Wan (U. College Dublin, Ireland). Opsin evolution across five aposematic frog clades.
- 2019 – 2020 Kate Montana (IB). Characterizing potential tetrodotoxin resistance in Pacific Chorus frogs, *Pseudacris regilla*. Awarded the Dept. of Integrative Biology Natural History Award

Undergraduate Research Mentees (UCB students unless otherwise noted)

A total of 28 students, including: Alina Tran (PMB, 2024-present), Chenhey Chu (ESPM, 2024-present), Marley Michel (MCB, 2024-present), Erin Yang (ESPM, 2024-present), Natalie Meyer (MCB, 2023-present), Lizbeth Garcia (IB, 2022-present), Sophie dela Cruz (IB, 2022-present), Prabin Gharti (IB, 2023-present), Peter Chen (MCB/IB, 2022-present), Nikki Lemus (postbac, 2022-present), Jacob Saal (MCB/postbac, 2021-present), Inés Huret (IB, 2022-present), Marc Bonnot (ESPM, 2021-2022), Bri Baumbach (ESPM, 2021-2022), Ameya Joshi (IB, 2021-present), Puja Iyer (2021-present), Vasheeigaran Shenthana (MCB, 2021-present), Zahara Gianna Gali (IB, 2021-2022), Sofia Beskid (2021; visiting student from UT Austin, awarded the NSF Research Experience for Undergraduates), Novia Kayfetz-Vuong (2021-2022; awarded the Summer Undergraduate Research Fellowship), Connor Tumelty (2020-2022), Kannon Pearson (ESPM, 2020-2021), Rachel Ong (2020-2021), Noah Martin (IB, 2019-2020; awarded the 2019 Conchologists of America Academic Grant), Kate Montana (IB, 2019-2023), Kristen Tamsil (MCB, 2018-2020), Yin Chen Wan (2019-present, visiting student from University College Dublin), Zongzhuang Liu (2019-2020, visiting student from Peking University)

Graduate Student Committee Service

Advisory Committee [4]: Isaac Lin (PhD, IB), Emilie Richards (PhD, IB), Jacquelyn Galvez (PhD, IB), Francisca Catalan (PhD, IB)

Qualifying Exam Committee [11]: Maya Munstermann (PhD, IB, regular member), Alex Guzman (PhD, IB, regular member), Sarah Wenner (PhD, ESPM, outside member), Francisca Catalan (PhD, IB, regular member), Gabriela Arango (PhD, IB, regular member), Diler Haji (PhD, IB, regular member), Sean Perez (PhD, ESPM, outside member), Maryam Sedaghatpour (PhD, IB, regular member), Trinity Walls (PhD, ESPM, outside member), Michelle St. John (PhD, IB, regular member), Emilie Richards (PhD, IB, regular member)

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Dissertation Committee (excluding advisees) [4]: Diler Haji (PhD, IB), Hiromu Suzuki (PhD, IB), Gabriela Arango (PhD, IB), Sean Perez (PhD, ESPM)

UNIVERSITY OF TEXAS AT AUSTIN

Undergraduate Thesis Advisor

2014 – 2017 Karem López (Universidad Central del Ecuador). Thesis title: Filogenética molecular de una especie críptica, *Epipedobates boulengeri*.

Undergraduate Research Mentees

A total of 6 students, including: Karem López (2014-2017; was a visiting student from Universidad Central del Ecuador, is now a masters student at U. de Sevilla, Spain), Taylor Loera (2017-2018), Kate Korchek (2017-2018; now in Veterinary school), Meredith Cooper (2017-2018), Emily Powell (2012-2015; now a masters student at U. of Miami), Cristina Toapanta (2012-2014; was a student at Pontificia Universidad Católica del Ecuador, is now a PhD candidate at the U. of Minnesota)

Highschool Research Mentee

Chandana Kamaraj (2015)

FIELDWORK

FIELDWORK IN ECUADOR

General herpetofauna survey (08/2023)

Location: Reserva Tesoro Escondido, Esmeraldas, Ecuador

Field Team: Santiago Ron (lead), Rebecca Tarvin (co-lead), Thibault de Poyferré, Mylena Masache, Vanessa Moreira

FIELDWORK IN COLOMBIA

Collection of type series, *Epipedobates* sp. nov. (08/2022)

Location: Ladrilleros, Valle de Cauca, Colombia

Field Team: Rebecca Tarvin (lead), Mileidy Betancourth-Cundar, Juan Camilo Ríos-Orjuela, Luis Esteves

FIELDWORK IN CALIFORNIA

Monitoring of newt demography (09/2023)

Location: UC Botanical Garden, Berkeley, Alameda, CA

Field Team: Rebecca Tarvin, Vance Vredenburg, Kannon Pearson, Kay Yanev, Bria Boose, Ben Karin, Daniel Rodrigues Oliveira, Max Taus, Jess McLaughlin, Holly Forbes, Sophia Warsh, Susan Malisch, Kinsey Brock, Meg Scudder, Natalie Ng

Activities: We pit tagged 65 *Taricha* spp. newts

Collection of colubrid snakes to search for toxin-binding proteins (09/2023)

Location: Cotoni-Coast Dairies, Santa Cruz, CA

Field Team: Rebecca Tarvin, Mike Westphal, Kannon Pearson, Chad Moura, Lee Thompson, Natalie Meyer

Collection of colubrid snakes to validate karyotyping protocols (05/2023)

Location: Richmond, Contra Costa, CA and Carmel Valley, Monterey, CA

Field Team: Rebecca Tarvin

Collection of *Taricha* to test for tetrodotoxin binding proteins (01/2023)

Location: UC Berkeley Botanical Garden, Berkeley, CA

Field Team: Rebecca Tarvin (lead), Dan Minor, Samantha Nixon

Collection of *Pseudacris* and *Taricha* to test for tetrodotoxin resistance in frogs (10/2020)

Location: Bay Area, CA (San Francisco, Contra Costa, and Alameda counties)

Field Team: Kate Montana (lead), Rebecca Tarvin, Valeria Ramírez Castañeda

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H. Richardson Redwoods Reserve Herpetological Survey (04/2019; 07/2019)

Location: California (Sonoma county)

Field Team: David Wake (lead), Jim McGuire, Michelle Koo, Carol Spencer, Rebecca Tarvin, Sina Amini, Isaac Krone, Ben Karin

Field collection of squirrels for genome sequencing (05/2019; 09/2019)

Location: California (Alameda, Monterey counties)

Field Team: Michael Nachman, Chris Conroy, Rebecca Tarvin

POSTDOCTORAL FIELDWORK (08/2017; 07/2018)

Location: Ecuador (Esmeraldas, Manabí, Cotopaxi, Azuay, El Oro, Guayas and Bolívar provinces)

Field Team: Rebecca Tarvin (lead), Santiago Ron, David Cannatella, Diego Almeida, Karem López, Darwin Nuñez, Alex Achig, Eloy Nusirquia, Analisa Shields-Estrada

Research: Systematics of *Epipedobates* poison frogs. I lead a team of 7-9 people for two weeks to collect DNA samples and record mating calls along potential hybridization zones.

DOCTORAL FIELDWORK (06/2012 – 08/2012; 09/2014 – 12/2014; 09/2016)

Location: Ecuador (Esmeraldas, Manabí, Santo Domingo, Pichincha, Bolívar, Los Ríos, Zamora-Chinchipec, Pastaza, Napo, and El Oro provinces) and Colombia (Boyacá, Tolima, Cundinamarca, Chocó, Valle de Cauca, Nariño, and Cauca departments)

Field Team: Rebecca Tarvin (lead), Santiago Ron, Adolfo Amézquita, Mileidy Betancourth, Karem López, Cristina Toapanta

Research: How do poison frogs resist their own poisons? How has the aposematic phenotype diversified in *Epipedobates* poison frogs? I collected tissues, guts, skins, and photographs of twenty-seven species of poison frogs. I identified several genetic mutations providing resistance to alkaloids (Tarvin et al. 2016, Tarvin et al. 2017b) and showed rapid diversification of color in *Epipedobates* (Tarvin et al. 2017a, Tarvin et al. in prep).

VOLUNTEER FIELDWORK ASSISTANT (07/2013)

Location: Centre, East, and West Regions of Cameroon

Field Team: David Blackburn (lead), Marcel Talla Kouete, Brian Freiermuth, Dan Portik, Greg Jongsma, Rebecca Tarvin

Research: Are *Cardioglossa* frogs defended by alkaloids? I collected specimens and alkaloid secretions as part of a California Academy of Sciences survey team.

VOLUNTEER FIELDWORK ASSISTANT (04/2011; 05/2011)

Location: Estación Científica Yasuní, Orellana, Ecuador and Reserva Biológica Cerro Seco, Bahía de Caráquez, Manabí, Ecuador

Field Team: Santiago Ron (lead), Fernando Ayala, Rebecca Tarvin, Cristina Toapanta, Daniel Rivadeneira, Daniela Pareja

Research: What is the diversity of herpetofauna in Yasuní and Bahía de Caráquez? I prepared specimens as part of a Pontificia Universidad Católica del Ecuador survey team.

VOLUNTEER FIELDWORK DIRECTOR (06/2010 – 12/2010)

Location: Zanjarajuno Ecological Reserve, Puyo, Pastaza, Ecuador

Field Team: Rebecca Tarvin (lead)

Research: What is the population status of the harlequin toad, *Atelopus spumarius*? I led mark-recapture surveys for six months. We found that the population was declining likely because of habitat degradation (Tarvin et al. 2014).

UNDERGRADUATE FIELDWORK (06/2009 – 08/2009)

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Location: Smithsonian Tropical Research Institute, Gamboa, Panama

Field Team: Karen Warkentin (lead), Rebecca Tarvin, Catalina Silva, Venetia Briggs

Research: How does plasticity in hatching affect growth and behavior following metamorphosis? I raised red-eyed treefrogs as part of my honors thesis. I identified a trade-off between rapid growth and activity following metamorphosis (Tarvin et al. 2015).

UNDERGRADUATE FIELDWORK (11/2008)

Location: Tiputini Biodiversity Station, Orellana, Ecuador

Field Team: Rebecca Tarvin (lead), Morgan Nabhan

Research: I performed a herpetological survey for a class project. We identified 30 species of frogs.

SERVICE AND SYNERGISTIC ACTIVITIES

UNIVERSITY SERVICE

- 2024 – Co-Chair, IB Field Safety Committee
- 2021 – Undergraduate Advisor, Department of Integrative Biology (25 students advised in Fall 2021; 30 students advised in Spring 2022; 28 students advised Fall 2022; 21 students advised in Spring 2023; 28 students advised in Fall 2023 as of 11/17/23 – 42 expected)
- 2020 – 2023 Faculty Director, Berkeley Connect in Biology, Department of Integrative Biology
- 2019 – 2020 Member, Department of Integrative Biology Seminar Committee

PROFESSIONAL SOCIETY AND GOVERNMENTAL SERVICE

Society Leadership

- 2020 – 2024 Board Member, Board of Directors, Society for the Study of Amphibians and Reptiles
- 2021 – 2022 Member, Equity and Inclusion Committee, Genetics Society of America
Co-author, *Understanding who we are* <https://genestogenomes.org/understanding-who-we-are/>

Society Membership

- 2023 – Alianza Jambato (Ecuador)
- 2023 – Amphibian Genomics Consortium
- 2021 – Genetics Society of America
- 2020 – 2021 Herpetologists' League
- 2018 – Society for the Study of Amphibians and Reptiles
- 2015 – Society for the Study of Evolution
- 2017 – Society for Molecular Biology and Evolution
- 2014 – 2018 American Society of Ichthyologists and Herpetologists

Peer-Review for Academic Journals

- 2024 PLOS Computational Biology (1), The American Naturalist (1)
- 2023 Evolutionary Ecology (2), Science Advances, Oryx, Current Biology, American Naturalist, Frontiers in the Ecology and the Environment
- 2022 PeerJ, Journal of Evolutionary Biology, Behavioral Ecology and Sociobiology
- 2021 Systematic Biology, Toxins, The American Naturalist, Biology Letters, Heredity
- 2020 Molecular Biology and Evolution, Molecular Phylogenetics and Evolution, Cell, Environmental Microbiology Reports, Neotropical Biodiversity
- 2019 Molecular Phylogenetics and Evolution, PNAS, Conservation Genetics, PLOS ONE, Journal of Experimental Biology, Genes
- 2018 Journal of Ocean University of China, Molecular Biology and Evolution, Evolution, PLOS ONE
- 2017 PLOS Neglected Diseases, PLOS One, Peer J, Biological Journal of the Linnean Society, BMC Genomics

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2016 & prior: Evolution, Heredity, PLOS One, Amphibia Reptilia

Reviewer for Grant Competitions

- 2022 National Science Foundation IOS Ad Hoc Reviewer, PRFB Reviewer
- 2020 Society of Systematic Biologists Graduate Student Research Award
- 2019 National Science Foundation DEB Panel
- 2019 National Geographic Society Early Career grants (invited but declined)
- 2017 Herpetologists' League E.E. Williams Graduate student award

Thesis Evaluator

- 2022 Melissa Hernandez Poveda, Universidad de los Andes, Master in Biological Sciences

Judge for Oral Presentation Competition

- 2022 Society for the Study of Amphibians and Reptiles George B. Rabb Undergraduate Poster Award for best undergraduate poster at the annual Joint Meeting of Ichthyologists and Herpetologists
- 2019 Society for the Study of Amphibians and Reptiles Seibert Awards for best student talks at the annual Joint Meeting of Ichthyologists and Herpetologists

PUBLIC OUTREACH

Organization Leadership

AmphibiaWeb (www.amphibiaweb.org) We curate a database and website containing all published information about amphibian diversity for both the scientific community and the general public. I am responsible for creating some of the information on the website, as well as writing grants to support our staff and shaping the future of Amphibia Web.

- 2020 – Chair, Strategic Planning Committee, Annual Report Working Group
- 2020 – Member, Steering Committee, Species Accounts Working Group, Education and Outreach Working Group
- 2019 – Senior Associate

EcoBlitz (<https://ecoblitz.education>) California National Geographic Explorer Chapter and Certified Educators worked together to create a grassroots bioblitz and trash survey through K12 schools in California.

- 2020 – 2021 Director of Data and Analysis
- 2019 – 2020 Project Leader. 2500 students and 30 classrooms participated
- 2018 – 2019 Team Member. 16 schools and 900 students participated

Austin Science Advocates (www.AustinScienceAdvocates.wordpress.com) The group aims to facilitate involvement of graduate students in local, state, and national science policy issues.

- 2017 – 2018 Contributor
- 2016 – 2017 Lead Organizer
- 2016 Co-founder

Interviews

- 2023 [Scientific American](#). Commentary on a recent publication in *Molecular Ecology* about toxin resistance in birds.
- 2023 [Knowable Magazine](#). Interviewed for the article “Mysteries of the poisonous amphibians”
- 2022 [University of Kansas](#). Commentary on a recent publication from our lab in *PNAS* about equitable fieldwork.
- 2022 [UC Berkeley](#). Commentary on a recent publication from our lab in *BioScience* about translation in science.

- 2022 [UC Berkeley](#). Commentary on a recent publication from our lab in *Toxicon: X* about chemical defenses in Harlequin toads.
- 2021 [National Geographic News](#). Commentary on a recent publication in *Journal of Physiology* about resistance to batrachotoxin in poison frogs and poison birds.
- 2021 [Vox News](#). Commentary on a recent publication in *Neotropical Biodiversity* about the impact of land-use change on poison frog ecology and conservation.
- 2020 [New York Times](#). Commentary on a recent publication in *Cell* about the neurobiology of taste in octopuses.
- 2020 [Ciencia Café Pa' Sumercé](#). Interviewed in Spanish by a Colombian science outreach organization about my research and the time that I've spent in South America.
- 2020 [Berkeley Science Review](#). Interviewed by a UCB graduate student about fly research in the lab.
- 2020 Scholastic's Science World. Interview about content for a classroom magazine.
- 2019 [Inside Science](#). "How to Catch a Poison Frog." Video interview about why I became a frog biologist. July 16, 2019.
- 2018 [Chemical & Engineering News](#). "Why Don't Poison Frogs Poison Themselves?" Video interview with coauthor Borghese, accompanied by a series of animations and explanations produced by the American Chemical Society production team. February 9, 2018.
- 2017 [La Recherche](#). "Le secret des grenouilles venimeuses." Interviewed for a French research magazine. November 2017.
- 2017 [Science News for Students](#). "How these poison frogs avoid poisoning themselves." An adapted version of the Science News article. November 20, 2017.
- 2017 [Science for the People](#). "Frogs From the Skin In." Interviewed by a syndicated science radio show about *Science* article. November 3, 2017.
- 2017 [BYUradio](#). Top of the Mind: "Rebuilding After Disasters, Poison Frogs, Bitcoin." Interviewed about *Science* article by a University radio with more than 56 million listeners across live streams on SiriusXM and Dish TV. October 19, 2017.
- 2017 [The Wire](#). "This Frog's Poison Is Among the Deadliest in Nature – So Why Doesn't It Kill the Frog Itself?" Interviewed by a popular science magazine about *Science* article. October 9, 2017.
- 2017 [National Geographic](#). "Now We Know Why Poison Frogs Don't Poison Themselves." Interviewed by National Geographic press team about *Science* article. September 28, 2017.
- 2017 [The Daily Texan](#). "UT researchers discover how poison frogs resist their own deadly toxins." Interviewed by undergraduate journalist for UT's student-run newspaper. September 27, 2017.
- 2017 [Le Monde](#). "Coasse toujours, tu m'intéresses." Interviewed by daily French newspaper about *Science* article. September 26, 2017.
- 2017 [Science Update](#). "Why don't poison frogs poison themselves?" Interviewed by AAAS podcast about *Science* article. September 22, 2017.
- 2017 [Science News](#). "The way poison frogs keep from poisoning themselves is complicated." Interviewed about *Science* article. September 22, 2017.
- 2017 [The Scientist](#). "How Poison Frogs Avoid Poisoning Themselves." Interviewed by a popular science magazine about *Science* article. September 21, 2017.
- 2017 [University of Texas at Austin](#). "Why Poison Frogs Don't Poison Themselves." Press release for *Science* article. September 21, 2017. This press release was the basis for news articles published by the [International Business Times](#), [Science X](#), [XinhuaNet](#) (a Chinese newspaper), [Genetic Engineering and Biotechnology News](#), [Yahoo News](#), [Futurity](#), and was translated for national daily newspapers in the Netherlands ([NRC](#)), Spain ([ABC España](#)) and Russia ([Vesti](#)).
- 2017 [Chemistry World](#). Comment on a recent publication stemming from our 2016 *MBE* article, in "Single mutation keeps lethal frog from poisoning itself." September 2017.
- 2016 [NPR](#), All Things Considered: Interviewed about perspective on the importance of synthesizing toxins, featured in "Chemists re-create deadly frog poison In the lab" November 2016.
- 2016 [KVRX Radio](#), They Blinded Me With Science, two interviews: 1) Guest interview about science policy advocacy at the University of Texas at Austin. 2) Promotional interview for Science Under the Stars talk.

- 2015 **KVRX Radio**, They Blinded Me With Science: Guest interview about dissertation research.
2014 **National Geographic**: Short Q&A related to my experience becoming a biologist for the electronic newsletter. June 2014.

Outreach in K-16 Classrooms

- 2023 **Invited speaker**, Pontificia Universidad Católica del Ecuador, Seminar on how to get into graduate school
2020 **Invited speaker**, University of California, Merced, Dan Edwards' Herpetology class
2020 **Invited speaker**, Pontificia Universidad Católica del Ecuador, Santiago Ron's Evolución class
2019 **Invited speaker**, Universidad de Costa Rica, Jenny Stynoski's Ecología Química class
2019 **Judge**, National Geographic Society GeoChallenge (5th-8th grades)
2019 **Skype a Scientist**, 5th grade class, Dr. Gerald H Woehr Elementary School, NJ; 2nd grade class, Our World Neighborhood Charter School, NY; 5th grade class, Southern Columbia Area Middle School, PA; all ages (in Spanish), Escuela de Pequeñ@s Científic@s Espiciencia, Spain. I skyped for 30 minutes with kids to tell them about a career in biology and poison frogs.
2018 **TED-Ed Video and Lesson Plan**. "Why don't poisonous animals poison themselves?" Over 2.4 million views as of June 2023.
2013 **Volunteer Teacher**, Science Club, Foundation Communities, Austin, TX. "Build your own insect." I designed a hands-on activity to teach third graders about insects.
2010 **Volunteer Teacher**, Citizen Schools, Edwards Middle School, Charlestown, MA. I designed and taught an after-school program on frog ecology to 16 six-graders, culminating in a poster they presented to their peers.

Public Talks, Panels, and Booths

- 2023 **Night at the Museum** Museum of Vertebrate Zoology at UC Berkeley fundraising event. I gave a short talk about our research program to a small audience of potential donors.
Cal Day Museum of Vertebrate Zoology at UC Berkeley undergraduate recruitment. I gave a talk about my research to a crowd of 60 prospective students and parents.
Integrative Biology Field Event – hosted 15 local community members on a hike to see mating newts in Briones Regional Park, CA
2022 **Center for Computational Biology** Retreat, DEI Panelist
National Science Policy Network Panelist, "Making Science Accessible for All: Language"
[YouTube Recording](#)
Science At Cal Guest speaker. "Nature's Toxic Defenses: Why don't poison frogs poison themselves?" 8 October 2022 [YouTube Recording](#)
Splash. "Animal toxins in natural history museums: the good, the bad, and the ugly" 16 April 2022, Berkeley, CA. Interactive presentation introducing 7 high school students to toxic animals in the MVZ and Essig museum. Led by my entire research lab.
2020 **Nerd Nite Invited Speaker**. "Their Chemical Romance: How Animals Create, Escape and Steal the Most Potent Poisons on Earth" 24 February 2020, Oakland, CA. 21+ audience of over 200 people. [YouTube Recording](#)
2019 **Cal Day**, Museum of Vertebrate Zoology at UC Berkeley opens up to the public one day a year. I helped present an interactive poster about poison frogs.
2018 **Girl Scouts**, Berkeley-Albany, CA troop. With two other postdoctoral researchers, I discussed insect biology and research with 8 girl scouts preparing to receive their Bug Badge.
2017 **Aquarium of the Pacific Invited Speaker**. "Why don't frogs poison themselves? (and other stories)." Invited to give a talk about frogs following the opening of a new frog exhibit at the Aquarium of the Pacific in Long Beach, California.
2017 **Explore UT**. "Frogs and fishes of the Americas." Public presentation via an interactive question-and-answer poster and live frog display.

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- 2016 **Science Under the Stars.** "Poisons, death, and survival in the animal kingdom." Graduate-student-led public talk series, University of Texas at Austin.
- 2016 **Explore UT.** "To eat or be eaten: Frogs of Central and South America." Public presentation via an interactive question-and-answer poster and live frog display.
- 2015 **Family Day, UT.** "What happens if I lick a poison frog? And other answers for everything you've ever wanted to know about poison frogs." Public presentation via an interactive question-and-answer poster.

Other

- 2020 **Amphibioscope**, a daily horoscope generator that incorporates information from AmphibiaWeb for entertainment and science communication purposes.
tarvinlab.github.io/amphibioscope