

Benjamin R. Karin

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EDUCATION

PhD Candidate, University of California Berkeley

Advisor: Prof. Jimmy A. McGuire

Intended Graduation — May 2023

Title: The Evolutionary and Biogeographic History of Sulawesi's Sphenomorphine Skinks

**Berkeley, CA
2016–Present**

M.S. Biology, Villanova University

Advisor: Prof. Aaron M. Bauer

Title: Phylogeography and Evolution of Three Species of *Eutropis* on Borneo

**Villanova, PA
2013–2016**

B.A. Integrative Biology, University of California Berkeley

Highest Honors and Distinction

**Berkeley, CA
2008–2012**

PUBLICATIONS

1. **Karin B.R.**, Arellano S., Wang L., Walzer K., Pomerantz A., Vasquez J.M., Chatla K., Sudmant P.H., Bach B.H., Smith L.L., McGuire J.A. MtGenome for the cost of a gene: Long-amplicon PacBio and Nanopore sequencing of hundreds of full mitochondrial genomes (*BMC Genomics*, *In Press*)
2. Davis H.R., Nashriq I., Woytek K.S., Wikramanayake S.A., Bauer A.M., **Karin B.R.**, Brennan I.G., Iskandar D.T., Das I. **2023**. Genomic investigation into Bornean geckos (Gekkonidae: *Cyrtodactylus*) highlights need for taxonomic reevaluation. *Zoologica Scripta* 00, 1–15. <https://doi.org/10.1111/zsc.12575>.
3. Slavenko A., Allison A., Austin C.C., Bauer A.M., Brown R.M., Fisher R.N., Ineich I., Iova B., **Karin B.R.**, Kraus F., Mecke S., Meiri S., Morrison C., Oliver P.M., O'Shea M., Richmond J.Q., Shea G.M., Tallwin O.J.S., Chapple D.G. **2023** Skinks of Oceania, New Guinea, and Eastern Wallacea: an underexplored biodiversity hotspot. *Pacific Conservation Biology* <https://doi.org/10.1071/PC22034>
4. Reilly S. B., **Karin B.R.**, Stubbs A.L., Arida E., Arifin U., Kaiser H., Bi K., Hamidy A., Iskandar D.T., McGuire J.A. **2022**. The “spin-cycle species pump”: Geodynamic processes drive a cryptic radiation in Southern Wallacean forest skinks (Genus *Sphenomorphus*). *Evolution* 10.1111/evo.14592.
5. Reilly S. B., Arifin U., Stubbs A.L., **Karin B.R.**, Kaiser H., Frederick J., Arida E., Iskandar D.T., McGuire J.A. **2022**. Phylogenetic relationships of southern Wallacean ranid frogs (Anura: Ranidae: Hylarana) *Zootaxa* 5150(4):591–599.
6. McDonald P.J., Brown R.M., Kraus F., Bowles P., Arifin U., Eliades S.J., Fisher R.N., Gaulke M., Grismer L.L., Ineich I., **Karin B.R.**, Menses C.G., Richards S.J., Sanguila M.B., Siler C.D., Oliver P.M. **2022**. Cryptic extinction risk in a western Pacific lizard radiation. *Biodiversity and Conservation* 31:2045–2062.
7. Das I. Pui Y.M., Shabrani A., **Karin B.R.**, Wahab M.P. **2021**. Reptiles. *In: Life from Headwater to the Coast: Pelagus National Park: Biodiversity Above the Rapids*. Tuen A.A., Das I., Ping K.L.S., & Mohd-Azlan J. (Eds.) Natural History Publications (Borneo) Sdn Bhd, Kota Kinabalu, pp. 51–56.
8. Reilly S.B., Stubbs A.L., Arida A., **Karin B.R.**, Arifin U., Kaiser H., Bi K., Iskandar D.T., McGuire J.A. **2021**. Phylogenomic analysis reveals dispersal-driven speciation and divergence with gene flow in Lesser Sunda flying lizards (genus *Draco*). *Systematic Biology* 71(1):221–241.
9. **Karin B.R.**, Oliver P.M., Stubbs A.L., Arifin U., Iskandar D.T., Arida E., Oong Z., McGuire J., Kraus F., Fujita M., Ineich I., Ota H., Hathaway S. A., Fisher R.N. **2021**. Who's your daddy? On the identity and

- distribution of the paternal hybrid ancestor of the parthenogenetic gecko *Lepidodactylus lugubris* (Reptilia: Squamata: Gekkonidae). *Zootaxa* 4999(1):87–100
10. Davis H.R., Das I., Leaché A.D., **Karin B.R.**, Brennan I.G., Jackman T.R., Nashriq I., Chan K.O., Bauer M. **2021**. Genetically diverse yet morphologically conserved: Hidden diversity revealed among Bornean geckos (Gekkonidae: *Cyrtodactylus*). *Journal of Zoological Systematics and Evolutionary Research* 59(5):1113–1135.
 11. Chapple D.G., Roll U., Böhm M., et al. **2021**. Conservation status of the world's skinks (Scincidae): taxonomic and geographic patterns in extinction risk. *Biological Conservation* 257(2021):109101.
 12. Reilly S.B., Stubbs A.L., **Karin B.R.**, Arifin U., Arida E., Iskandar D.T., McGuire J.A. **2021**. Genetic divergence of the Sunda ratsnake (*Coelognathus subradiatus*) across the Lesser Sunda Islands (Squamata: Colubridae). *Amphibia-Reptilia* 42(2), 269-273.
 13. Das I., Pui Y.M., Shabrani A., **Karin B.R.**, Wahab M.P. Reptiles of Pelagus National Park (Book Chapter). *In Press (Natural History Publications (Borneo) Sdn Bhd, Kota Kinabalu)*.
 14. Reilly S.B., Stubbs A.L., Arida E., Arifin U., Bloch L., Hamidy A., Harmon K., Hykin S., **Karin B.R.**, Ramadan G., Iskandar D.T., McGuire J.A. **2020**. New island records for anurans and squamates from the Lesser Sundas Archipelago. *Herpetological Review* 51(4): 785–789.
 15. **Karin B.R.**, Gamble T., Jackman T. **2020**. Rapidly Evolving Long Exon Capture: A new sequence capture dataset for phylogenomics in amniotes. *Molecular Biology and Evolution* 37(3):904–922.
 16. **Karin B.R.**, Stubbs A.L., Arifin U., Iskandar D.T., Arida E., Austin C.C., McGuire J.A. **2020**. Crossing Lydekker's Line: Northern Water Dragons (*Tropicagama temporalis*) colonized the Mollucan Islands of Indonesia from New Guinea. *Herpetologica* 76(3):344–350.
 17. Oliver P., Brown R.M., **Karin B.R.**, Grismer L.L. **2020**. Mountain endemism in Malesian geckos: Are biotic interactions driving lizards up hills? *Israel Journal of Ecology and Evolution* 20191089.
 18. Davis H.R., Chan K.O., Das I., Brennan G., **Karin B.R.**, Jackman T.R., Brown R.M., Iskandar D.T., Nashriq I., Grismer L.L., Bauer A.M. **2020**. Multilocus phylogeny of Bornean Bent-Toed Geckos (Gekkonidae: *Cyrtodactylus*) reveals hidden diversity, taxonomic disarray, and novel biogeographic patterns. *Molecular Phylogenetics and Evolution* 106785.
 19. Blom M.P.K., Matzke N.J., Bragg J.G., Arida E., Austin C.C., Backlin A., Carretero M.A., Fisher R.N., Glaw F., Hathaway S., Iskandar D.T., McGuire J.A., **Karin B.R.**, Reilly S.B., Rittmeyer E.N., Rocha S., Sanchez M., Stubbs A.L., Vences M., Moritz C. **2019**. Habitat preference modulates trans-oceanic dispersal in a terrestrial vertebrate. *Proceedings of the Royal Society B: Biological Sciences* 286(1904):20182575.
 20. Reilly S.B., Stubbs A.L., **Karin B.R.**, Arida A., Iskandar D.T., McGuire J.A. **2019**. Recent and rapid colonization of the Lesser Sundas Archipelago from adjacent Sundaland by seven amphibian and reptile species. *Zoologica Scripta* 46(4):757–769.
 21. Grismer L.L., Dzukaflly Z., Muin M.A., Quah E.S.H., **Karin B.R.**, Anuar S, Freitas E.S. **2019**. A new skink of the genus *Subdoluseps* (Hardwicke & Gray, 1828) from Peninsular Malaysia. *Zootaxa* 4609(2):358–372.
 22. Reilly S.B., Stubbs A.L., **Karin B.R.**, Bi K., Arida A., Iskandar D.T., McGuire J.A. **2019**. Leap-frog dispersal and mitochondrial introgression: Phylogenomics and biogeography of *Limnonectes* fanged frogs in the Lesser Sundas Archipelago of Wallacea. *Journal of Biogeography* 46:757–769.
 23. **Karin B.R.**, Cicero C.C., Koo M.S., Bowie R.C.K. **2018**. The role of history and ecology as drivers of song divergence in Bell's and Sagebrush sparrows (*Artemisospiza*, Aves: Passerellidae). *Biological Journal of the Linnean Society* bly090.
 24. **Karin B.R.**, Freitas E.S., Shonleben S., Grismer L.L., Bauer A.M., Das I. **2018**. Undescribed diversity in an urban rainforest: A new species of *Lygosoma* (Squamata: Scincidae) from western Sarawak, Malaysia (Borneo). *Zootaxa* 4370(4):345–362.

25. **Karin B.R.***, Stubbs A.L.*, Arifin U., Bloch M., Ramadhan G., Iskandar D.T., Arida E., Reilly S.B., Kusnadi A., McGuire J.A. **2018**. The herpetofauna of the Kei Islands (Maluku, Indonesia): Comprehensive report on new and historical collections, biogeographic patterns, conservation concerns, and an annotated checklist of species from Kei Kecil, Kei Besar, Tam, and Kur. *Raffles Bulletin of Zoology* 66:704–738.
26. Stubbs, A.L.*, **Karin B.R.***, Arifin U., Iskandar D.T., Arida E., Reilly S.B., Block L.M., McGuire J.A. **2017**. A new species of *Lepidodactylus* (Squamata: Gekkonidae) from the Kei Islands, Maluku, Indonesia. *Zootaxa* 4350(1):91–105.
27. **Karin B.R.**, Das I., Jackman T., Bauer A.M. **2017**. Ancient divergence time estimates in *Eutropis rugifera* support the existence of Pleistocene barriers on the exposed Sunda Shelf. *PeerJ* 5:e3762.
28. Das I., Pui Y.M., Shabrani A., **Karin B.R.**, Breuer H. **2017**. Reptiles. In: *Gunung Penrissen: The roof of western Borneo*. Mohd-Azlan J., Tuen A.A. & Das I. (Eds.) Natural History Publications (Borneo) Sdn Bhd, Kota Kinabalu, pp. 109–119.
29. Pui Y.M., **Karin B.R.**, Bauer A.M., Das I. **2017**. A new species of *Tropidophorus* Duméril & Bibron, 1839 (Squamata: Sauria: Scincidae) from Sarawak, East Malaysia (Borneo). *Zootaxa* 4258(6):539–550.
30. **Karin B.R.**, Metallinou M., Weinell J.L., Jackman T.R., Bauer A.M. **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.
31. Metallinou M., Weinell J.L., **Karin B.R.**, Conradie W., Wagner P., Schmitz A., Jackman T.R., Bauer A.M. **2016**. A single origin of extreme matrotrophy in African mabuyine skinks. *Biology Letters* 12: 20160430
32. **Karin B.R.**, Das I., Bauer A.M. **2016**. Two new species of diminutive leaf-litter skinks (Squamata: Scincidae: *Tytthoscincus*) from Gunung Penrissen, Sarawak, Malaysia (northern Borneo). *Zootaxa* 4093(3):407–423.
33. **Karin B.R.**, Stubbs A.L., Arifin U. **2013**. *Limnonectes grunniens*. Saline Water Tolerance. *Herpetological Review* 44(4):656.

* **Co-First Author**

PUBLICATIONS (IN REVIEW OR REVISION)

34. **Karin B.R.**, Lough-Stevens M., Lin T.E., Reilly S.B., Barley A.J., Das I., Iskandar D.T., Arida E., Jackman T.R., McGuire J.A., Bauer A.M. The natural and human-mediated expansion of a human-commensal lizard into the fringes of Southeast Asia. (*In Review, Biological Invasions*)
35. **Karin B.R.**, Krone I.W, Frederick J.H., Hamidy A., Laksono T.W., Amini S.S., Arida E., Arifin U., Bach B.H., Bos C., Jennings C., Riyanto A., Scarpetta S., Stubbs A.L., McGuire J.A. Results of a comprehensive herpetofaunal survey of Gunung Galang (Gunung Dako Nature Reserve), Sulawesi, Indonesia. (*Nearly In Review, PeerJ*)
36. Reilly S.B., Stubbs A.L., **Karin B.R.**, Arida A., Arifin U., Amidy A., Kaiser H., Bi K., Riyanto A., Iskandar D.T., McGuire J.A. Bewildering biogeography: Waves of dispersal and diversification across southern Wallacea by bent-toed geckos (Genus: *Cyrtodactylus*). (*In Review, Molecular Phylogenetic and Evolution*)

CONTRIBUTED ORAL PRESENTATIONS

- Joint Meeting of Ichthyologists and Herpetologists** - Spokane, WA **July 2022**
- Karin B.R., McGuire J.M. Cost-effective Long Amplicon Sequencing of Hundreds of Full Mitochondrial Genomes Reveals an Incredible Radiation of Sulawesi Skinks (*Sphenomorphus* and *Tytthoscincus*)
- Genomic Social Hour** - California Academy of Sciences virtual series **April 2020**
- Karin B.R., Gamble T., Jackman T.R. Rapidly Evolving Long Exon Capture: A new sequence capture dataset for phylogenomics in amniotes.
- Southeast Asia Gateway of Evolution** - Bogor, Indonesia **2017**

- Karin B.R., Das I., Jackman T.R., Bauer A.M. Comparative phylogeography of three lizards of the genus *Eutropis* (Squamata: Scincidae) on Borneo. **Evolution** - Portland, OR **2017**
- Karin B.R., Gamble T., Jackman T.R. Rapidly Evolving Long Exon Capture: A new sequence capture dataset for phylogenomics in amniotes. **Society for the Study of Amphibians and Reptiles** - Lawrence, KS **2015**
- Karin B.R., Stubbs A.L., and McGuire J.A. Comparative phylogeography of three species of *Eutropis* (Squamata:Scincidae) on Borneo. **World Congress of Herpetology** - Vancouver, BC **2012**
- Karin B.R., Stubbs A.L., and McGuire J.A. Comparative biogeography of three lizard genera in Indonesia: *Lophognathus*, *Lamprolepis*, and *Cyrtodactylus*. **North American Ornithological Conference** - Vancouver, BC **2012**
- Cicero, C.C., Karin B.R., Bowie, R.C.K. Phylogeny vs. Ecology in the Evolution of Songs in Sage Sparrows

INVITED RESEARCH SEMINARS

- **Herpetology Group Seminar, Museum of Vertebrate Zoology** - UC Berkeley **2022**
Karin B.R. Sulawesi's Surplus of Sphenomorphine Skinks
- **Biogeography and Field Work in the Kei Islands, Indonesia** - NCB Leiden **March 2021**
Karin B.R., Stubbs A.L.
- **Herpetology Group Seminar, Museum of Vertebrate Zoology** - UC Berkeley **2018**
Karin B.R., Stubbs A.L., Arifin U., Bloch M., Ramadhan G., Iskandar D.T., Arida E., Reilly S.B., Kusnadi A., McGuire J.A. Herps of the Kei Islands: 150 years of collections and still more to find.
- **Herpetology Group Seminar, Museum of Vertebrate Zoology** - UC Berkeley **2012**
Karin B.R., Stubbs A.L. Biogeography of Maluku Province, Indonesia

INVITED PUBLIC SEMINARS

- **Black Pine Circle School** - Berkeley, CA **2017**
• Career Day talk to elementary school students on science and animals.
- **Los Gatos High School** - Los Gatos, CA **2013**
• Lecture to high school biology class on research, herpetology, and genetics.
- **Panel for majors in Biological Sciences - L&S1** - UC Berkeley **2012**
• Chosen to represent the Integrative Biology major.

RESEARCH ASSISTANTSHIPS

- **Avian Phylogenomics** - Prof. Rauri Bowie **Summer and Fall, 2020**

FELLOWSHIPS

- **Philomathia Fellowship** - UC Berkeley **2021**
- **Annie M. Alexander Fellowship** - Museum of Vertebrate Zoology **2019**
- **Berkeley Fellowship** - UC Berkeley **2016–2019**
- **Biology Department Academic Year Graduate Fellowship** - Villanova University **2015**
- **Biology Department Summer Research Fellowship** - Villanova University **2015**
- **Biology Department Summer Research Fellowship** - Villanova University **2014**
- **Summer Undergraduate Research Fellowship** - UC Berkeley **2011**

GRANTS

- **Summer Research Funds** - Museum of Vertebrate Zoology **2022**
- **Summer Research Funds** - Department of Integrative Biology **2022**

- **SMRT sequencing grant** - Pacific Biosciences 2021
- **Summer Research Funds** - Museum of Vertebrate Zoology 2020
- **Summer Research Funds** - Museum of Vertebrate Zoology 2019
- **Summer Research Funds** - Museum of Vertebrate Zoology 2018
- **Summer Research Funds** - Department of Integrative Biology 2018
- **GRAC Research Funds** - Department of Integrative Biology 2018
- **Summer Research Funds** - Museum of Vertebrate Zoology 2017
- **Young Explorers Grant** - National Geographic Society 2016
- **Graduate Summer Research Award** - Villanova University 2014

HONORS AND AWARDS

- **Outstanding GSI Award** - UC Berkeley 2021
- **Certificate of Merit** - Plumas National Forest 2012
- **Highest Honors in Integrative Biology** - UC Berkeley 2012
- **Distinction in General Scholarship** - UC Berkeley 2012

PEER REVIEWS

- **Journal of Herpetology** — 1 review 2021–present
- **Molecular Biology and Evolution** — 1 review 2020–present
- **Herpetological Monographs** — 1 review 2019–present
- **PLoS One** — 2 reviews 2018–present
- **Molecular Phylogenetics and Evolution** — 3 reviews 2017–present
- **PeerJ** — 1 review 2017–present
- **Herpetologica** — 3 reviews 2016–present
- **Zootaxa** — 8 reviews 2014–present

SERVICE

- **MVZ DEI Working Group – Affiliated Students** 2020–Present
- **MVZ DEI Working Group – Workshops and Training** 2020–Present
- **IUCN Skink Specialist Group** 2019–present
- **IUCN *Lepidodactylus* assessment** December 2020

SOCIETY MEMBERSHIP

- **Society for the Study of Evolution** 2016–present
- **Society for the Study of Amphibians and Reptiles** 2014–present

WORKSHOPS TAUGHT

- **Field Genomics** - Short course for primarily first generation undergrads. Field collections, Oxford Nanopore sequencing, and bioinformatics with the goal of preparing them for research lab positions. 2019 and 2021
- **R Workshop** - 1 week introductory course for Integrative Biology graduate students. Spring 2017

WORKSHOPS AND TRAINING

- **Bring out the Best in your Undergraduate Researchers** - UC Berkeley Berkeley, CA 2020
- NSF-funded workshop on undergrad research mentorship
- **Trees in the Desert** - University of Arizona Tucson, AZ
- NSF-funded workshop on building ultra-large phylogenetic trees 12-14 April, 2019

- Python Workshop - Computational Genomics Resource Laboratory** - UC Berkeley **Berkeley, CA**
 • Introduction to programming with Python. **2015**
- Lizard Thermal Physiology Training** - UC Santa Cruz **Santa Cruz, CA**
 • 1 week learning thermal physiology methods and protocols using *Uta stansburiana*. **2014**

MENTORING

- Allisun Whitshire** - UC Berkeley undergrad **2021–Present**
Kayla Walzer - UC Berkeley undergrad **2020–Present**
Anya Prasad - UC Berkeley undergrad **2020–Present**
Selene Arellano - UC Berkeley undergrad **2019–Present**
Laura Wang - UC Berkeley undergrad **2019–Present**
Collin Bos - UC Berkeley undergrad **2019–Present**
Andrew Cho - UC Berkeley undergrad **2017–2018**
Zheng Oong - UC Berkeley undergrad **2016–2017**

GRADUATE STUDENT INSTRUCTOR COURSES

- IB135L Practical Genomics** - UC Berkeley **Fall 2022**
IB175L Herpetology - UC Berkeley **Spring 2022**
IB104LF Natural History of the Vertebrates - UC Berkeley **Spring 2021**
IB175L Herpetology - UC Berkeley **Spring 2020**
IB140 Human Reproduction - UC Berkeley **Spring 2017**
IB144 Animal Behavior - UC Berkeley **Fall 2016**
BIO4305 Evolution - Villanova University **Spring 2015**
BIO3455 Histology - Villanova University **Spring 2015**
BIO2106 General Biology II - Villanova University **Fall 2013, Spring 2014**

EMPLOYMENT HISTORY

- Amphibian Field Technician** - UC Santa Barbara **Sierra Nevada Mountains, CA**
 • Assisted Dr. Roland Knapp with study of *Bd* in *Rana sierrae*. **2016**
- Tutor** - TutorSync **Oakland, CA**
 • Tutoring High School students in Science and Math. **2015**
- Biological Sciences Technician** - Plumas National Forest **Oroville, CA**
 • Amphibian Surveys, Stream Condition Inventory protocol, fish electroshocking surveys. **2012**
- Biological Sciences Technician** - United States Department of Agriculture **Albany, CA**
 • Assisted Dr. William Vensel in lab research. Effects of environment on wheat flour quality. **2010–2011**

OTHER TRAINING

- Level I Avalanche, Level 2 Avalanche** - College of the Siskiyous **Weed, CA**
 • Training in snow travel and avalanche recognition and safety. Level I: 24 hours; Level II: 32 hours. **2012**
- National Outdoor Leadership School (NOLS)** **Wind River Range, WY**
 • 6 Credit Hours: Environmental Ethics, Skills Practicum, Risk Assessment. **2009**