

ARYEH HERSHEL MILLER

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RESEARCH AND ACADEMIC APPOINTMENTS

Research Fellow, Smithsonian Institution, National Museum of Natural History, Department of Vertebrate Zoology (Advisor: Kevin de Queiroz) | August 2018 – Present

Curatorial Assistant, Zoology Collection, University of North Carolina Asheville | August 2017 – May 2019

Undergraduate Research, Reynolds Lab, University of North Carolina Asheville | August 2016 – May 2020

Research Intern, Smithsonian Institution, National Museum of Natural History, Department of Vertebrate Zoology, Division of Amphibians and Reptiles, Washington, D.C. | July 2015 – August 2018

EDUCATION

Ph.D., Evolution, Ecology and Population Biology (in progress) | Washington University in St. Louis (Advisor: Jonathan B. Losos)

B.S., Biology, 2020 | University of North Carolina at Asheville (Honors College) (Research and Academic Advisor: R. Graham Reynolds)

FUNDING AWARDS (\$21,300 USD)

Society for Systematic Biology Workshop Grant (\$500) | January 2020

UNC Asheville Honors Program Great Ideas Grant (\$200) | October 2019

Iguana Specialist Group Travel Award (\$750) | July 2019

Smithsonian Institution Global Genome Initiative Award, Principal Investigator (\$15,000, with R. Graham Reynolds and Kevin de Queiroz) | August 2018

UNC Asheville Undergraduate Travel Grant (\$1,900) | May 2018, July 2018, September 2019, January 2020

UNC Asheville Undergraduate Research Summer Grant (\$2,950) | May 2017, May 2019

HONORS, FELLOWSHIPS, AND SCHOLARSHIPS

University Research Scholar, UNC Asheville | 2020

Distinction in Biology, UNC Asheville | 2020

Bernhardt-Perry Award for Undergraduate Research, UNC Asheville | 2020

National Science Foundation Graduate Research Fellowship Program Honorable Mention | 2020

Thomas W. Fisher Conservation & Environmental Studies Scholar | May 2016

The International Herpetological Symposium Junior Herpetologist Award | May 2015

Lazarus Leadership Fellow | January 2015

PUBLICATIONS**IN REVIEW/ IN REVISION:**

Reynolds, R.G., **A.H. Miller**, S.A. Pasachnik, C.R. Knapp, M.E. Welch, G. Colisimo, G.P. Gerber, B. Drawert, and J.B. Iverson. Phylogenomics and Historical Biogeography of West Indian Rock Iguanas (genus *Cyclura*). *In review*

Miller, A.H., and Stroud, J.T. Novel Tests of the Key Innovation Hypothesis: Adhesive Toepads in Arboreal Lizards. *In revision*

Reynolds, R.G., **A.H. Miller**, A. Ríos-Franceschi, C. Huffine, J. Fredette, N.F. Angeli, S.I. Vega-Castillo, L.J. Revell, and A.R. Puente-Rolón. Molecular phylogeny of Puerto Rico Bank dwarf geckos (Squamata: Sphaerodactylidae: *Sphaerodactylus*) with redescription of *S. macrolepis*. *In revision*

Miller, A.H., H.N. Ngo, H. Quoc, P.Q. Tien, H.R., Davis, and R.G., Reynolds. *Protobothrops mucrosquamatus* (Brown Spotted Pitviper). Egg-guarding. *Herpetological Review*. *In press*

Miller, A.H., G.R. Zug, G.O.U. Wogan, J.L. Lee, and D.G. Mulcahy. Phylogeny, Diversity, and Distribution of *Micryletta* (Anura: Microhylidae) in Myanmar. *Ichthyology & Herpetology*. *In press*

PUBLISHED:

Miller, A.H., H.R. Davis, Q. Do, M. Anh, C.T. Pham, T. Ziegler, J. L. Lee, K. de Queiroz, R.G. Reynolds, T.Q. Nguyen. Discovery of a New Species of Enigmatic Odd-Scaled Snake (Serpentes: Xenodermidae: *Achalinus*) from Ha Giang Province, Vietnam. *Copeia* 108: 796-808.

Freitas, E. S., **Miller, A. H.**, Reynolds, R. G., & Siler, C. D. (2020). A taxonomic conundrum: Characterizing a cryptic radiation of Asian gracile skinks (Squamata: Scincidae: *Riopa*) in Myanmar. *Molecular Phylogenetics and Evolution*, 146, 106754.

Lee, J. L., **Miller, A.H.**, Zug, G.R., & Mulcahy, D.G. (2019). The discovery of Rock Geckos *Cnemaspis* Strauch 1887 (Squamata, Gekkonidae) in the Tanintharyi Region, Myanmar with the description of two new species. *Zootaxa*, 4661(1), 40-64.

Miller, A.H., Jackson, A., van den Burg, T., Knapp, C.R., Welch, M.E., & Reynolds, R.G. (2019). The complete mitochondrial genome of the critically endangered Lesser Antillean iguana (*Iguana delicatissima*; Squamata: Iguanidae). *Mitochondrial DNA Part B*, 4:2, 2479:2481.

Reynolds, R. G., **Miller, A.H.**, & Puente-Rolón, A.R. *Chilabothrus schwartzi*. *In press*. *The IUCN Red List of Threatened Species*.

Mulcahy, D.G., Lee, J.L., **Miller, A.H.**, Chand, M., Thura, M.K., & Zug, G.R. (2018). Filling the BINs of life: An amphibian and reptile inventory survey of the Tanintharyi (Tenasserim) Region of Myanmar, with DNA barcode data. *Zookeys*, (757), 85.

Lee, J. L., **Miller, A.H.**, Connette, G.M., Oo, K.S., Zug, G.R., & Mulcahy, D.G. (2018). First record of the Malaysian Bridle Snake *Dryocalamus subannulatus* (Dumeril, Bibron & Dumeril, 1854) in Myanmar (Reptilia, Serpentes, Colubridae). *Check List*, 14(2), 341–345.

Lee, J. L., Vogel, G., **Miller, A. H.**, & Zug, G. R. (2018). Rediscovery of *Xenochrophis bellulus* (Stoliczka, 1871) from Myanmar (Serpentes: Natricinae) with comments on its taxonomic status. *Proceedings of the Biological Society of Washington*, 131(1), 19–35.

- Mulcahy D.G., Lee J.L., **Miller A.H.**, & Zug G.R. (2017). Troublesome Trimes: Potential cryptic speciation of the *Trimeresurus (Popeia) popieorum* complex (Serpentes: Crotalidae) around the Isthmus of Kra (Myanmar and Thailand). *Zootaxa*, 4347: 301–315.
- Miller, A.H.**, & Zug, G.R. (2016). An enigmatic *Lygosoma* (Reptilia: Squamata: Scincidae) from northern Myanmar. *Herpetological Review*, 47(3): 373–374.
- Miller, A.H.**, & Zug, G.R. (2016). Morphology and biology of the Asian Common Mockviper, *Psammodynastes pulverulentus* (Boie, 1827) (Serpentes: Lamprophiidae): a focus on Burmese populations. *Proceedings of the Biological Society of Washington*, 129(1), 173–194.

CONFERENCE PRESENTATIONS

- Miller, A.H.**, & Reynolds, R.G. (2020). Phylogenomic Bayesian species delimitation in West Indian iguanas (*Cyclura*). *Society for Systematic Biology Standalone Meeting [Lighting Talk]*.
- Miller, A.H.**, & Reynolds, R.G. (2019). Phylogenomic Bayesian species delimitation in West Indian iguanas (*Cyclura*). *IUCN Iguana Specialist Group Meeting, Roatán, Honduras [Oral Presentation]*.
- Miller, A.H.**, & Reynolds, R.G. (2019). Phylogenomic Bayesian species delimitation in West Indian iguanas (*Cyclura*). *University of North Carolina Asheville Undergraduate Research Symposium [Oral Presentation]*.
- Miller, A.H.**, & Reynolds, R.G. (2018). Mitogenomics of West Indian iguanas (*Cyclura*). *University of North Carolina Asheville Undergraduate Research Symposium [Oral Presentation]*.
- Miller, A.H.**, & Reynolds, R.G. (2018). Elucidating cryptic diversity in Burmese Supple Skinks (*Lygosoma*). *Joint Meeting of Ichthyologists and Herpetologists, Rochester, NY [Poster]*.
- Miller, A.H.**, & Reynolds, R.G. (2018). Elucidating cryptic diversity in Burmese Supple Skinks (*Lygosoma*). *3rd Annual North Carolina Congress of Herpetology, Asheville, NC [Poster]*.
- Huffine, C.A., **Miller, A.H.**, & Reynolds, R.G. (2018). A new species of dwarf gecko (*Sphaerodactylus*) from the Virgin Islands. *3rd Annual North Carolina Congress of Herpetology, Asheville, NC [Poster]*.
- Miller, A.H.**, & Reynolds, R.G. (2018). Elucidating cryptic diversity in Burmese *Lygosoma* skinks via integrative taxonomy. *University of North Carolina Asheville Undergraduate Research Symposium [Oral Presentation]*.
- Miller, A.H.**, & Reynolds, R.G. (2017). A new species of Asian Scincidae from Kachin State, Myanmar. *University of North Carolina Asheville Undergraduate Research Symposium [Poster]*.

FIELDWORK EXPERIENCE

- Vietnam, May – July 2019. Amphibian and reptile surveys in karstic regions of northern Vietnam. With Truong Q. Nguyen (IEBR), Hayden R. Davis (University of Washington), and R. Graham Reynolds (UNCA).
- Turks and Caicos Islands, January 2019. Worked with R. Graham Reynolds (UNCA) radio tracking Turks Island boas (*Chilabothrus chrysogaster*).
- U.S. Virgin Islands, December 2018. Worked with R. Graham Reynolds (UNCA) and the NC Zoo capturing and processing endangered VI Boas (*Chilabothrus granti*).
- Costa Rica, June – July 2014. Tropical herpetology course led by Thomas C. LaDuke at El Zota Biological Field Station.
- United States, ongoing. General collecting and surveying in Maryland, Virginia, and North Carolina.

OTHER RELEVANT EXPERIENCE

- Experienced with phylogenetic analyses, statistical analyses, GIS, and figure design in R and RStudio®, Python, and Julia.
- Experienced with laboratory genetics, including DNA extraction manual kits and the AutoGen® system, PCR, clean-up, gel electrophoresis, Sanger sequencing, and DNA quantitation with Qubit® 3.0.

Experienced with genetic data analysis, including Sanger and next-gen sequence data in programs such as Geneious®, R, RevBayes, Python, Julia, MEGA, BEAST, BPP, BAMM, etc.

Experienced with scripting in shell and command prompt; learning to push intensive projects to off-site servers like Jetstream.

COMMUNITY OUTREACH AND MEMBERSHIPS

Volunteer, Christine W. Avery Learning Center | January 2020 – March 2020

Member, The Order of Pisgah | March 2019 – Present

Volunteer, Pisgah View Learning Center | January 2019 – May 2019

President, University of North Carolina Asheville Biology Club | August 2018 – August 2019

Member, American Society of Ichthyologists and Herpetologists | March 2018 – Present

Member, North Carolina Herpetological Society | November 2016 – Present

Inventory Leader, National Geographic BioBlitz (Washington D.C.) | May 2016

Member, Virginia Herpetological Society | April 2013 – Present

Volunteer, Audubon Naturalist Society at Woodend (Chevy Chase, MD) | May 2012- July 2015

PROFESSIONAL SERVICE

Reviewer: *Asian Herpetological Research*, *Biological Invasions*, *Checklist*, *Ecology and Evolution*, *Journal of Herpetology*, *Israel Journal of Ecology and Evolution*

REFERENCES

1. Dr. R. Graham Reynolds, Assistant Professor
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2. Dr. George R. Zug, Curator Emeritus
Division of Amphibians and Reptiles, Department of Vertebrate Zoology
National Museum of Natural History, Smithsonian Institution
ZUGG@si.edu
202-633-0738 (NHB office)
3. Dr. Daniel G. Mulcahy, Molecular Laboratory Technician
Global Genome Initiative
National Museum of Natural History, Smithsonian Institution
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