

ZACHARY RODRIGUEZ | zrodri3@LSU.edu | zbr.rodriguez.com

Ph.D. Candidate, Museum of Natural Science, LSU | Curriculum Vitae | March 2020

EDUCATION

- 2014-present **Ph.D. Candidate, Biology**, Louisiana State University (LSU), Baton Rouge, LA
Advisor: Dr. Christopher Austin
- 2013 **B.S., Biology**, Clarkson University (CU), Potsdam, NY
Advisor: Dr. Jim Schulte

PROFESSIONAL EXPERIENCE

- 2014-present **Graduate Research Fellow**, LSU. Investigating the evolutionary history and genomics of unique traits in New Guinea lizards. *Advisor:* Dr. Christopher Austin.
- 2020 Teaching Assistant in Herpetology, LSU. Herpetology.
- 2019 **Teaching Assistant in Biology**, LSU. Biology I Lab
- 2013 **Research Assistant in Biology**, CU. Notch receptors regulate proliferation of absorptive and secretory cells in zebrafish intestinal development. *Advisor:* Dr. Kenneth Wallace.
- 2013 **Teaching Assistant in Biology**, CU. Biology I: Inheritance, Evolution, & Diversity.
- 2013 **Research Assistant in Genetics**, University of Texas at Arlington. Phylogeography of the Southeast Asian vine snakes (*Genus: Ahaetulla*). *Advisor:* Dr. Todd Castoe.
- 2012 **Research Assistant in Biology**, CU. Alterations in *Danio rerio* intestinal motility from the ghrelin hormone. *Advisor:* Dr. Kenneth Wallace.
- 2012 **McNair Research Scholar**, CU. Expression patterns of the 5HT-4 receptors in zebrafish embryos. *Advisor:* Dr. Kenneth Wallace.

COURSEWORK AND WORKSHOPS

Workshops Attended

- 2017 **Computational Workshop in Applied Phylogenetics**, Bodega Bay, CA. *Advisor:* Wainwright et al.
- 2016 **Phylogenetic Comparative Methods in R Workshop**, San Juan, Puerto Rico. *Advisor:* Revell LJ et al.
- 2015 **LA Kretz Workshop in Computational Conservation Genomics**, LA Kretz Center for Conservation Science, University of California-Los Angeles. *Advisor:* Shaffer SB et al.

Relevant Coursework

- 2015 **Speciation**, LSU. *Advisor:* Hellberg ME.
- 2015 **Systematics**, LSU. *Advisor:* Sheldon F
- 2015 **Computational Phylogenetics**, LSU. *Advisor:* Brown JM
- 2014 **Cladistics**, LSU. *Advisor:* Chakrabarty P
- 2014 **Molecular Population Genetics**, LSU. *Advisor:* Brumfield RT
- 2014 **Molecular Evolution**, LSU. *Advisor:* Hellberg ME

FELLOWSHIPS AND GRANTS

Fellowships

- 2019-2020 **Teaching Assistantship in Biology**, LSU (\$24,000)
- 2015-2020 **NSF Graduate Research Fellowship Program**, LSU (\$102,000)
- 2014-2016 **LA-BRIDGE to Doctorate Fellowship**, LSU (\$60,000)
- 2013 **McNair Summer Research Scholar**, CU (\$3,900)
- 2012 **CSTEP Summer Research Scholar**, CU (\$3,400)

Grants/Awards

- 2016-2019 **AAAS/Science Program for Excellence in Science**, Washington D.C. (3-year membership)
- 2017 **Museum of Natural Science Outstanding Outreach Award**, LSU
- 2016 **NSF LA-BRIDGE Research Grant**, LSU (\$12,000)

2016 **Museum of Natural Science Seminar Research Award**, LSU (\$600)
2016 **LSU High Performance Computing Allocation**, LSU (280,000 CPU hours)
2013 **McNair Scholar Summer Research Grant**, CU (\$500)
2013 **CSTEP Semester Research Grant**, CU (\$500)
2013 **LSAMP Semester Research Grant**, CU (\$500)

TECHNICAL SKILLS

Operating systems: Linux, Windows, Mac OS-X, Amazon Web Services (AWS)
Programming Languages: Shell, Python, R, SQL
Phylogenomics, Population Genomics, Comparative Genomics, Biogeography
Computational: relational databases, version control, documentation, bug tracking

PUBLICATIONS AND PRESENTATIONS

Publications

Rodriguez, ZB, S. L. Perkins, and C.C. Austin. 2018. Multiple origins of green blood in New Guinea lizards. *Science Advances*.

Publications in Preparation

Rodriguez, ZB, **Broussard EM***, and Austin CC. 2020 (Manuscript in preparation). Varying evolutionary history of albumin proteins and the loss of serum albumin protein in lizards and snakes.

Rodriguez, ZB, Perkins SL, and Austin CC. 2020 (Manuscript in preparation). Comparative genomics of two lizards with toxic green blood and closely-related red-blooded relatives.

Rodriguez, ZB, Austin CC. 2020 (Manuscript in Preparation). Population genomics reveal cryptic diversity in high-elevation New Guinea lizards (genus: *Papuascincus*).

Rodriguez, ZB, Austin CC. 2020 (Manuscript in Preparation). Comparative phylogenomics reveals accelerated evolution in conserved pathways in lizards and snakes.

***EM Broussard** is an undergraduate researcher

Presentations

Rodriguez ZB. 2017. (Talk) Is it Venomous? Museum of Natural Science Special Saturdays, Baton Rouge, LA

Rodriguez ZB, Austin CC. 2016. (Talk) Green Blood: Investigating the evolutionary history of unique traits in New Guinea lizards. Joint Meeting of Herpetologists and Ichthyologists, New Orleans, LA

Rodriguez ZB, Austin CC. 2016. (Talk) Green Blood: Investigating the evolutionary history of unique traits in New Guinea lizards. The Evolution Conference, Austin, TX

Rodriguez ZB, Austin CC. 2016. (Poster) Why so Green? Investigating the evolutionary history of unique traits in New Guinea lizards. NSF LSAMP Research Symposium, Washington, D.C.

Rodriguez ZB, Castoe TA. 2013. (Talk) Phylogeography of the Southeast Asian Vine Snakes (Genus: *Ahaetulla*). McNair Research Conference, Arlington, TX

Rodriguez ZB, Wallace KN. 2013. (Talk). Expression Patterns of the 5HT-4 Receptors in *Danio rerio* Embryos. Symposium for Undergraduate Research, Potsdam, NY

Rodriguez ZB, Wallace KN. 2013. (Talk). Observing Intestinal Epithelial Stem Cells in *Danio rerio*. CSTEP National Research Conference, SUNY Binghamton, Binghamton, NY

Rodriguez ZB, Wallace KN. 2013. (Poster). Alterations in *Danio rerio* intestinal motility from the Ghrelin Hormone. McNair National Research Conference, Washington D.C.

Rodriguez ZB, Wallace KN. 2012. (Talk). Notch Receptors Regulate Proliferation of Absorptive, Secretory, and Stem Cells in *Danio rerio* Development. McNair National Research Conference, Niagara Falls Conference Center, NY

SYNERGISTIC ACTIVITIES

Professional Service

2017-2020 **Mentor** to undergraduate researcher, Austin lab, LSU (**Emilie Broussard**)

2019-2020 **Mentor** to Scotlandville Magnet High School researcher, Louisiana State University Chapter

of EnvironMentors, LSU (Shaniah Lanus)
2017-2018 **Webmaster**, BioGrads student organization, LSU
2016-2017 **President**, BioGrads student organization, LSU
2015-2016 **Seminar Coordinator** for LSU Museum of Natural Science weekly Museum Seminar, LSU
2014-2015 **Mentor** to Scotlandville Magnet High School researcher, Louisiana State University Chapter of EnvironMentors, LSU (Mallori Lee)
2012-2013 **Mentor** to three (3) undergraduate researchers, Wallace lab, CU (Eva Dodge, Remy Cholhan, Tai-Symone Rackley)
2013 **Mentor** to undergraduate Joint Admission Medical Program researcher, Castoe Lab, University of Texas at Arlington, Arlington, TX (Elizabeth La)

Public Outreach Events

2014-present **Museum Public Tour Guide**, Museum of Natural Science, LSU
2016 **Scientific Outreach**, *6th Grade Day*, Student Union, LSU
2016 **Scientific Outreach**, *LDWF Step-Outside Day*, Krotz Springs, LA
2016 **Scientific Outreach**, *LSU Fall Fest*, Parade Grounds, LSU
2016 **Scientific Outreach**, *Tiger Challenge Camp "On the Wild Side"*, Baton Rouge, LA
2015 **Scientific Outreach**, *LBC Family Fun Day*, Parker Coliseum, LSU
2015 **Scientific Outreach**, *First Free Sunday*, USS Kidd Museum, Baton Rouge, LA
2015 **Scientific Outreach**, *Step-Outside Day*, Sherburne Wildlife Management Area, Krotz Springs, LA
2015 **Invited Classroom Talk**, *High School Outreach*, invited to speak about the importance of biodiversity and conservation, Scotlandville Magnet High School, Baton Rouge, LA

PROFESSIONAL AFFILIATIONS

Society for the Study of Evolution
Society of Systematic Biologists
American Society of Ichthyologists and Herpetologists
American Association for the Advancement of Science
Tri Beta