

**Center for Computation and Technology**

Louisiana State University, Baton Rouge, LA

zrodri3@CCT.LSU.edu | [zachrodriguez.me](http://zachrodriguez.me)**EDUCATION**

|   |      |
|---|------|
| <b>PhD</b> Louisiana State University (LSU), Baton Rouge, LA            | 2020 |
| Museum of Natural Science, <i>Advisor</i> : Dr. Christopher Austin      |      |
| <b>BS</b> Clarkson University (CU), Potsdam, NY                         | 2013 |
| Department of Biological Sciences, <i>Advisor</i> : Dr. Kenneth Wallace |      |

**PROFESSIONAL EXPERIENCE**

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|--|-------------|
| <b>Postdoctoral Researcher in Computational Mental Health</b>                      | 2021 +      |
| Center for Computation and Technology, Louisiana State University, Baton Rouge, LA |             |
| <b>Research Assistant in Computational Psychopathology</b>                         | 2020        |
| Department of Psychology, Louisiana State University, Baton Rouge, LA              |             |
| <b>Graduate Research Fellow</b>  | 2014 - 2020 |
| Museum of Natural Science, Louisiana State University, Baton Rouge, LA             |             |
| <b>Research Assistant in Genetics</b>  | 2013        |
| Department of Biology, University of Texas at Arlington, Arlington, TX             |             |
| <b>Research Assistant in Developmental Biology</b>                                 | 2011 - 2013 |
| Department of Biology, Clarkson University, Potsdam, NY                            |             |

**PUBLICATIONS** | [Google Scholar Profile](#)Publications in Machine Learning and Computational Mental Health

1. Cohen, A. S., **Rodriguez, Z.B.**, Warren, K. K., Cowan, T., Masucci, M. D., Edvard Granrud, O., Holmlund, T. B., Chandler, C., Foltz, P. W., & Strauss, G. P. (2022). Natural Language Processing and Psychosis: On the Need for Comprehensive Psychometric Evaluation. *Schizophrenia Bulletin*.
2. Cowan, T., **Rodriguez, Z. B.**, Granrud, O. E., Masucci, M. D., Docherty, N. M., & Cohen, A. S. (2022). Talking about Health: A Topic Analysis of Narratives from Individuals with Schizophrenia and Other Serious Mental Illnesses. *Behavioral Sciences*, 12(8), 286.
3. Granrud, O. E., **Rodriguez, Z.**, Cowan, T., Masucci, M. D., & Cohen, A. S. (2022). Alogia and pressured speech do not fall on a continuum of speech production using objective speech technologies. *Schizophrenia Research*.
4. Holmlund, T.B., Chandler, C., Foltz, P.W., Diaz-Asper, C., Cohen, A.S., **Rodriguez, Z.B.**, Elvevåg, B. (2022). Towards a temporospatial framework for measurements of disorganization in speech using semantic vectors. *Schizophrenia Research*.
5. Foltz, P.W., Chandler, C., Diaz-Asper, C., Cohen, A.S., **Rodriguez, Z.B.**, Elvevåg, B. (2022). Reflections on the nature of measurement in language-based automated assessments of patients' mental state and cognitive function. *Schizophrenia Research*.

Publications in Bioinformatics

1. Broussard, E. M., **Rodriguez, Z. B.**, & Austin, C. C. (2022). Evolution of the albumin protein family in reptiles. *Molecular Phylogenetics and Evolution*, 169, 107435.
2. **Rodriguez, Z.B.** (2020). Evolution of Green Blood in New Guinea Lizards: Phylogenomics,

Biogeography, and Comparative Genomics. Louisiana State University and Agricultural & Mechanical College.

3. **Rodriguez, Z. B.**, Perkins, S. L., & Austin, C. C. (2018). Multiple origins of green blood in New Guinea lizards. *Science Advances*, 4(5), eaao5017.<sup>1</sup>
4. Rodriguez, ZB, Austin, CC (in prep). Comparative genomics of lizards with green blood.

## PRESENTATIONS and MEDIA APPEARANCES

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### Professional Presentations

1. **Rodriguez, Z. B.** (2022). Spill the tea: Automatic extraction of discussion topics in ambulatory patient speech with a Machine Learning Pipeline. Society for Research in Psychopathology (SRP).
2. Cohen AS, **Rodriguez ZB**, Warren KW 2022. (2022). Developing a Multimodal Digital Phenotyping Paranoia Measure. The International Society for CNS Clinical Trials and Methodology (ISCTM).
3. Cohen AS, **Rodriguez ZB** (2021). Integrating multimodal features to improve model generalization, cultural sensitivity, and interpretability in computational psychiatry and psychology. *Technology, Mind, and Society (TMS)*.
4. **Rodriguez, Z.B.** (2022) Combining Automated Video Analysis and Machine Learning to Code Facial Expressions for Serious Mental Illness. Society for Research in Psychopathology (SRP).
5. **Rodriguez ZB.** (2021). Combining Automated Video Analysis and Machine Learning to Code Facial Expressions for Serious Mental Illness. Society for Research in Psychopathology Annual Meeting. Virtual Conference.
6. **Rodriguez ZB.** (2020) Evolution of Green Blood in New Guinea Lizards: Phylogenomics, Biogeography, and Genomics. Systematics, Ecology, and Evolution Seminar Series, Baton Rouge, LA
7. **Rodriguez ZB**, Roberts JR. (2019) Travelogue: Reptiles and Amphibians of Papua New Guinea. LSU, Baton Rouge, LA
8. **Rodriguez ZB.** (2019) Evolution of Green Blood in New Guinea Lizards: Phylogenomics, Biogeography, and Genomics. LSU Biology Research Symposium, Baton Rouge, LA
9. **Rodriguez ZB**, Austin CC. (2016) Green Blood: Investigating the evolutionary history of unique traits in New Guinea lizards. Joint Meeting of Herpetologists and Ichthyologists, New Orleans, LA
10. **Rodriguez ZB**, Austin CC. (2016) Green Blood: Investigating the evolutionary history of unique traits in New Guinea lizards. The Evolution Conference, Austin, TX
11. **Rodriguez ZB**, Austin CC. (2016) Why so Green? Investigating the evolutionary history of unique traits in New Guinea lizards. NSF LSAMP Research Symposium, Washington, D.C.
12. **Rodriguez ZB**, Castoe TA. (2013) Phylogeography of the Southeast Asian Vine Snakes (Genus: *Ahaetulla*). McNair Research Conference, Arlington, TX
13. **Rodriguez ZB**, Wallace KN. (2013). Expression Patterns of the 5HT-4 Receptors in *Danio rerio* Embryos. Symposium for Undergraduate Research, Potsdam, NY
14. **Rodriguez ZB**, Wallace KN. (2013). Observing Intestinal Epithelial Stem Cells in *Danio rerio*. CSTEP National Research Conference, SUNY Binghamton, Binghamton, NY
15. **Rodriguez ZB**, Wallace KN (2013). Alterations in *Danio rerio* intestinal motility from the Ghrelin Hormone. McNair National Research Conference, Washington D.C.
16. **Rodriguez ZB**, Wallace KN. (2012). Notch Receptors Regulate Proliferation of Absorptive, Secretory, and Stem Cells in *Danio rerio* Development. McNair National Research Conference, Niagara Falls Conference Center, NY

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<sup>1</sup> Popular Press Coverage: [NPR](#), [Reuters](#), [Associated Press](#), [NPR Science](#), [The Atlantic](#), [Science News](#), [ZMR Science](#), [I Fucking Love Science \(IFLS\)](#), [LSU Experimental](#), [LSU Media Center](#), [The Pursuit](#), [The Independent](#), [Gizmodo](#)

## Public Talks

1. **Rodriguez ZB.** (2018) Special Saturdays: Costumed Critters. Museum of Natural Science Special Saturdays, Baton Rouge, LA
2. **Rodriguez ZB.** (2018) Night at the Museum: Reptile Adaptations. Museum of Natural Science Special Saturdays, Baton Rouge, LA
3. **Rodriguez ZB.** (2017) Reptiles and Amphibians at risk in Louisiana. Museum of Natural Science Special Saturdays, Baton Rouge, LA
4. **Rodriguez ZB.** (2017) Is it Venomous? Museum of Natural Science Special Saturdays, Baton Rouge, LA
5. **Rodriguez ZB.** (2016) Louisiana Biodiversity. Scotlandville Magnet High School, Baton Rouge, LA

## Media Appearances and Interviews

1. **Rodriguez ZB.** 2019. (Podcast) Zach Rodriguez – Straight out of Nature! It's Green-blooded lizards. LSU Experimental Podcast, Baton Rouge, LA
2. **Rodriguez ZB,** Austin CC. 2018. (TV Appearance) Green-blooded Lizards. WAFB 9News, Baton Rouge, LA
3. **Rodriguez ZB,** Austin CC. 2018. (Interview) These Lizards Are Full of Green Blood That Should Kill Them, by Ed Young. The Atlantic
4. **Rodriguez ZB,** Austin CC. 2018. (Interview) Green-blooded lizards pose evolutionary puzzle, by Seth Borenstein. Associated Press.
5. **Rodriguez ZB.** 2018 (Interview) These Lizards Keep Evolving Toxic Bright-Green Blood and We Don't Know Why, by Josh Davis. I Fucking Love Science (IFLS)
6. **Rodriguez ZB.** 2018 (Interview) Green Blood in lizards probably evolved four times by Susan Milius. Science News.
7. **Rodriguez ZB,** Austin CC. 2018. (Interview) Why Do Some Lizards Have Green Blood? By Nell Greenfieldboyce. Shots Health News From NPR
8. **Rodriguez ZB,** Austin CC. 2018. (Podcast) Why Do Some Lizards Have Green Blood? By Nell Greenfieldboyce. All Things Considered from NPR
9. **Rodriguez ZB.** 2016 (Interview) These Lizards bleed green by Susan Milius. Science News.

## **GRANTS, AWARDS, FELLOWSHIPS, AND SCHOLARSHIPS**

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### Fellowships and Scholarships

|   |             |
|---|-------------|
| Teaching Assistantship in Biology, LSU (\$24,000)                 | 2019 - 2020 |
| Phylogenetic Comparative Methods Workshop, San Juan, PR (\$2,500) | 2017        |
| Workshop in Applied Phylogenetics, Bodega Bay, CA (\$3,500)       | 2017        |
| NSF Graduate Research Fellowship Program, LSU (\$102,000)         | 2015 - 2020 |
| LA-BRIDGE to Doctorate Fellowship, LSU (\$60,000)                 | 2014 - 2016 |
| Conservation Genomics Workshop, Los Angeles, CA (\$4,500)         | 2015        |
| McNair Summer Research Scholar, CU (\$3,900)                      | 2013        |
| CSTEP Summer Research Scholar, CU (\$3,400)                       | 2012        |

### Grants

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|--|------------------------|
| LSU Department of Biology Research Award, LSU (\$400) x 4          | 2019, 2018, 2017, 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) | 2016                   |

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|--|------|
| McNair Scholar Summer Research Grant, CU (\$500) | 2013 |
| CSTEP Semester Research Grant, CU (\$500)        | 2013 |
| LSAMP Semester Research Grant, CU (\$500)        | 2013 |

### Awards and Accolades

|   |             |
|---|-------------|
| Southeastern Conference (SEC) Emerging Scholars Program, LSU    | 2021        |
| AAAS/Science Program for Excellence in Science, Washington D.C. | 2016 - 2019 |
| Museum of Natural Science Outstanding Outreach Award, LSU (x2)  | 2018, 2017  |

## **TECHNICAL SKILLS** | [LinkedIn Profile](#)

**Languages and Interpreters:** Python, Unix/Linux Shell Scripting, R, SQL, Matlab, pandas, ggplot  
**Data Analysis:** statistics, machine learning, natural language processing (NLP), regression, dimensionality reduction, clustering, database mining, model testing, simulation  
**Platforms:** Linux, Windows, Microsoft Azure, Amazon Web Services (Aws), Google Cloud Platform  
**Genomics & Bioinformatics:** DNA, RNA, PCR, next-generation sequencing (NGS), library preparation, gene expression, whole-genome sequencing, transcriptome sequencing, quality assessment  
**Data Management and Integrity:** ETL, archiving, backing up, version control, bug tracking, HIPPA compliance, IRB compliance, auditing  
**Communication:** data visualization, scientific writing, presenting,, mentoring, teaching, public speaking, blog contributions, social media, TV interviews, podcast interviews

## **TEACHING EXPERIENCE and MENTORSHIP**

### Teaching Experience

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|--|-------------|
| Teaching Assistant in Herpetology, Louisiana State University, Baton Rouge, LA | 2020        |
| Teaching Assistant in Genetics, Louisiana State University, Baton Rouge, LA    | 2019        |
| Teaching Assistant in Biology, Clarkson University, Potsdam, NY                | 2012 - 2013 |

### Mentorship

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|---|-------------|
| Kiara Warren <sup>2,3</sup> ; Graduate Student at LSU   | 2022 +      |
| Sahelanda Gelin <sup>3</sup> ; Graduate Student at FAMU                                       | 2021 +      |
| Ashley Zollicoffer <sup>3</sup> ; Graduate Student at UGA                                     | 2021 +      |
| Ole Granrund <sup>2,3</sup> ; Graduate Student at LSU   | 2020 +      |
| Emilie Broussard <sup>2,3</sup> ; Undergraduate Researcher at LSU                             | 2017 - 2022 |
| Shaniah Lanus <sup>3</sup> ; Scotlandville Magnet High School researcher, EnvironMentors, LSU | 2019 - 2020 |
| Mallori Lee <sup>3</sup> ; Scotlandville Magnet High School researcher, EnvironMentors, LSU   | 2014 - 2015 |
| Elizabeth La <sup>3</sup> ; Joint Admission Medical Program researcher at UTA                 | 2013        |
| Tai-Symone Rackley <sup>3</sup> , Eva Dodge, Remy Cholhan; Undergraduate Researchers at CU    | 2011 - 2013 |

## **SYNERGISTIC ACTIVITIES**

### Professional Service

|  |        |
|--|--------|
| Graduate Committee Advisor, Department of Psychology, LSU        | 2021 + |
| BioGrads Research Symposia Organizer, Department of Biology, LSU | 2018   |

<sup>2</sup> Mentorship resulted in peer-reviewed publication

<sup>3</sup> Mentorship resulted in conference presentation

|  |             |
|--|-------------|
| Webmaster, BioGrads student organization, LSU              | 2017 - 2018 |
| President, BioGrads student organization, LSU              | 2016 - 2017 |
| Weekly Seminar Coordinator, Museum of Natural Science, LSU | 2015 - 2016 |

### Public Outreach Events

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|---|-------------|
| Museum Public Tour Guide, LSU Museum of Natural Science (LSUMNS), Baton Rouge, LA                         | 2014 - 2020 |
| Science Communication, 100+ posts on Science Communication @frogriguez, Instagram                         | 2017 - 2020 |
| Scientific Outreach, <i>Night at the Museum: Reptiles and Amphibians</i> , LSUMNS                         | 2019        |
| Public Talk, <i>The Mystery of Lime-Green Lizard Blood</i> , LSU Media Center, Baton Rouge, LA            | 2018        |
| Science Communication, <i>Science That Glows at: Happy 4th of July!</i> , Baton Rouge, LA                 | 2018        |
| Science Communication, <i>Purple, Gold and... Green?</i> , LSU Media Center, Baton Rouge, LA              | 2018        |
| Workshop, <i>LA Master Naturalists of Greater Baton Rouge Workshop</i> , Baton Rouge, LA                  | 2018        |
| Scientific Outreach, <i>USFWS Wild Things</i> . Southeast Louisiana Refuges Complex, Lacombe, LA          | 2018        |
| Scientific Outreach, <i>Special Saturdays: Costumed Critters</i> , LSUMNS                                 | 2018        |
| Scientific Outreach, <i>LSU College of Science Block Party</i> , Life Sciences Building, LSU              | 2018        |
| Scientific Outreach, <i>Girls Day at the Museum</i> , LSUMNS  | 2018        |
| Scientific Outreach, <i>Core Element Hands-on-STEM Interactive Education Day</i> , Metairie, LA           | 2018        |
| Scientific Outreach, <i>Night at the Museum: Reptile Adaptations</i> , LSUMNS                             | 2018        |
| Scientific Outreach, <i>Special Saturdays: Bugs in the Atchafalaya</i> . LSUMNS                           | 2018        |
| Scientific Outreach, <i>LA STEM EXPO</i> . Patrick F. Taylor Hall, LSU                                    | 2018        |
| Scientific Outreach, <i>Core Element STEM Fest</i> , Ochsner Sport Performance Center, Metairie, LA       | 2017        |
| Scientific Outreach, <i>LSU Fall Fest</i> , Parade Grounds, LSU   | 2017        |
| Scientific Outreach, <i>LSU Solar Eclipse Event</i> , Parade Grounds, LSU                                 | 2017        |
| Workshop, <i>LA Master Naturalists of Greater Baton Rouge Workshop</i> , LSUMNS                           | 2017        |
| Scientific Outreach, <i>Special Saturdays: Is it Venomous?</i> LSUMNS                                     | 2017        |
| Scientific Outreach, <i>LDWF Step Outside Day</i> , Krotz Springs, LA                                     | 2017        |
| Scientific Outreach, <i>Earth Day</i> , BREC'S Baton Rouge Zoo, Baton Rouge, LA                           | 2017        |
| Scientific Outreach, <i>Night at the Museum: Herps</i> , LSUMNS   | 2017        |
| Workshop, <i>LA Master Naturalists of Greater Baton Rouge Workshop</i> , LSUMNS                           | 2017        |
| Scientific Outreach, <i>6<sup>th</sup> Grade Day</i> , Student Union, LSU                                 | 2017        |
| Scientific Outreach, <i>Special Saturdays: Herps at risk in Louisiana</i> , LSUMNS                        | 2017        |
| Scientific Outreach, <i>6<sup>th</sup> Grade Day</i> , Student Union, LSU                                 | 2016        |
| Scientific Outreach, <i>LDWF Step-Outside Day</i> , Krotz Springs, LA                                     | 2016        |
| Scientific Outreach, <i>LSU Fall Fest</i> , Parade Grounds, LSU   | 2016        |
| Scientific Outreach, <i>Tiger Challenge Camp "On the Wild Side"</i> , Baton Rouge, LA                     | 2016        |
| Scientific Outreach, <i>LBC Family Fun Day</i> , Parker Coliseum, LSU                                     | 2016        |
| Scientific Outreach, <i>First Free Sunday</i> , USS Kidd Museum, Baton Rouge, LA                          | 2015        |
| Scientific Outreach, <i>Step-Outside Day</i> , Sherburne Wildlife Management Area, Krotz Springs, LA      | 2015        |
| Invited Classroom Talk, <i>Louisiana Biodiversity</i> , Scotlandville Magnet High School, Baton Rouge, LA | 2015        |

## **PROFESSIONAL AFFILIATIONS**

[500 Queer](#) Contributor to [500 Queer Scientists : 500 Queer Scientists](#)<sup>4</sup>

[bio-DIVERSITY](#)<sup>5</sup>

[DiversifyEEB](#)

[DiversifyEEB Grads](#)

Society for Research in Psychopathology (SRP)

Society for Advancement of Chicanos/Hispanics and Native Americans in Science ([SACNAS](#))

500 Queer Scientists

DiversifyEEB

BIO-diversity

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

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<sup>5</sup> Contributor to [bio-DIVERSITY](#)