
EDUCATION

University of Alabama-Birmingham; May 2017 – Present

- PhD graduate student trainee, Department of Biology (Mentor: Dr. Nicole Riddle; Current GPA: 4.0)

Truman State University; August 2012 – December 2016

- Bachelor of Arts, Biology and Psychology, Cum Laude (GPA: 3.51; Major GPA: 3.78 (Biology), 3.38 (Psychology))
- Chemistry minor

HIGHLIGHTED SKILLS

Achievement in skill-related areas including:

- Efficient execution of bioinformatics workflows to analyze ChIP-Seq, RNA-Seq and whole genome sequence data using linux command line, python programming and R programming
- Accomplishments in molecular techniques including plasmid cloning and chromatin immunoprecipitation
- Strong communication demonstrated through scientific presentations as well as international and teaching experiences

AWARDS, GRANTS AND HONORS

NSF EPSCoR GRSP Fellow (Awarded May 2019)

Finalist, UAB Three Minute Thesis (3MT) Competition (October 2018)

UAB Graduate Student Government Travel Grant (Awarded October 2018)

UAB Biology Department Travel Grant (Awarded January 2018, 2019)

Blazer Graduate Research Fellow (Awarded Summer 2017)

SPEAKING ENGAGEMENTS

“The Genome and the Blob”

- Schoelz, JM and Riddle NC | UAB Graduate School “Discoveries in the Making” Seminar series

“Regulation of gene expression by *Drosophila* Heterochromatin Protein 1”

- Schoelz, JM and Riddle NC | UAB Comprehensive Cancer Center Trainee Seminar Series (September 2018)

“Promoter proximal pausing as a possible mechanism of gene regulation by HP1 paralogs”

- Schoelz, JM and Riddle NC | 59th Annual *Drosophila* Research Conference, Philadelphia, PA (April 2018)

PEER-REVIEWED PUBLICATIONS

“The *Drosophila* HP1 family is associated with active gene expression across chromatin contexts”

- Schoelz, JM, Feng, J.X. and Riddle NC (Research Article – In preparation)

“CRISPR/Cas9 Technologies in epigenetics research” *Epigenetics Methods*, First Edition

- Schoelz, JM and Riddle NC (Textbook Chapter – In review), Dr. Trygve Tollefsbol, Editor

“Heritable Generational Effects through RNA” *Transgenerational Epigenetics*, Second Edition

- Schoelz, JM and Riddle NC (Textbook Chapter – In press), Dr. Trygve Tollefsbol, Editor

POSTER PRESENTATIONS (presenting Author underlined>

“Roles for the Heterochromatin Protein 1 family at active transcription start sites”

- Schoelz, JM and Riddle, NC | UAB Comprehensive Aging Symposium (October 2019)

“Effects of cooperative HP1 binding at transcription start sites”

- Schoelz, JM and Riddle, NC | 60th Annual *Drosophila* Research Conference, Dallas TX (March 2019)

“Regulation of gene expression by *Drosophila* Heterochromatin Protein 1”

- Schoelz, JM and Riddle, NC | UAB Comprehensive Cancer Center Annual Retreat (November 2018)

“*Drosophila* HP1 proteins may impact gene regulation by altering RNA polymerase II dynamics”

- Schoelz, JM and Riddle, NC | UAB Comprehensive Center for Healthy Aging Symposium (April 2018)

“*Drosophila* HP1 proteins may impact gene regulation by altering RNA polymerase II dynamics”

- Schoelz, JM and Riddle, NC | 2nd Annual UAB Nathan Shock Center Symposium on the Basic Biology of Aging (April 2018)

“An integrated exploration of variant calling in the *Apis mellifera* genome”

- Jack Schoelz, Darren Hagen, Christine G. Elsik | University of Missouri Summer Undergraduate Research Forum 2016

“Comparing African ‘killer bee’ and European honey bee genomes: identifying structural variants that might affect behavior”

- Jack Schoelz, Micah Fletcher, Darren Hagen, J. Spencer Johnston, Christine G. Elsik | MU Undergraduate Research 2015

“Transcriptome-wide analysis of the Heterochromatin Protein 1 binding landscape”

- Schoelz, J.M., and Riddle, N.C. | Gordon Research Conference on Epigenetics and Chromatin (July 2019)

“Construction of molecular tethers to evaluate HP1 impacts on transcription”

- Sherpa, M, Robinson, T.S., Schoelz, J.M. and Riddle, N.C. | UAB Fall Undergraduate Research Expo 2018 (November 2018)

“Differential gene expression analysis through RNA-seq of HP1 knockouts in *Drosophila melanogaster*”

- Feng, J.X., Schoelz, J.M., and Riddle, N.C. | UAB Fall Undergraduate Research Expo 2018 (April 2019)
“Determining the effects of HP1 homologs on RNA polymerase II recruitment in *Drosophila melanogaster* through molecular tethering”
 - Favors, J., Schoelz, J.M. and Riddle, N.C. | UAB Spring Undergraduate Research Expo 2018 (April 2019)
“Investigating the transcriptional effects of HP1 proteins in *Drosophila melanogaster* through molecular tethering”
 - Feng, J.X., Schoelz, J.M., and Riddle, N.C. | UAB Fall Undergraduate Research Expo 2018 (November 2018)
“Roles of Human HP1 Proteins in Cancer Metastasis and Proliferation”
 - Momeni, MM; Schoelz, JM and Riddle, NC | UAB Comprehensive Cancer Center Annual Retreat (November 2018)
“Impacts of Heterochromatin Protein 1 binding at Transcription Start Sites”
 - Schoelz, JM and Riddle, NC | Cold Spring Harbor Epigenetics and Chromatin (September 2018)
“Construction of CRISPR/Cas9 vectors to modify HP1 phosphorylation status”
 - Robinson, TS; Schoelz, JM and Riddle, NC | UAB Summer Undergraduate Research Expo (July 2018)
“Introduction of a phospho-block mutation to evaluate the significance of phosphorylation in HP1 proteins”
 - Mackenzie, RC; Schoelz, JM and Riddle, NC | UAB Fall Undergraduate Research Expo 2017 (November 2017)
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RESEARCH AND LABORATORY EXPERIENCE

- Dr. Nicole Riddle; Summer 2017 – Present | *University of Alabama-Birmingham Department of Biology***
 - Utilized multiple epigenomic datasets to characterize RNA polymerase II dynamics across HP1 binding states and describe epigenomic environment of transcription start sites bound by HP1
 - Dr. Christine G. Elsik; Summer 2015, Summer 2016 | *University of Missouri Department of Animal Science***
 - Performed single nucleotide and large structural variant calling across European and Africanized “killer” honey bees from whole genome sequence data in multiple formats.
 - Dr. James English; Summer 2014 | *University of Missouri Department of Plant Science***
 - Grew *Pythium* cultures with the goal of developing an assay to evaluate defense peptides against fungal pathogens.
 - Implemented a PCR assay to screen *Arabidopsis thaliana* T-DNA knockouts to identify plant genotypes.
 - Dr. Fredric Shaffer; August 2013 – December 2015 | *Truman State University Department of Psychology***
 - Established evidence-based practices to inform clinicians on how to administer heart-rate variability biofeedback therapy.
 - Gentry Fowler, B.S.; Spring 2016 | *Truman State University Department of Biology***
 - Prepared solutions and media for laboratory course sections. Reported stock of microbiology chemical lab supplies.
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TEACHING EXPERIENCE AND MENTORSHIP

- Biotechnology Guest Lecturer; March 2019 | *Sharney Logan, MPA; UAB Department of Clinical and Diagnostic Services***
 - Presented concepts in epigenetics and Riddle lab research projects to masters graduate students in biotechnology program
 - Epigenetics Guest Lecturer; August 2018 - present | *Dr. Nicole Riddle, UAB Department of Biology***
 - Lectured on concepts of heterochromatin and position effect variegation in an undergraduate and graduate mixed course
 - Undergraduate Research Mentor; August 2017 - present | *Dr. Nicole Riddle, UAB Department of Biology***
 - Mentored four undergraduates in molecular cloning and bioinformatics (see posters by Feng, J.X., Robinson, T.S., Mackenzie, R.C.)
 - Columbia Public Schools Classroom Aide; January – May 2017 | *Dr. Jill Brown, Russell Elementary School***
 - Worked to provide support for classroom teachers through tutoring in all subject areas and preparing lesson materials.
 - Introduction to Bioinformatics Teaching Assistant; Fall 2016 | *Dr. Anton Weisstein, Truman State University***
 - Tutored biology undergraduates in Python with the goal of empowering students to collaborate with computer science majors on bioinformatics projects.
 - Genetics Teaching Assistant; Spring 2015 | *Dr. Stephen Hudman, Truman State University***
 - Helped students understand lab concepts including dilution, PCR, library enrichment and primer design.
 - Introduction to Biology I Teaching Assistant; Fall 2013 | *Dr. Anton Weisstein, Truman State University***
 - Provided feedback to students covering microscopy, chromatography, spectrophotometry and mathematical modeling.
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SERVICE AND OUTREACH

- Poster Judge, UAB Undergraduate Research Symposium (Summer 2019, Spring 2019, Fall 2018, Summer 2018, Fall (2017)**
- Presentation of Laboratory Research, Graduate Biomedical Sciences Recruitment Event**
- Poster presenter, Darwin Day 2018**
 - Communicated epigenetics and *Drosophila* biology to members of the general public
- Middle School Science Enrichment Lesson, November 2017**
 - Designed and implemented a hands-on lesson plan on chromatography for middle school students at Freedom Rain Academy, an on-site K-8 school at Lovelady Women’s Shelter in Birmingham, AL
- International Exchange in Taichung, Taiwan; Fall 2014**
 - Developed cross-cultural communication skills through intensive Chinese language courses and interacting with locals while living in a culturally immersive off-campus neighborhood.