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EDUCATION

2008 - present BS Biology Salisbury University, Salisbury, MD

- Minors: Chemistry and Psychology
- GPA: 3.542
- **Relevant Courses:** Physiological Psychology, Molecular Genetics, Vertebrate Physiology, Biochemical Methods, Drugs and Behavior, Human Neuropsychology

RESEARCH EXPERIENCE

2011 – present *Pseudacris crucifer* (**Spring Peeper**)

(PI: Dr. Kimberly Hunter and Dr. Ryan Taylor)

Project centered around developing a profile of genetic variance between two populations of *Pseudacris crucifer* (a chorus frog) and correlating this genetic data with female call preference data. This will gauge how genetic information could be communicated through mating calls and the role genotypic divergence plays in sexual selection.

Field Experience:

- Focused on catching spring peepers and recording their mating calls in the wild.
- Traveled to Louisiana for three nights of exploring swamps in the dark (Light often frightened the frogs.)
- Improvisation had to be used in cage construction and recoding techniques.
- Assisted in sample collection (toe clippings) of live specimens in the swamps.

Lab Experience:

- Utilized two different genetic techniques (ISSRs and microsatellites), and several different analysis methods.
- Funded by two internal research grants and an REU-like summer research grant.
- Began project with DNA extraction of samples collected from Louisiana and samples from Maryland collected by a graduate student. (91 total)
- Screened primers for ISSR and determined ideal annealing temperatures through gradient PCR.
- Lab Work: Well over 1300 confirmed successful PCRs.
- Analyzed ISSR data to develop profiles of genetic variance between populations using PopGene, TESS, and STRUCTURE.
- Analyzed microsatellite data using Genemarker and STRUCTURE.
- Wrote lab protocol for STRUCTURE, GeneMarker, and Peak Scanner analysis.

- Trained multiple other undergraduate research students in molecular genetic lab techniques and analysis protocols.

Journal Club (PI: Dr. Kimberly Hunter, Dr. Ryan Taylor, Dr. Steven Gehrlich)

- Weekly lab meeting involving active discussion and critique of scientific literature chosen by members. Focus was animal behavior, chemical ecology and ion channel physiology.

2011 – 2012 **Prescription Neuroenhancer Abuse Among College Students**

(PI: Dr. Al Witkofsky)

- IRB approved independent study focusing on abuse of prescription neuroenhancing drugs (Ritalin or Adderall) among college students.
- Developed 13 question survey administered to 170 students and performed statistical analysis using SPSS.
- Results were presented as a poster at the Eastern Psychological Association Eastern 2012 Meeting.

2011 - 2012 **Role of *ctn-1* in Ethanol Intoxication using *C. elegans*** (Mentor: Dr. Patti Erickson)

- Part of an advanced genetics class based around learning molecular genetic lab techniques, specifically RNAi.
- Focused on performing knockdown of *ctn-1* in *C. elegans*, a gene in part of pathway involved in ethanol intoxication.
- Developed original RNAi primers through eRNAi, and successfully produced RNAi constructs from bottom up.
- Phenotypic assay was developed via modification of literature protocol and successfully applied to *C. elegans*.
- A formal oral presentation was given to share experimental results.

Summer 2011 **Genetic Profile of Arctic Charr in Iceland**

Field Experience:

- Traveled to Iceland for two weeks as part of a class on evolution and fish biology.
- Assisted in collection of fish from several streams through electrofishing and seining.
- Assisted in tissue sample collection from lab grown arctic charr.

Lab Experience:

- Trained another undergraduate student in ISSR protocols on the Iceland collected fish.

PUBLICATIONS

September 2011 – Featured Student Editorial: Salisbury University Biology Newsletter

PROFESSIONAL ORGANIZATIONS

2011 - present Eastern Psychological Association

2011- present The American Society For Biochemistry and Molecular Biology

PRESENTATIONS

International: July 2012 First Joint Conference on Evolutionary Biology: Ottawa, Canada (Poster) Genes, Frogs, and Sexy Calls: Examining Sexual Selection Through Genetic Variation and Female Mate Choice in *Pseudacris crucifer*

Regional: March 2012 – Eastern Psychological Association Meeting 2012, Pittsburgh PA (Poster) Prescription Neuroenhancer Abuse Among College Students

Local:

Spring 2012 – Salisbury University Student Research Conference: Salisbury, MD (Oral) Genes, Frogs, and Sexy Calls: Exploring Sexual Selection Through Genetic Variation and Female Call Preferences

Spring 2011 - Salisbury University Student Research Conference: Salisbury, MD (Oral) Molecular Biodiversity of Plants and Animals: Conservation, Sexual Selection, and Speciation

Summer 2011 – Salisbury University Summer Scholar Program: Salisbury, MD (Poster) Genetic Variability Among Spring Peeper Populations

HONORS AND ACTIVITIES

Summer 2011 - Guerreri Summer Scholar Program

2011 - present Member -Lambda Psi Chapter of Tri Beta National Biological Honor Society

2011 - present Member - Psi Chi

2009- Present Member - Haidong Gumdo (Korean Swordfighting)

2009-2011 Member - Film Club

2011-Present Member - Bio-Environs Club

SKILLS

Polymerase chain reaction (PCR), Gel electrophoresis, Nanodrop, Autoclave, DNA extraction (*C. elegans* and *P. crucifer*), gene fragment isolation, TA Cloning, E. Coli electroporation transformation (electroporation), transformant screening (colony PCR and restriction length polymorphism analysis (RFLP)), Real-time quantitative PCR, RNA isolation (*C. elegans*), cDNA synthesis, RNAi, gel purification, sterile media preparation, SPSS, TESS, STRUCTURE, PopGene, GeneMarker, BLAST, eRNAi, Peak Scanner

WORK EXPERIENCE

2008 - present **DC Bread & Brew - Line Cook**
Washington D.C

INTERESTS

B-movies; Horror movies; Camping; Archery; Hiking; Fossil Hunting; Skiing