

# Olivia Rose Hamilton

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## EDUCATION

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**Candidate for Master of Science in Applied Biology**

**May 2023**

*Salisbury University, Salisbury, Maryland*

**Bachelor of Science in Biology, cum laude**

**May 2020**

*Salisbury University, Salisbury, Maryland*

## RESEARCH EXPERIENCE

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**Phonotaxis Experiments and Soundscape Analyses**

**Salisbury University, 2019-Present**

P.I.: Dr. Kim Hunter and Dr. Ryan Taylor

- Travel to the Smithsonian Tropical Research Institute with a graduate student to capture wild Panamanian túngara frogs in amplexus from Soberanía National Park and perform nocturnal phonotaxis experiments on females. Experiments entail the use of robotic frogs to emulate a visual stimulus.
- Genetic samples are taken each night from frogs of both sexes before release.
- Introduce and train a PhD student in the methods of our lab.
- Independent research involves collecting novel population and environmental data.
- Utilize soundscape analyses to visualize noisy environments and collect data from sound files using R software and Raven/Syrinx sound analysis software. Relate these data back to both the phonotaxis trials and the population/environmental data.

**Using ddRAD to Sequence the Túngara Frog**

**Salisbury University, 2018-Present**

P.I.: Dr. Kim Hunter and Dr. Ryan Taylor

- Create a ddRAD seq library using DNA from the Panamanian túngara frog initially as part of the coursework for genetic analysis, but later for the research purposes of the Taylor-Hunter lab.
- Laboratory work includes the use of Qiagen blood and tissue kits and a Qubit fluorometer to extract and quantify the DNA.
- Through the COVID-19 pandemic, record and edit a video series to accompany the protocol taught by Dr. Hunter in place of the traditional face-to-face format of laboratory for students taking genetic analysis.

**Zooarchaeology Faunal Analysis**

**Salisbury University, 2018-2019**

P.I.: Dr. Elizabeth Ragan

- Identify and analyze the faunal remains from a 17<sup>th</sup> century Maryland colonial site in the archaeology laboratory.
- Travel to the Smithsonian Museum Support Center in Suitland, MD to utilize their vertebrate comparative collection in the archaeobiology lab.

*Archaeological Conference Student Scholarship for Maryland Work (\$250)*

**Land Use and Climate Change Preliminary Study**

**Salisbury University, 2017**

P.I.: Dr. Aaron Hogue

- Compile the recent data of researchers regarding land use and climate change.

## **Bat Drinking Behavior**

**Salisbury University, 2016-2018**

P.I.: Dr. Aaron Hogue

- Investigate the potential for relevant technologies to study bat drinking behavior and apply these technologies in the field to test for any environmental factors affecting their behavior and prevalence in that area.

(REU) Summer Research Grant 2018 (\$4500)

## **TEACHING EXPERIENCE**

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### **Anatomy & Physiology II Teaching Assistant**

**Salisbury University, 2020-Present**

- Serve as the lab instructor for up to three sections of A&P II.
- Responsibilities include holding weekly Zoom lectures and office hours, organizing lab exams and weekly quizzes, hosting exam review sessions, and aiding students in their comprehension of the lab material while collaborating with other instructors and professors for what would best benefit the students.

### **Chemistry Supplemental Instructor**

**Salisbury University, 2020**

- Through the university's Center for Student Achievement, provide additional practice and guidance to students in General Chemistry II.
- Hold sessions, create worksheets, give practice tests, and host Zoom meetings to empower students in the course both in person and online.

## **PRESENTATIONS & HONORS**

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- Paper Competition and Oral Presentation, Middle Atlantic Archaeology Conference: *Analysis and Identification of Faunal Remains from an Early Maryland Colonial Site* **2019**
- Poster Presentation, Salisbury University: *Environmental Factors Influencing Bat Activity Along Water Bodies* **2018**
- Poster Presentation, Salisbury University: *Analysis and Identification of Faunal Remains from an Early Maryland Colonial Site* **2018**
- Biology Honor Society: *Beta Beta Beta* **2018**
- Poster Presentation, Salisbury University: *Thermal Imagery as a Tool for Studying Bat Drinking Behavior* **2017**

## **TECHNICAL SKILLS & EXPERIENCE**

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### **Field Experience**

- Traveled to Panamá and worked in a tropical rainforest to collect and perform experiments on túngara frogs, ultimately marking them for recapture upon release.
- Performed local field work on bats using equipment such as a thermal imaging camera (ATN OTS-X), a tablet running ArcSoft ShowBiz and SPECTR software, a refractometer, an anemometer, and an ultrasonic microphone (MiniMIC with Binary Acoustic Technology).
- Taken nearly all of the available zoology classes (Herpetology, Mammalogy, Entomology, etc.) and went into the field (ranging in environments from swamps to beaches) to find, identify, capture, and sometimes mark the target species for each class, using the provided equipment and techniques.

## Laboratory Experience

- Visualized soundscape data and used R statistical programming (including Raven, seewave, and warbleR packages) to evaluate sound files as part of an online graduate course in Bioacoustics through the Organization for Tropical Studies.
- Utilized a sound chamber with relevant monitoring equipment (speakers, SPL meter, Ethovision, infrared cameras, etc.) and various soundscape programs (Raven, Wildlife Acoustics, etc.).
- Prepared silicone vocal sacs for the multimodal robofrogs using a novel protocol while overseeing the work of undergraduate assistants.
- Created and moderated the Taylor-Hunter lab website.
- Managed up to nine undergraduates in the laboratory and delegated weekly tasks to assist with both laboratory and field work.
- Worked in an archaeology lab and reclassified the osteology collection.
- Worked in laboratory settings as part of many science courses, often times running experiments using many different pieces of equipment and technology including a spectrophotometer, microscope, centrifuge, hemacytometer, digimelt, and others.
- Performed many dissections on diverse taxa both in and out of the classroom.
- Used many laboratory techniques to complete experiments including a polymerase chain reaction (PCR), creating a master mix of reagents, titration, chromatography, and others.

## Languages

- Advanced to 200 level Spanish (conversational) and independently interacted with native speakers while living in Latin America.
- Proficient in reading and writing Korean and can speak at an elementary level.
- Can read and write in Arabic (Standard) and took a credited course in Arabic 101.
- Elementary in American Sign Language.

## PROFESSIONAL HISTORY

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### Transporter

2016 – 2018

*Peninsula Regional Medical Center, Salisbury, MD*

- Provide the movement of patients, specimens, pharmaceuticals, and other materials throughout the hospital.
- Will also provide cadaver release and morgue maintenance.

### Funeral Director Assistant

2016 – Present

*Burbage Funeral Home, Berlin, MD*

- Greet guests, answer phones, and attend to the needs of the service while assisting in tasks as they present themselves.