Biology students at Longwood University are required to complete some type of research or internship prior to graduation. By doing this, students are able to show off what they’ve learned and continue to learn. Students can competently express what they’ve learned in a professional setting, which in turn will help cultivate opportunities in the future. We are able to show off our skills at a higher level and build our resume for potential future employers and professors.

This past summer of 2019, I had the opportunity to intern at the Smithsonian Conservation Biology Institute. Here, my research focused on carnivore reproductive biology, focusing assisted reproductive technology (ART) on Red wolf reproduction. Red wolves are a critically endangered species with less than 300 individuals left in the population. Our goal was to use ARTs in order to aid their species recovery and maintain genetic diversity. Through this, I was able to gain experience in cell culture, fluoresence microscopy, gamete cryopreservation, and other basic laboratory skills. I believe this internship helped me to grow as a scientist, communicator, and professional in the field.

Through the internship, our experimentation focused on three different objectives. First, we wanted to determine the best base medium for in vitro male sperm incubation. Second, we wanted to improve our knowledge of sperm cryo-tolerance by identifying potential protein biomarkers for sperm post-thaw. Finally, we wanted to improve our knowledge on the effects of oviductal extracellular vesicle supplementation post-thaw. Through experimentation, we determined that CCM and NCSU were the best base mediums for in vitro sperm incubation and should be used for future capacitation studies. Proteomic data identified proteins involved in calcium transport, lipid transport, and phosphorylation. These proteins can potentially be supplemented in future studies. Finally, more studies need to be done on the supplementation of oviductal extracellular vesicles. We found that their supplementation has positive effects when analyzing motility, acrosome integrity, and overall viability.

Through this research, I was chosen as a finalist to present my findings at the 46th International Embryo Technology Society conference. In January 2020, I won the title of runner-up, after competing against other undergraduate and graduate students who also presented their research through posters. I had the opportunity to meet lots of renowned scientists in the field, network, and find a passion for science that I had yet to uncover. Leading up to this conference I had to submit an abstract of my work. This abstract is now in the process of becoming a manuscript for publication in the near future. After a long summer of research, I ended my internship by giving a presentation to the other researchers in the gamete lab that I had been working in all summer. Displaying my work through an abstract, PowerPoint presentation, and poster allowed me to showcase a variety of my skills in different settings.

Overall, this was an incredible experience that not many individuals can say they’ve had the chance to complete. I would like to continue my research in a future lab setting or graduate career. The people I’ve met, connections I’ve made, and research I’ve completed through this internship has allowed me to look closer into what it really means to be a professional in the field.