**Dr. Lovern’s Research About Sex Steroids and Stress Hormones**

**Dr. Loverns Research**

 This semester I have been interested in learning more about neurological disorders and effects within the body that are related to these disorders. I spoke to Dr. Lovern, a professor at Oklahoma State University, about his research and asked him to explain what the basis of his research was and the goal of his research. Dr. Lovern explained his research by saying, “Most of my research has looked at how sex steroids (mostly testosterone) and stress hormones (corticosterone) influence development, sex differences, and behavior in lizards.” He also explained that although the research that he is performing is not directly related to a single disorder, it is related to a few different disorders. For example, the research he has done involving steroids and development is directly related to disorders of sex development and his research involving stress responses is directly related to physiological stress.

**Goal of the Research and How it is Performed**

 After learning about the main focus of his research, I asked Dr. Lovern what the goal of his research was and how he performed his research in the lab in order to reach his goal. When explaining the goal of his research he said, “In pretty much all of my work, my main goal is to understand how hormones like steroids influence behavior and vice-versa.” He also stated that even though he has the same overall goal for all of his work, depending on the specific research he is conducting, he may have to use different context when stating the goal. In order to reach this goal, he performs the majority of his research in the lab but for some of his work he is occasionally in the field with the majority of his field work taking place in Georgia. Dr. Lovern started off telling me about how he performs his research by describing the lizards that he uses in the lab. “I mostly work with lizards in the laboratory – we primarily work with anole lizards (lizards of the genus Anolis) which are fairly common in the southeastern United States and easy to work with in captivity.” Lovern stated. After describing the types of lizards they performed their research with and why they chose those specific lizards, he told me about what they observe while working with the anole lizards. “We can observe behavior, manipulate hormones (e.g., through implants, injections, and/or treatments of eggs to expose embryos to different hormone levels), and get them to do pretty much everything they do naturally in the field.” Dr. Lovern explained.

**Additional Research Information**

 During the interview I asked Dr. Lovern a few additional questions concerning the performance of his research. A few of these questions included who was involved in the research, if advanced techniques were included, and is this research part of a long ongoing project or is this a new topic of research for him. I learned that the research that he is doing in the lab included graduate students, and researchers from Oklahoma State University and other institutions. While informing me about the other individuals participating in the research he did not fail to give credit where credit was due by explaining that without these people the research would not be possible. While expressing his love for science he also said, “One of the most powerful aspects of scientific collaboration is the ability to combine skills of multiple scientists to address research questions of common interest. I really enjoy this aspect of science.”

 When asked about if there were any advanced techniques and the length of the research Lovern responded by explaining that the techniques are pretty straightforward and that the research is ongoing. The techniques included observation, husbandry, hormone manipulation, and analysis. These techniques are used for the bulk of his work. When he said that the research is ongoing he explained that it is however based on funding which he said earlier was one of the challenges.

**Outcomes and Challenges**

 After hearing about all of the work that Dr. Lovern does in the lab I asked him to explain what the outcome of his research has been so far. He told me that they have learned a lot about the effects that hormones such as testosterone, corticosterone and several other hormones have on lizards, not only from research done in his lab but from research done throughout the years by numerous researchers. He then expressed his excitement about the outcomes of his research when he said, “What’s exciting to me is that the hormones are pretty much identical to those you find in other vertebrates, including mammals, even humans.” He went into more detail later by explaining to me that humans produce testosterone, the same molecule that he works with and we also produce primarily cortisol as our stress hormone which is biochemically very similar to the corticosterone that he uses in the lab.

 Once I heard about the amount of work that he does in the lab and the amazing information that he has gathered from his research, I knew that it could not be that easy. I asked him about some of the challenges that he faces during his work. “A main challenge is probably just keeping up with all of the research happening in other labs across the world that relates to what I study while trying to teach, get grants so I have money to do the work, etc.” Lovern stated. While there may be challenges involved, Dr. Lovern doesn’t let these challenges get in his way. He instead expressed that the challenges are exciting and motivate him to get better at dealing with those challenges which allows for more focus on his own research.

**What Dr. Lovern Loves About His Research and Who Benefits**

 Once I had most of my questions answered by Dr. Lovern I was now more curious about what he thinks is most exciting about his research, what inspired him, and who can benefit from his research. I asked what he found most exciting about his research because while answering all of my questions I felt like he was very passionate about his research which I thought was amazing. When I asked which part was the most exciting for him he said, “Just the satisfaction in trying to understand something that hasn’t been explained before. I love contributing to scientific knowledge!” I was then curious as to what inspired him to begin research. He told me that the main inspiration for all of his work has been curiosity, being able to answer questions that have not been answered, and his long-term interest in lizard behavior.

 The last question that I asked Dr. Lovern was about the people that could benefit from his research. I know that considering the number of hours he has put into his research, whether that be in the lab, talking to other researchers, or facing the challenges, there was a reason behind all of the time and effort. He began explaining who his research could benefit by telling me that with his research it is easy to make the link between humans and lizards. Dr. Lovern also said, “So much of what we learn contributes to a knowledge base that ultimately can impact our understanding of human biology. Additionally, I think it’s a worthy pursuit to just learn more about how the world works in general, outside of potential insight it gives us for humans.”