

Supplemental Material 2: The following short essays are a representative sample from students who were asked to reflect on “what they learned, how they learned, and how they felt about the experience” following the first three-hour laboratory session of Biological Inquiry, a course for first year students at Wofford College. During the lab, each team of four to five students read a primary research article and presented the research findings to their classmates, often in the form of a skit.

Student 1: The lab time was extremely beneficial to reading and understanding some relatively complex primary literature. In some cases just reading the study is not thorough enough to gain a full understanding of the procedures and conclusion. The learning and teaching involved in our activities helped not only the class learn about our article but the group itself gained a higher understanding via having to break down the complex information and deliver it in a much simpler form to their peers. The skit was intimidating at first because I didn't understand how we would act out the lizard interactions. Also it required a certain outgoing personality to engage in a skit in front of the class that not all students have. The most important idea I learned from the lab time was the idea that it doesn't take a super genius like Einstein to be curious enough to come up with a question and then develop a study to find its answer. This is a fairly simple process that merely takes a little ingenuity and the means to set up a suitable control environment.

Student 2: Initially I was intimidated by the lab, but I was very curious as to what we would be doing, reading, and learning as well as how we would be doing all of these things in comparison to what I am used to. At the end of the lab I was comfortable with my groups material and I feel that I had a pretty good grasp on the other presentations. I was surprised with how well I could understand and engage with other peoples presentations due to how well they presented and how well I was able to pick I up and understand it. Overall, I felt comfortable and confident in this lab and I am excited to do more labs and learn from my classmates.

Student 3: Today I learned not only that piranhas travel in packs to avoid predators, but I also learned how to work in groups efficiently. Lab work at Wofford is totally different than lab work in high school. I am now working with people who graduated a the top of their class and are extremely bright kids. I was able to learn so much today because of the caliber of students I was working with and their willingness to put in a lot of effort. Initially, I was very intimidated, but at the end I felt very good about myself. It surprised me how intelligent everyone in our group was and how committed they were to work. I will never forget my feelings when I walked into my first college lab.

Student 4: I was initially intimidated by the lab because we were only given an hour to read the primary literature article and come up with a way to present the experiment with the rest of the class. By the time the hour had passed, I felt much more confident about the activity because my lab partners and I work well and efficiently together. We came up with a creative method for sharing our experiment while communicating its main aspects clearly. I was surprised at how well my group worked together and how willing each person was to do their part which was nice because it made the lab assignment easier. I did not encounter any frustrations during the lab because of our lab group's teamwork and support for each other. I learned about common misconceptions about

shoaling of piranhas from primary literature and a first hand experiment that I won't forget because the lab format.

Student 5: In class I learned many things, a number of them being new scientific findings such as the finding of Mutualism and parasitism and how lizards physical appearance decide who will get laid. While these and other findings are important I think it is more important to understand the large role of all these experiments; which is how science changes constantly. For most of these experiments there was a commonly accepted idea that was soon overturned by these experiments. Also I learned that with each experiment tested that they open doors to more and more experiments. I learned this by trying to find similarities with these different experiments and then asking questions. I like this method of what we did because it helps and practices many essential skills like "creativity, cooperation's, analyzing, critical thinking, public speaking and it is very low key and not all serious about being right or wrong.

Student 6: Biology terrifies me. I have an ingrained fear of the field, deeply chivied from a year of poor grades, fruitless tutoring sessions, and muddled confusion. I was daunted, therefore to begin reading my group's primary source in lab. At the sight of innumerable complex biological terms, my head began to spin. Yet, after consulting Dr. Goldey as well as the other members of team Mack, the buzzing subsided. Biological terms are simply a collaboration of meaningful fragments, not to be feared, but appreciated for the clarity they bring. By explaining how to break long terms down into roots, Dr. Goldey and my teammates gave me tool for all other labs in the future. While it took me longer than my group to fully grasp the implications of our article, by understanding the nuances of the terms, for once I could comprehend a biological article. While the word biology may still increase my heart rate, group collaboration in lab gave me the courage to calm my nerves, using my understanding of words to learn science.

Student 7: Today in lab I learned that in science there is no one right answer. What some scientist may see as "exact" can be challenged by other scientists and proven wrong. In my article's case, scientists were proven wrong in concluding that the Carribean cleaning goby's relationship with the longfin damselfish is completely mutualistic. Their symbiosis can be mutualistic, parasitic, or neutral according to Cheney and Cote's experiment. I also learned that knowing what has happened in the past helps determine the future. When scientists read and study experiments from the past, they are able to build onto those conclusions, reject them, or formulate their own. I really enjoyed this lab because I like demonstrating for and teaching fellow students. I also find it easier to me to learn from different people rather than listening to the same teacher everyday.