Student: Riley Kunkel

Advisor: Dr. Madeline Marshall

**End of Summer Report of my Project: Fossil Preservation & Interpretations of Paleoenvironments of the Cretaceous Morondava Basin of Western Madagascar**

I’d like to start by thanking Julia Robinson Burd, '31 and her family, as well as anyone else who manages the Julia Robinson Burd Memorial Fellowship. Without your support I would not have had the opportunity to indulge myself in this life shaping and highly transferable undergraduate research opportunity. Thank you so much for all that you do.

My name is Riley Kunkel and this summer I spent 8 weeks analyzing fossil rich samples from the Morondava Basin of Western Madagascar on the micro and macro scale so that I could work towards uncovering what the paleoenvironment looked like during the late Cretaceous Period through a taphonomic (bone/fossil) lens. I started my work by diving into some research papers that were directly related to my project or had similar concepts to my project so that I could have a better understanding and foundation to build my research off of. Once I had successfully read and analyzed several papers, I started to look at samples through the microscope and determine what samples could be used for point counting fossils, or in other words, what samples yielded fossils in general. About halfway through the 8 weeks my advisor, Dr. Madeline Marshall, my research partner Isaac Hautala, and I went out west to do some field work and sample collecting for Isaac’s project. For me, the experience wasn’t directly related to my project, being that my samples are from Madagascar, however the experience was still instrumental in giving me a general feel and some foundational practice for field work I may do in the future. Once arriving back in Albion, I spent the remainder of my time on Dr. Marshall’s Lab Microscope that has the ability to look at samples through advanced lenses, take photos, and measure grains/fossils. It was crucial for me to learn this skill and collect this data so that I, or whoever may continue this research, has this taphonomic/fossil knowledge of the Morondava Basin so that more detailed and robust paleoenvironmental interpretations can be made. Since Lauren Bergeron ‘22, previously collected data through the mineralogical lens, and I have now started data collection through the taphonomic lens, we are now one step closer to detailed and robust paleoenvironmental interpretations. Since I was unable to complete all of the tasks I wanted to during this research period, I have laid out my data and the next steps so that myself, or whoever may continue this project in the future, have a clear understanding of what I have done, and what their next steps should be.

Last, but certainly not least, I would like to thank my research partner Isaac Hautala for the good laughs, great companionship, and above all hard work, and my research advisor Dr. Madeline Marshall for her compassion, patience, and seemingly infinite knowledge.