



Ms. Kelsey Brenna McCune

## *Social Versus Physical Cognition in Three Corvid Species*

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Kelsey McCune is the recipient of the 2013 AAAS, Pacific Division Alan E. Leviton

Student Research Award. Dr. Renee Robinette Ha is her advisor.

Photos provided by Ms. McCune.

Receiving the AAAS, Pacific Division Alan E. Leviton award gave me the opportunity to put my research ideas into action. I am interested in conducting cognition tests on several species of corvid to gain insight into the factors potentially influencing the evolution of cognition in birds. This award allowed me to pilot test the methodologies for the six cognition tasks that I proposed. It has also helped to fund travel to my study sites to capture and band crows, and to collect behavioral observation data on crow interactions.

I used this grant to purchase the necessary items for the 6 cognitive tasks that I wanted to administer to captive crows. With this money I was also able to care for and feed the captive crows for 10 weeks. In this time, I was able to try out a few different methods for administering these tasks, and I learned the best ways to motivate the crows to attempt each task. I had formulated the methodologies for my tasks by reading literature to see what is commonly done in the comparative cognition field. However, now I was actually able to figure out the most practical and appropriate methods.

Furthermore, I collected pilot cognition data on the wild, free-flying crows in the same area as the captive crows. I discovered that while the captive crows exhibited neophobia towards the cognitive tasks that resulted in long and unpredictable latencies to solve the task, the wild crows approached the tasks almost instantaneously in order to gain the food item. The wild crows demonstrated far greater motivation and ability to solve these tasks than the crows in captivity. As such, I believe I will obtain more accurate data by conducting these cognitive assays on wild corvids rather than bringing subjects into captivity. I have adjusted the methods to allow for this change, and will begin collecting cognition data for my project in the coming months.

This award has also facilitated my travel to my study sites. I was able to travel more frequently to my study site north of Seattle to band crows and collect social association data on the crow population. I am also in the process of establishing a study site in Oregon where I will create a banded population of Western Scrub-Jays. I will continue to use this fund to travel to this study site in order to establish a population of banded jays, collect behavioral observation data, and conduct the cognition tests.

This award was integral in establishing the protocols, obtaining the testing equipment, and collecting data at my field sites. As such, this award defrayed the majority of the start-up costs for my PhD project. Since I will now be conducting cognitive tests on wild rather than captive corvids, I will not have care and keeping costs. Consequently, I will be able to carry out cognitive testing and behavioral observations with minimal additional expenses. 🏠

