



**CALIFORNIA STATE SCIENCE FAIR
2011 PROJECT SUMMARY**

Name(s) Shea R. Nolan	Project Number 31314
Project Title Who Are You Calling Bird Brain?	
Objectives/Goals The objective was to investigate the intelligence of Steller's Jays (<i>Cyanocitta stelleri</i>) and Western Scrub Jays (<i>Aphelocoma californica</i>) by determining if they could use simple problem-solving skills by manipulating a string to obtain food. Abstract Methods/Materials Small chunks of food were tied to the ends of three strings, the food varying from chunks of bread to donut-shaped biscuits. Another string had the control, which was a red rubber cap. The strings were then tied to a bike rack, which was suspended from a tree limb in mid air. At the beginning of the experiment, the strings were 17, 22, and 25 inches, and the control hung from a 22-inch string. Later, however, the strings were shortened to 18, 14, and 10 inches, and the control was shortened to 18 inches. The Trip Camera was then set up, attached to a tree limb adjacent to the bike rack. Four bungee cords and four twist-ties were used to strap it to the tree limb. The camera was set to take a picture every 30 seconds when it sensed movement in the area. Last, a plate of bait was placed on the top of the bike rack to attract the birds, again the food varying from bread and acorns to biscuits. The experiment commenced for nine weeks. Every week the camera was taken down to view the pictures that had been taken. During winter break, the bird's behavior was observed in real time, with observations of the metal structure taken for up to three hours a day, between the hours of 8 AM and 1 PM. I sat in a parked car, where the birds could not see me, and observed their comings and goings. Results The birds went from ignoring the experiment to using the experiment as a food source. Both species showed an interest in the strings, but only the Scrub Jays went as far as trying to obtain the food on the ends of them. Only once I observed a Scrub Jay take the suspended food, though it's possible other attempts were made, but not observed. Conclusions/Discussion My hypothesis was both correct and incorrect. It was incorrect for Steller's Jays, who did not demonstrate problem-solving skills for this purpose. But it was correct for Scrub Jays, but statistically inconclusive, based on the evidence of a single observation of a bird swooping down and pulling the food up.	
Summary Statement My project investigates the intelligence of Scrub and Steller's Jays in their natural habitat, and whether they can solve a simple problem to acquire food.	
Help Received Father helped suspend experiment, mother helped with proofreading.	