



**CALIFORNIA STATE SCIENCE FAIR
2015 PROJECT SUMMARY**

Name(s) Kayla L. Williams	Project Number S2123
Project Title Smokin' Spiders: An Investigation of Secondhand Smoke on Spider Webs	
Abstract Objectives/Goals The objective of this project was to determine whether or not secondhand smoke exposure was detrimental to the average strength of spider webs. If <i>Parasteatoda tepidariorum</i> spiders are exposed to secondhand cigarette smoke, then over time, the strength of the webs will decrease. Methods/Materials 12 <i>Parasteatoda tepidariorum</i> spiders were purchased online. Identical habitats were created to house the spiders. The spiders spun for one week. The web strength was then tested by hanging paperclips on the webs until the web snapped. After snapping, the weight of the paperclips, in grams, was measured on a scale. This process was repeated three times, to create a baseline, with one week of spinning in between each test. After the control testing, smoke was introduced to five spiders that had been selected at random to be the test group. One cigarette per habitat was lit every night for ten days, then placed on top of the habitat and underneath a glass container to contain the smoke. Both the control group and test group were tested every other night. Results Over time, the test group had a 43% averaged decrease in web strength. Conclusions/Discussion The data supported the hypothesis by showing that secondhand smoke did decrease the strength of spider webs over time.	
Summary Statement This project investigated the effects of secondhand smoke on living organisms.	
Help Received Mother took pictures; Father lit cigarettes and dealt with the cigarettes	