



**CALIFORNIA STATE SCIENCE FAIR
2012 PROJECT SUMMARY**

Name(s) Anastasia B. Leopold	Project Number J1112
Project Title Plastic Lint: A Study of Microscopic Marine Debris	
Abstract Objectives/Goals My project studies plastic lint, microplastic pollution coming from synthetic fibers in the wash. Millions of fibers can easily get to the ocean each day. My project compared four different synthetic fabrics in both wash and rinse cycles to see how much plastic lint they each produce which can in turn be a source of marine debris. I hypothesized that the fleece would shed the most fibers. Methods/Materials I used my washing machine, 4 different types of synthetic fabric, Whatman Fisherbrand Glass Fiber Filter Circles G4, a vacuum pump, flask and funnel, a microscope, petri dishes, two five-gallon buckets, detergent and a measuring cup. I washed 1-yard samples of each fabric separately and filtered 250 ml of each wash and rinse cycle for fibers. I counted each sample under a microscope and recorded the number of fibers. I repeated this three times with more rounds still to be completed. Results The first wash of each fabric released the highest amount of fibers as expected. On average, the wash phases released more fibers than the rinse phases, with some exceptions. The second round showed reduced fiber release, but in Round 3, the total number of fibers went back up showing that fibers continued to come off in high numbers. I am continuing with more rounds to see if there is a clear trend line. In general, the fleece fabrics shed the most although the black minkie fabric had the highest rinse release numbers. Conclusions/Discussion My results partially support my hypotheses because it has shown that one fleece fabric shed the most fibers. My data shows that all synthetic fabrics shed a lot of fibers, but it can vary from wash to wash. This project is important because it means millions of microplastic fibers are being let into our oceans every day since very few are filtered out in water treatment centers.	
Summary Statement My project studies a new type of plastic marine debris: plastic lint coming from synthetic fabrics in the wash.	
Help Received Mr. Phillip Crump for help with my procedure; my science teacher for supplies and support, my mom for helping me with the wash.	