



**CALIFORNIA STATE SCIENCE FAIR
2016 PROJECT SUMMARY**

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| Name(s) Kirsten A. Jilot | Project Number 36194 |
| Project Title How Does an Electromagnetic Field Affect Single-Celled Organisms? | |
| Abstract Objectives/Goals The purpose of my project was to determine the effects of an electromagnetic field on single celled organisms. The experiments involved observing three different types of single-celled organisms exposed to an electromagnetic field. This involved obtaining live single-celled organisms (paramecium, euglena, and amoeba). Then, using a bell wire, I attached a DC power pack to a light bulb, creating a complete circuit. One side of the wire was attached to a pool of organisms. Measurements were made by visually recording the behavior of the single-celled organisms before, during, and after they were exposed to the electromagnetic field. Methods/Materials Electromagnetic Field (DC powerpack, wire, light bulb), Microscope, three types of single-celled organisms (euglena, amoeba, paramecium). I observed each type of organism before, during, and after exposure to the electromagnetic field. This procedure was then done two more times. Results The results showed that paramecium acted by moving slower. They were affected by the field for a few minutes, but then adapted to the field and returned to their original speed. The amoeba began to shake and move slower once the field was turned on, and continued this behavior for the whole time that the field was on. A few minutes after it was turned off, they returned to their original behavior. The euglena shook and changed direction once the field turned on, and many died. Once the field turned off, it took much time for the remaining euglena to return to their original behavior. Conclusions/Discussion The information gained from this project could be used by scientists to confirm a possible variable in their experiments with single-celled organisms. The information gained could also be used by scientists to aid in determining the effects of electromagnetic fields on humans. Since there still has been no conclusion to this debate, my results could assist in finding the truth to whether or not the fields are harmful to human cells. | |
| Summary Statement The purpose of my project was to determine how electromagnetic fields affect single-celled organisms | |
| Help Received I designed and conducted the experiment myself. My science teacher helped me understand how to present the data in graphs. | |