



**CALIFORNIA STATE SCIENCE FAIR  
2015 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Lauren M. Polyakov</b>   | <b>Project Number</b><br><b>S2211</b> |
| <b>Project Title</b><br><b>A Worm's Life:The Social Network: A Study of the Effects of Social Interaction on Regeneration of Lumbriculus variegatus</b>   |                                       |
| <b>Abstract</b><br><b>Objectives/Goals</b><br>The objective was to determine whether the presence of one Lumbriculus variegatus affect the regeneration abilities of another Lumbriculus variegatus.<br><b>Methods/Materials</b><br>Segmented worms, Lumbriculus variegatus, were used. 4 plastic containers, each labeled A through D, were filled with natural spring water. Each contained had 15 individual small compartments. Plastic pipettes were used to extract worms for measuring with a ruler. A scalpel was used to cut worms. A magnifying glass X4 was used for observation and a camera used for photographing. a ruler with white paper was used to measure growth.<br><b>Results</b><br>The worms kept in isolation demonstrated regeneration rate of 36.23%, which the three groups of worms engaged in social interactions regenerated at the rates of 45.25%, 45.69%, and 33.48%, respectively for groups C1, D1, and D2. Group B regeneration rate was lower than that of Groups C1 and D1, and was higher than D2. Results pointed to difference in regeneration rates perhaps by factors other than social interaction. All of the worms, regardless of the environment and social interaction, survived over the course of the experiment. Last year's experiment, with no social interaction, had a survival rate of around 50%.<br><b>Conclusions/Discussion</b><br>It appeared that "social interaction" or presence of another worm had no effect on the regeneration rates of the worms. The isolation group (Group B) demonstrated a regeneration rate lower than that of Groups C1 and D1, it was higher than that of D2. So, if social interaction affected regeneration, one would expect D1 and D2 to have similar rates, since they were kept together. Further, compared to last year's experiment, it was noticed the survival rate of worms was significantly higher, 100% compared to just 50% last year. This may be due, in part, to social interaction or to larger physical size of the containers used in the experiment. |                                       |
| <b>Summary Statement</b><br>Whether the presence of one Lumbriculus variegatus affects the regenerative abilities of another Lumbriculus variegatus.  |                                       |
| <b>Help Received</b><br>Father helped buy supplies and set up camera.   |                                       |