



# CALIFORNIA STATE SCIENCE FAIR 2002 PROJECT SUMMARY

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**Project Title**  
**The Effect of Ultraviolet and Fluorescent Radiation on Drosophila Development**

**Abstract**

**Objectives/Goals**  
The objective of this project was to examine the effects of ultraviolet radiation exposure on drosophila development and determine if U.V exposure is followed by Fluorescent Radiation counteracts the effects of U.V exposure.

**Methods/Materials**  
Drosophila were obtained and anesthetized with "Flynah" and separated into males and females and carefully labeled. The samples were exposed to various levels of UV radiation by using a standard U.V. hood. Following this, some of the samples were exposed to visible light. This was done to determine if exposure of drosophila to visible light after they have been exposed to U.V radiation has any corrective consequences. When the drosophila awakened, they were carefully examined under a compound microscope and their survival rates were studied along with their mobility profiles. A control group w studied as well.

**Results**  
It was established that UV radiation had an adverse effect in the drosophila mortality and mobility profiles. Careful microscope examination showed no apparent differences. When exposure to UV radiation was followed by exposure to visible radiation, the negative effects of UV radiation were minimized. The control group (in which no UV radiation or visible light exposure was applied) showed no adverse effects.

**Conclusions/Discussion**  
My initial concern of this project stemmed from the fact that because of pollution, the ozone layer ou atmosphere is depleting, and the UV radiation is increased and because of all this our environment is in jeopardy. We focused on this issue by examining the effects of UV radiation in drosophila--a classic example of such studies. Our hypothesis was that UV harms drosophila development. Specifically, we found that extended exposure of drosophila to UV lowers their mortality, and physiologically stresses them as it is reflected in their mobility profiles. When exposure to UV is followed by exposure to visibl radiation, the above stated results are minimized. The mechanism of this process is not fully understood at this time.

**Summary Statement**  
The project attempts to explore and understand how an organisms development can be genetically impaired by external factors.

**Help Received**  
I want to thank my brother Peter Savvas, who was born with a genetic defect, for giving me the inspiration to begin to study the field of abnormal species development and genetics in general. Because of the recent passing of my brother two months ago I would like to dedicate this project in his memory...