



Colorado Science and Engineering Fair

2025 Team Project Abstract Form

Please print 2 copies of the completed form. Sign both copies, keep 1 for your notebook and submit 1 copy to your Regional Fair Director with your other paperwork.

Title of Project: Reaching New Lights: An Explorative Study on the Occurrence of Biofluorescence in Amphibia

Team Leader's Name: Amelie Hunziker

Team Member 1: AJ Gruenewald

Team Member 2:

School and City: Monarch Highschool, Louisville

Sponsor's Name: Eric Gordon

Category: Animal Sciences

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

Biofluorescence in herpetofauna is a relatively new field with most existing studies lacking data on important areas. We collected data on the characteristics of fluorescence in amphibia to fill in gaps in current datasets (such as individuals' sex, maturity, snout vent length, circadian rhythm, ect...) to help lay foundations for proper analysis of current hypotheses. By shining blue light on different species, we observed biofluorescence in western tiger salamanders, marbled newts, spotted salamanders, and marbled salamanders. Our observations align with previous studies such as bone fluorescence in marbled and spotted salamanders, brighter colored patterns showing more fluorescence, and fluorescence along the cloaca and central side. But we also discovered some new information as, to our knowledge, there haven't been published reports of biofluorescence in marbled newts. We seek to address gaps in data and expand on it, however, our sample size is still too small to be conclusive, so further research on more specimens is necessary before any true conclusions and proper analysis can be made. Eventually, after more is known about this phenomenon, we hope to shift our focus to developing new techniques for conservation as amphibians are an important indicator species for the health of environments.

We hereby certify that the above statements are correct and the information provided in the Abstract is the result of one year's research. We also attest that the above properly reflects our own work.

Team Leader's Signature: _____

Date: _____

Team Member 1's Signature: _____

Date: _____

Team Member 2's Signature: _____

Date: _____

In addition, all students must complete the ISEF Student Checklist (1A), Research Plan, Approval Form (1B), and Checklist for Adult Sponsor (1), and any other ISEF forms required for this type of project. See the International Rules and Guidelines for form requirements. Return COPIES of all of these forms to your Regional Fair Director with your Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**