



Colorado Science and Engineering Fair

2025 Individual 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: Small Scale Erosion Control

Finalist's Name: Stella Baker

School and City: Evergreen High School, Evergreen

Sponsor's Name: Stephanie Seevers

Category: Environmental Engineering

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

My project is focused on designing, testing, and comparing small scale erosion control methods. I live in a town where the effects of erosion and deposition are all around me, and the effects are often unsafe and costly to combat. Although this project's scope is narrow, by finding the most effective control methods, those designs can eventually be scaled up to help erosion of any kind; from farmlands to urban development. Over the course of this project I designed and constructed miniature rapid prototypes of an exiting method of erosion control as well as a new design. Both designs, with a control group, were tested with water and sand on an angled stream table, where observational and numerical data was combined to determine effectiveness. My null hypothesis was that there would be no difference between the designs, but this was rejected by the data. The erosion control blanket design was significantly more effective than the control and retaining wall designs, while control and retaining walls were roughly the same. This is likely because the surface area of sand was greatly reduced and the water flowed above the blanket with little seeping through throughout the trials. This is a promising start, and my next steps would be to revisit the new design and test alterations of it, as well as other novel designs. I would also conduct more trials to reduce error in the data and to observe the effectiveness of these methods after a longer period of use.

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

Finalist'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 you Finalist Verification/Permission Form. **A signed copy of this form must be included in your notebook.**