



Colorado Science and Engineering Fair

2024 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: Sustainability That Grows on You

Team Leader's Name: Will Thompson

Team Member 1: Will Thompson

Team Member 2: Dmitriy Kazantsev

School and City: Centaurus High School, Lafayette

Sponsor's Name: Nick Cady

Category: Environmental Engineering (ENEV)

Division: Senior (9th - 12th grades)

Abstract (250 words or less):

The hydrofoil industry is characterized by high performance foam and resin composite materials, and its booming growth has called for a re-evaluation of the environmental impact of production, manufacturing, and end of life cycles. This project examines the application of mycelium foam as a high performance material, suitable as an alternative to Styrofoam wing blanks. Our findings illustrate its ability to mold to highly specific shapes, and withstand high loads suitable for the hydrofoil industry. The data collected examines flow characteristics of molded mycelium, stress analysis of mycelium and fiberglass composite forms, and methods for mycelium production. It also illustrates some of the limitations it faces in ultra-specific shapes, and how production and wing design are affected by mycelium growth. Ultimately, the findings support mycelium's capacity to function as a high performance material, and its environmentally friendly production and waste processes demonstrate its ability to reduce waste and support sustainable development in high performance foam industries.

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: Will Thompson

Date: 2-28-24

Team Member 1's Signature: Will Thompson

Date: 2-28-24

Team Member 2's Signature: DMITRIY

Date: 2-28-24

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.