



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: Determining the Distribution of Red Fluorescent Protein marked Agrobacterium Tumefaciens within different species of Legumes

Finalist's Name: Maxwell Minson

School and City: Broomfield High School, Broomfield

Sponsor's Name: McKinley Coppock

Category: Micro & Molecular Biology

Division: Senior (grades 9 - 12)

Abstract (250 words or less):

Agrobacterium Tumefaciens' unique mode of infection has been used as a reliable technique for creating transgenic plants for the last 4 decades. And although there have been previous studies that map the interactions between the bacteria's movement within plants, the studies were mostly in-vitro, not actually mapping the movement in target species. This study attempts to map the movement of Agrobacterium Tumefaciens' genetic material through 3 species: Pinto, Garbanzo, and Northern White beans. By investigating the pattern of distribution of T-DNA, this research could contribute to a better understanding of the movement of A. Tumefaciens' genetic material in transgenic legumes and A. Tumefaciens disease progression in other dicotyledonous plants.

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.**