

ABSTRACT GUIDELINES

A project abstract is a brief paragraph or two highlighting and/or summarizing the major points or most important ideas about your project. It allows judges to quickly determine the nature and scope of a project. It emphasizes these aspects: purpose (hypothesis), methods (procedures used), data summary or analysis, and conclusions.

Abstracts must include sufficient information for judges to determine the nature and significance of the project, the adequacy of the investigative/design strategy, the nature of the results, and the conclusions. It should be a summary of the substantive results of your project and not merely list topics to be discussed. It should have an intro, body and conclusion. It is a well-developed paragraph, should be exact in wording, and must be understandable to a wide audience. Abstracts should be no more than 250 words, formatted in Microsoft Word, and single-spaced, using size 12 Times New Roman font.

Tips:

- Omit details and discussions.
- Use the past tense when describing what was done. However, where appropriate use active verbs rather than passive verbs.
- Use short sentences, but vary sentence structure.
- Use complete sentences.
- Don't abbreviate by omitting articles or other small words in order to save space.
- Avoid jargon and slang, use appropriate scientific language.
- Use concise syntax, correct spelling, grammar, and punctuation.
- Make sure scientific notation, Greek letters, bold, italics, or other special characters/symbols appear correctly.
- List all additional team researchers, whether they are or are not presenting, if applicable.

SAMPLE ABSTRACTS

Presentation Title: The Viability of Tree Leaves for Cellulosic Ethanol

Research Topic: Testing Select *Quercus* & *Acer saccharum* Species for Glucose Content through Acid & Enzyme Hydrolysis

School: Grove High School

Have you ever wondered if there will be a new biofuel that will help solve the current gas crisis? Biofuels are made from a biomass or plant material. In this project, green leaves and leaf litter from two sugar maple varieties and two oak tree varieties are being tested as a viable replacement for corn and soybeans in ethanol production. The purpose behind this project is to determine which of the leaves of two species of sugar maple and two species of oak hold more glucose that would make them a viable source for cellulosic ethanol. It was hypothesized that the sugar maple leaves would contain more glucose than the oak leaves. There are two methods that can be used to determine the glucose level in plants. A popular method used is acid hydrolysis followed by enzyme hydrolysis. Another not so common method is enzyme hydrolysis alone. Both methods were tested. Enzyme hydrolysis alone was most effective for leaves, shorting the

time and expense to process the leaves for ethanol. The results of the experiment showed that leaves from the white oak variety contained the most glucose in green leaves and the leaf litter. The hypothesis that maple leaves would contain more glucose than the oak was rejected. But the hypothesis that tree leaves in general could contain enough cellulosic glucose to be considered an alternative source for ethanol was accepted.

Presenter: Ryan T. Caudill

Tribe: Cherokee

Presentation Title: Self-Sustaining Power Vehicle (SSPV)

Research Topic: To Create a Vehicle that does not need Nonrenewable Fuel but Makes Its Own Power

School: Mescalero Apache High School

The purpose of this project is to create a vehicle that doesn't need any nonrenewable fuel. Instead of using gas/diesel or even Biofuel, elements around the testing location will be used. The SSPV will be an Electric Vehicle that will produce its own Power. It will create its own power by using solar energy and the wind. It will be able to harness the sun by using solar panels and the wind by using small wind generators.

The average car, roughly, for every liter of petrol you burn, your car emits 2.4kg/5 .2910943m of CO₂. The average motorist who drives 20,000km/12427.4238mi a year will therefore emit anything between 2000kg/4409.245lb and 7000kg/15432.3584lb of CO₂ a year. So, by switching to an SSPV a lot of money will be saved. Also, more than half of the pollution the vehicles will produce will be cut. Moreover, motorists will be able to cut back on using any nonrenewable fuel. This will help improve air/health conditions, causing longer and stronger lives.

Presenter: Albert Valdez

Tribe: Mescalero