

# Research Tips

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This project category gives you an opportunity to design and conduct an experiment that demonstrates or tests a concept or principle related to biotechnology or biomedicine. Like any scientific research, the main goal is to formulate a testable hypothesis, design an experiment that tests the hypothesis, generate and analyze the appropriate data, and present the results clearly and creatively.

Although this is a challenging category, we encourage you to consider a research project. There is no better way to see what science is really like! Many participants in this category have gone on to longer internships after the Expo.

## Research at School

If you cannot gain access to a lab, you can still work on a research project. For example, we have had past participants conduct projects at their school and have their mentors visit them there. Many microbiology projects are well suited to being conducted outside of a research lab. Several schools that have biotechnology programs are well-equipped to conduct research experiments given some materials from an industry mentor (plasmids, media, etc.). Be sure that any materials transferred between a company and a school meet school safety guidelines.

## Lab Notebooks

In the past, many excellent projects have missed awards because of the condition of the lab notebooks. Unlike other science fairs, the Expo stresses the importance of keeping a lab notebook very much like scientists working in the biotech industry must. Note that the standard we hold notebooks to is higher than the one the lab you are working in may follow! Be sure to follow the guidelines for lab notebooks carefully!

## Projects Still in Process

We recognize that students have differing lengths of time to work on projects. Some students will not be able to complete data collection on their project by the time of submitting papers for prejudging. If you do not finish collecting data, you should outline the work done to date and discuss what you would advocate for next steps. If you have sufficient data, you can try to make some preliminary statements about possible trends. You may submit an updated paper at the Expo itself, but judges may not have time to read it carefully.

## Special Judging Structure

At the Expo, all students will interact with judges during an initial poster session. 4-5 Semi-finalists will be announced and will present their work to a panel of judges. ***All students in this category should be prepared to present their work with a Powerpoint presentation of no more than 10 slides, lasting 7 minutes.***

## Other Science Fairs

Students with winning projects/honorable mentions will be encouraged to submit their projects to the Washington State Science and Engineering Fair,(WSSEF) the local 'feeder' for the National Intel Fair.

Intel Science Talent Search: <http://www.sciserv.org/sts/>

Intel International Science and Engineering Fair: <http://www.sciserv.org/isef/index.asp>

Washington State Science and Engineering Fair: <http://www.wssef.org/>

Many Expo students have gone to national level competitions afterwards. Before you begin your project, make sure that you are compliant with the entry requirements for the WSSEF so that you can use your project for both!