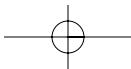
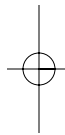
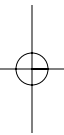
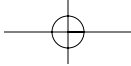


PART

I

**A Complete
Guide to Science
Fair Projects**



1

SCIENCE FAIRS AND SCIENCE FAIR PROJECTS

What Is a Science Fair Project?

A science fair project is different from any other type of project you work on at school. Why? Because it is an independent educational activity that encompasses a variety of skills, many of which you have to teach yourself as you go along. A science fair project gives you hands-on experience and knowledge in your own independent field of study involving science, math, or engineering. It is a challenging extracurricular assignment that allows you to use your own ideas or a topic that you develop with your science instructor to investigate a scientific problem or question that interests you. You will not only be learning about a specific field of science and perhaps acquiring a unique skill in this field, but getting to know what it would be like to work in this field as an adult.

For example, you will learn how to investigate, network, conduct interviews, follow rules and guidelines, use various tools and equipment, analyze data, draft an abstract, write a report, prepare a display, and speak in public. With work and dedication on your part, the experience you will gain and the skills you will achieve from this extraordinary activity will be well worth all the time you put into it. The reason is plain and simple: as you make progress and begin to see your project develop and come together, your self-esteem will soar, and the project that was initially such a challenge, will eventually become a grand personal achievement—unique only to you.

What Is a Science Fair?

Every spring, thousands of students in grades 5–12 prepare science fair projects for competitions held by school districts, counties, and states. These fairs are public exhibitions of the students' projects to recognize their work and to stimulate interest in science. Professionals from the scientific community often judge the science projects. Students who participate can earn valuable experience along with educational grants, scholarships, and other prizes. Additionally, many college recruiters give science fair project participation high marks in considering an application for college admission.



Every year, thousands of students enter state, regional, or foreign affiliate science fairs of the Intel International Science and Engineering Fair like this recent state fair in Massachusetts.

When you participate in a local science fair, you have a chance to move on to a higher level of competition in a state or regional science fair. Today, most regional and state science fairs are charter affiliated with the Intel International Science and Engineering Fair (ISEF), which is considered the World Series of science fairs. (See Appendix D for a complete listing of state, regional, and foreign science fairs currently affiliated with Intel ISEF.) The grand finale of all state and regional science fairs in the United States and in several other countries is the Intel International Science and Engineering Fair (Intel ISEF).

The Intel ISEF is sponsored by Intel Corporation and several other major companies and organizations and is administered by Science Service, Inc., a national, nonprofit group based in Washington, D.C. In addition to the Intel ISEF, Science Service administers the Discovery Channel Young Scientist Challenge (for middle school students) and the very prestigious Intel Science Talent Search (formerly called the Westinghouse Science Talent Search) for high school students. These events are considered to be the most prestigious competitions in precollege science. (For more information about the Discovery Channel Young Scientist Challenge or the Intel Science Talent Search and other notable science fair project competitions, see Appendix E.) Science Service also offers wonderful programs and publications, including the weekly publication *Science News*.

What Is the Intel International Science and Engineering Fair (Intel ISEF)?

According to Science Service, the nonprofit organization that has administered this event for over 50 years, the Intel ISEF is the only international science fair project competition for students in grades 9–12 in the world. The top high school students from each Intel ISEF–affiliated fair are invited to compete at this prestigious convention, which is held annually in a major city, usually in the United States. The fair welcomes about 1,200 contestants, on average, from nearly 40 different countries. To see if there is a state or regional Intel ISEF–affiliated science fair near you, see Appendix D.

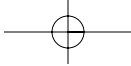
The Intel ISEF is, in a word, incredible! You would be awed by the sheer magnitude of this event, which hosts the finest science fair projects in the world, displayed by exhibitors from every part of the globe, many of whom come dressed in their finest suits or school uniforms. These exhibitors are often accompanied by an entourage of mentors, teachers, and families eagerly snapping photos and waving flags at awards ceremonies. Along with the exhibitors, there is an impressive group of Intel ISEF associates and judges who make up a Who’s Who list in various scientific fields.

It is a scene like no other, except perhaps the Olympic games, and this is not an exaggeration. The annual event is a weeklong affair complete with opening and closing ceremonies, formal parties, awards presentations, workshops, networking meetings, sight-seeing tours, and of course intense judging rounds. Exhibitors compete for over \$2 million in college scholarships, tuition grants, internships, and ultimately (for the top grand prize winners) a chance to attend the Nobel Prize ceremonies in Stockholm, Sweden.

When you consider the opportunities the Intel ISEF presents—meeting students who will be tomorrow’s scientific leaders, networking with the best minds in science, gaining exposure to the scientific community, and possibly winning awards (some of which could pay your entire college tuition for four years)—your science fair project is sure to take on a whole new meaning to you. I wish you great success on your project. Perhaps someday you too may be invited to attend the Intel ISEF as a contestant. It is the experience of a lifetime.

If you would like more information about the Intel ISEF, the Intel Science Talent Search, the Discovery Channel Young Scientist Challenge, or an affiliated fair in your area, please write to:

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1719 N Street, N.W.
Washington, DC 20036
Phone: (202) 785-2255
Fax: (202) 785-1243
E-mail: sciedu@sciserv.org
Internet: www.sciserv.org



The Intel ISEF Guidelines

If you've read up to this point, you might be wondering if your local county, state, regional, or country science fair is affiliated with the Intel ISEF. Chances are that it is. Therefore, the focus of this book is on creating, developing, experimenting, and presenting a top-notch science fair project according to the Intel ISEF rules and guidelines. The following sections are organized according to the steps that you should take in preparing a science fair project for such a fair.

