

**THE NATIONAL ORGANIZATION FOR THE
PROFESSIONAL ADVANCEMENT OF
BLACK CHEMISTS AND
CHEMICAL ENGINEERS (NOBCCChE)
GULF COAST CHAPTER**

RULES AND GUIDELINES

**FOR
THE
SCIENCE FAIR COMPETITION**

GRADES 7-12

The purpose of this publication is to provide teachers, science bowl and science fair coordinators with the guidelines for the NOBCCChE Science Fair Competition.

SCIENCE FAIR INFORMATION

First, second, and third place science fair winners in a school and/or district level science fair may be entered. The registered organization (Houston Urban League, Upward Bound, etc.) or the administrative or district science coordinator may enter projects not entered by the school.

- A team of judges will judge each science fair project. The decisions of the judges will be final.
- The exhibitor must be present at the time of judging and prepared to make an oral presentation to the judges explaining his/her project.

Each school may enter a total of 16 projects. Schools will be allowed to enter additional projects space permitting. Availability spaces will be filled on a first-come, first-served basis.

Science Fair Categories (Junior and Senior Divisions)

Biology (Zoology & Botany)
Computer Science
Mathematics

Chemistry
Engineering
Physics

Recognition

Each Science Fair exhibitor will receive a Certificate of Participation. Judges may select a first, second and third place winner in each category in each division. The first, second, and third place winners will receive a medallion and a Certificate of Award. A Grand Prizewinner will be selected from the first place winners in each division. They will receive a trophy and a certificate. Grand Prize and first place winners will be invited to the NOBCCHE Student and Teacher Recognition Banquet in June 2007.

RULES AND GUIDELINES FOR SCIENCE FAIR COMPETITION

Entry forms received after the deadline will not be accepted. A violation of any rule will result in the disqualification of the exhibit.

The rules and guidelines include those from the national office of NOBCCChE. Please read all the guidelines for the NOBCCChE Science Fair before entering student projects. Projects entered in the NOBCCChE Science Fair must not violate any of the following rules

BEFORE YOU BEGIN...

- (1) Prior to starting any experimental research, every potential science fair exhibitor must write a research plan. The research plan should state what question is going to be answered and the hypothesis (If...Then). The plan should include (a) problem and hypothesis, (b) methods or procedures. Details of safety measures, animal care measures, survey questions and populations, if applicable, should be included.
- (2) Prior to starting any science fair project, every potential science fair exhibitor must complete the Designated Adult Supervisor Form. The designated adult supervisor may be a teacher, a parent, or other adult. A copy of this form is included in this guide.
- (3) Students are strongly encouraged to use the International System of Units (SI) this system of units for projects entered in the NOBCCChE Science Fair.

SCIENCE FAIR GUIDELINES

- (4) Only one entry is allowed per exhibitor.
- (5) Students must be enrolled in public, parochial, or private school, grades 7-12, to be eligible to compete in this science fair.
- (6) Exhibits may consist of a demonstration model, an experiment, a working mechanism, or charts, diagrams or collections that have a scientific objective.
- (7) The work presented must be the work of only one student.
- (8) All exhibits must have a freestanding backdrop.
- (9) The exhibitor must be present and prepared to make an oral presentation explaining his/her project.
- (10) The size of the exhibit must not occupy a space in excess of 122 cm (48 in.) wide (side to side); 76 cm (30 in.) deep (front to back); and 274 cm (9 ft.) high. If the project is to be displayed on a tabletop, then the maximum height for the display itself is approximately 198 cm (6 ft., 6 in.). If the display requires electricity for demonstration purposes, the entrant must furnish a good quality, 9-foot, properly

grounded electrical cord. Projects exceeding these dimensions will be disqualified. Standard 36" x 48" tri-fold display boards are highly recommended.

- (11) The title of the exhibit must be at least 72-point font.
- (12) The name of the student, school and school district must NOT appear on the project, notebook, report, log, and/or journal.
- (13) Each exhibit must contain an abstract of the project that is prominently displayed. The abstract must contain (a) title of the project, (b) what the exhibitor intended to accomplish, (c) steps used to complete the project, and (d) conclusions.
- (14) Projects selected to enter the national competition will be required to have a 75-word summary of the project in language that can be understood by non-scientists. The summary should follow the title page. In the event your research is chosen, the summary will be used in preparing press releases to convey information about your project to the general public.
- (15) All projects must be durable and safe. Do not bring any materials used in the project.
- (16) No live animals, open flames, preserved animal, chemicals, dangerous equipment, cell cultures, bacteria, molds, microorganisms, soil, liquids (including water), and solvents may be displayed at the fair. However, if approved to use in research, pictures may be used on the display.
- (17) Research using animal subjects or models must be performed in a certified laboratory approved for such use and conform to all applicable research ethics guidelines. Research projects involving the unethical use of animal subjects or models will be disqualified. The student's research is eligible for entry in the Science Fair competition if: (a) The student has no physical contact with the animals. (b) If the material on which the student is working is supplied to the student by the supervising scientist. (c) If the animals involved are sacrificed, it is for some purpose other than the student's research. In these cases, a statement from the supervising scientist attesting to the above must be included with the student's research report. The statement must include the following information: name, title, place of employment, address, telephone number, and signature of the qualified scientist.
- (18) An Informed Consent Form (page 11) is also required for all projects involving human subjects, including surveys, and for projects that might involve violation of privacy act, or potential risk (physiological projects, sensitive surveys). Students competing in the SEFH may substitute form 4B. If a survey is part of the project, a copy of the survey must accompany the Informed Consent form. Forms are to be turned in on the date of the Science Fair.

- (19) Students may use commercially available products, hair samples or baby teeth acquired at home, plant tissue and established cell or tissue cultures.
- (20) When consumable alcohol and tobacco products and drugs (prescription or over-the-counter) are used in projects, substance must be obtained by and used under the direct supervision of adult project supervisor.
- (21) If deemed necessary, a qualified scientist may be used to evaluate the procedure and or safety of an experiment. The qualified scientist must sign the bottom of the Designated Adult Form. For cell cultures, bacteria, and molds studies, a qualified scientist is required.
- (22) Students should follow safety rules related to the handling of living organisms and chemicals. Books on safety may be checked out from the public library.
- (23) Approval is needed for the following project. (a) Projects involving dangerous chemicals or equipment, cell cultures, microorganisms, environmental sampling, and human subjects, including surveys. (b) Soil and water projects in which culturing of unknown organisms is the object of the project or when samples would be likely to contain pathogens or hazardous materials procedures that are invasive and nutritional studies with potential physiological symptoms. (c) All projects involving drugs, whether prescription or over-the-counter drugs, require approval. Approval will not be given for research that includes illegal drugs. (d) Projects where students are using their own blood.

ENTRY/EXHIBIT GUIDELINES

- (24) Each school may enter their first, second and third place winners into the NOBCCHE Science Fair.
- (25) Staple **copies** (not originals) of the Research Plan and Designated Adult Supervisor Form, to the back of the Entry Form along with a copy of any other forms and statements required for the project. Students not having the required forms at registration will be **DISQUALIFIED** and not allowed to display the project. Students competing in the SEFH may replace NOBCCHE forms (except the Entry Form) for approved SEFH forms.
- (26) A laboratory notebook, log, or journal must be displayed with each project.
- (27) NOBCCHE reserve the right to disqualify projects deemed hazardous by the fair officials.
- (28) The exhibitor is responsible for setting up the display during the designated time for set-up and dismantling the display after the competition has been completed.

THE RESEARCH REPORT

Each student must write a report about a research project that they individually conduct. It must be the sole composition of the student. The report should be creative, original, and interpretative in character. The paper should be a minimum of five pages and a maximum of ten pages in length; typed, double-spaced on white paper, single-sided, and stapled in the upper left-hand corner. The font must be Arial or Times New Roman and of a 12 point font size. The research report, including all appendices, tables, charts, bibliography, etc. may not exceed ten pages. Reports exceeding the ten-page limit may be disqualified from competition. The full name of the student should appear on the upper right-hand corner of each sheet.

The report should include a specific title, a short introduction describing the background and purpose of the work, an experimental section including both methods and results, and conclusion discussing the results and their implications. A bibliography of references should also be included. Details illustrating procedures and results should be included in tables, diagrams, charts, photographs, drawings or maps and drawn or labeled neatly.

Each student must include a 75 - word abstract of the project in language that can be understood by lay people. The abstract should follow the title page. In the event that your research report is chosen, this abstract will be used in preparing press releases to convey information about your project to the general public. All reports become the property of the NOBCCChE Science Competition Committee. Students should keep a copy of their report for personal use.

What is meant by a science, mathematics or engineering project? It is a study in any field that interests you and for which you have the equipment to deal adequately. Judges recognize that students may not have expensive equipment or facilities to do work that are entirely original (though many contestants have). However, the overall ability to conduct scientifically sound research, as well as skill in following directions, will be evaluated. Do not think there is a need for expensive equipment, i.e., cyclotrons, electron microscopes, or polymerase chain reaction instruments are essential for good experiments. If you have access to such equipment, that is fine; if you do not, remember that some of the best experiments have been done with equipment salvaged from junkyards, attics and basements. For engineering, a clear distinction should be made between gadgeteering and a genuine contribution. A "Rube Goldberg" device may be ingenious, but if it is not the most acceptable way to solve a problem to the potential user or unreliable in its functioning, then it cannot really be considered a valuable creative contribution.

REFERENCES OR LITERATURE CITED

This is a list of books, articles, pamphlets, and other communications or sources that you used for researching your topic and writing your paper. They are written or typewritten in this form:

A Book with one Author

Author's surname, first name. Title of Source (book), Place where published: Publisher, Date of Publication.

A Magazine Article

Author's surname, first name. "Title of article." Name of magazine Publication date: volume; page number(s).

Government Publications

Name of the government (country, state, etc.). Name of agency. Title of publication, Location of agency, Year published.

A Reference Book on CD-ROM

Source. CD-ROM. Place where produced: Producer, Date Produced.

Elements of on-line Entry (No print version)

Author's surname, first name. "Title." Volume number. Issue number/or other identifying number (year or date of publication): Number of pages or paragraphs if given/or n.pag. On-line. Name of computer network. Date of access. Available: specify electronic address. (Note: If certain items do not apply or are not available, simply skip those and to on to the next.)

Note: n.pag. Stands for no pagination.

Article in an Electronic Journal (No print version)

Author's surname, first name. "Title of article." Title of the electronic journal volume and issue number (Date of publication): Number of pages or paragraphs. Publication medium. Name of computer network. Date of access. The word Available: Electronic address.

Note: Example of publication medium - On-line. Example of computer network - Internet

Electronic File on the World Wide Web (No print version)

Author. "Name of article." Date of publication: n.pag. Publication medium. Name of computer network. Date of access. The word Available WWW: Electronic address.

Note: When there is no volume or issue number, the date of publication is not placed in parentheses.

CONSENT FORM

Note: Complete this form for all projects involving human subjects, including surveys. Required for subjects under 18 years of age. Use a separate form for each test subject. The project must be approved by the IRC before test subjects are asked to sign this form.

To be completed by Student Researcher, if applicable:

Name: _____

School: _____

Title of Project: _____

1. What are the research procedures in which the subject will be involved?

2. What are the possible discomforts or risks that may reasonably be expected by participating in this research?

3. What procedures will be used to minimize risks?

Directions: Before participating in this investigation/survey, please indicate that the student researcher has informed you, by checking each of the statements below:

_____ The researcher has explained the procedure(s) and possible discomfort/risks to me.

_____ I know how to contact the researcher if I decide to discontinue my participation in this research.

I understand the conditions stated above and consent to participate in this project.

_____ Date: _____
Test Subject's Signature

_____ Date: _____
Parent's or Guardian's Signature (required for participants under 18)