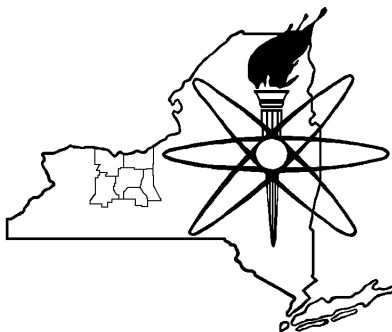


Central Western Section
Science Teachers Association of New York State, Inc.
presents the

Thirty-fifth Annual
SCIENCE CONGRESS

St. John Fisher College, Rochester, New York

Saturday, March 17, 2012



Introduction

Students who have participated in scientific and related research projects attend the Science Congress to communicate the results and be judged on the quality of their work. Their projects are displayed as exhibits. In addition, students with a penchant for writing science fiction are invited to enter an original story.

The Central Western Section of STANYS sponsors Science Congress as a means of stimulating interest and proficiency in the sciences. STANYS-CWS includes the counties of Livingston, Monroe, Ontario, Seneca, Wayne, and Yates. Only students from these counties, in grades 6-12, may enter a project and/or a science fiction story.

The Science Congress is affiliated with the STANYS State Science Congress and the Intel International Science and Engineering Fair (organized by the Society for Science and the Public). These affiliations may present opportunities to students of selected projects to compete in state, national, and international competitions. The affiliation with ISEF requires that specific international research safety and ethical guidelines be followed by all students participating in the CWS Science Congress.

This brochure, entry forms, and more information about the Science Congress, is found on the CWS-STANYS website at <http://www.ggw.org/~cws>.

Send application forms to:

Mary Ellen Felter, Registrar
1147 Appian Way
Webster, NY 14580

General Information

Projects may be completed in any area of science including biology, chemistry, earth science, or physics. Projects may also be in engineering or the application of mathematical or computer principles to one of the areas of science. Students in grades 9-12 enter in the Senior Division and students in grades 6-8 enter in the Junior Division.

Entries must be submitted on official entry forms (links for online retrieval are listed in this packet). The entry fee is **\$3.00 per person**. Applications must be postmarked by **February 4, 2012**.

Each student will receive a certificate of participation. Cash awards, certificates, and special prizes will be awarded at the close of the Science Congress. In both the Senior Division and the Junior Division, up to three solo projects may be chosen for entry in the [STANYS State Science Congress](#), which is held in early June in Albany. Some Junior Division students may be selected to participate in the [Broadcom MASTERS competition](#). One project in the Senior Division may be selected for competition in the Intel International Science and Engineering Fair ([ISEF](#)). This prestigious competition will be held in **Pittsburgh, Pennsylvania from May 13th to the 18th, 2012**. The selected winner must attend the ISEF event. Expenses are paid by STANYS-CWS.

Entrants will receive further information about the regional fair in late February. Students set-up their projects from 7:45 to 8:30 a.m. Judging ends at noon. Projects are expected to remain in place until the end of the awards ceremony at approximately 2:30 p.m. The public is invited to view the exhibits during the Science Congress from 8:30 am until noon.

More Information

SCIENCE FICTION STORIES are expected to be the original work of entrants. They should not exceed 2500 words and must be typed. An entry form (junior or senior division) may be downloaded from www.ggw.org/~cws/forms.htm and submitted with **three copies** of a story. Stories are judged prior to the Science Congress event. A student who submits a science fiction story may also exhibit a project.

RESEARCH PROJECTS entered in the Science Congress **must conform to ISEF rules**. This means specific safety and ethical standards are to be followed during research and are to be verified by adult sponsors. You must read and follow the [International Rules and Guidelines 2012](#) booklet published by the Society for Science and the Public.

Links to the Guidelines, forms, and resources are found on the following ISEF Web pages:

<http://www.societyforscience.org/isef/document>

<http://www.societyforscience.org/Page.aspx?pid=312>

The [Intel ISEF Rules Wizard](#) helps students determine which forms are necessary.

ALL ENTRANTS with projects will submit an **Entry Form, Checklist for Adult Sponsor Form (1), Student Checklist/Research Plan (1A), and Approval Form (1B)** to the Science Congress Registrar by **February 4, 2012**. All four forms may be downloaded from the CWS website at www.ggw.org/~cws/forms.htm. Forms 1, 1A and 1B are also on the ISEF website at <http://www.societyforscience.org/page.aspx?pid=282> and have interactive fields.

EXHIBITS are to be self-supporting and show clearly the results of the project work. Exhibit space is limited to 76 cm deep by 122 cm wide. Posters, apparatus, photographs, and models can be used to demonstrate the project. Organic materials, chemicals, water, and flames are examples of items that cannot be displayed. Display protocol is detailed on page 20-21 of the ISEF [Guidelines](http://www.societyforscience.org/page.aspx?pid=314) or at <http://www.societyforscience.org/page.aspx?pid=314>

PROJECTS INVOLVING HUMANS, ANIMALS, DNA, tissue, pathogenic agents, or controlled substances must have prior approval of the Scientific Review Committee (this includes human surveys or experiments with pets). Students who need prior approval must submit Research Plan (1A) and Approval Form (1B) **before beginning research** to Dr Pavelka, chairman of the Scientific Review Committee/Institutional Review Board. If you have questions or need approval, contact:

Martin Pavelka, Ph.D.
Department of Microbiology & Immunology
University of Rochester
Box 601
Elmwood Avenue
Rochester 14642
585-275-4670, FAX 473-9573
martin_pavelka@urmc.rochester.edu

Projects requiring prior approval are discouraged unless the student is conducting the research in a research institution.

JUNIOR DIVISION PROJECTS may be the work of an individual or a team of two students. Partners should fill out separate forms found at www.ggw.org/~cws/forms.htm: Junior Division Entry Form, Checklist for Adult Sponsor Form (1), Student Checklist/Research Plan (1A), and Approval Form (1B). Each student pays an entry fee of \$3.00. These are to be postmarked by **February 4, 2012**.

One short research paper or lab report is expected to accompany the junior level exhibit along with **one** abstract of no more than 250 words. Students can expect to interact with several judges for about five minutes each. Selected projects may be eligible for the [STANYS State Science Congress](#) or the [Broadcom MASTERS](#) program.

Projects involving humans, animals, DNA, tissue, pathogenic agents, or controlled substances are not appropriate in the junior division! These projects require prior approval from Dr. Pavelka and adherence to high ethical and safety standards. Additional ISEF forms are required. To learn more about this topic and to find the proper forms visit the [ISEF guidelines Web page](#).

SENIOR DIVISION PROJECTS must represent the work of a **single** individual.

Projects involving humans, animals, DNA, tissue, pathogenic agents, or controlled substances require prior approval from Dr. Pavelka (see previous page) and adherence to high standards. Most of these projects can only be accomplished in research institutions. Regulations concerning these areas of research are described in the ISEF *Guidelines*. Sponsors and students **must read** the [ISEF Rules and Guidelines](#) **before the research begins**.

Two copies of the abstract (no more than 250 words) must accompany registration materials and the fee of \$3.00. Submission deadline is **February 4, 2012**.

An **electronic copy of the research paper** is due to the Lead Judge by **March 14**, prior to the Science Congress. A reminder will be sent to each student early in March. The comprehensive report should include the research design, data, conclusions, and a bibliography. Minor changes to this report may be made in the paper handed in at the Science Congress.

Two paper copies of the research report must be brought to the Science Congress. It is all right for this paper to show minor changes from the electronic version. **One** abstract must be displayed with the exhibit. It is strongly recommended that the original research journal or lab notebook be displayed.

Judging consists of a ten-minute oral presentation by the student that includes questioning by two judges at a time. Students should be prepared for several rounds of judging.

Senior Division exhibits may be eligible for selection to attend the STANYS New York State Science Congress or the International Science and Engineering Fair. **Any student selected to participate in the international fair is expected to attend!** All expenses are paid by STANYS-CWS.

Mentors for Students

The Science Congress Committee may be able to find an advisor for a student seeking help to develop a project idea and/or assist with technical problems. There are many scientists and engineers in the region willing to advise students in their research. For more information, contact:

Ms. Kimie Romeo:
585-544-4513(h)
Kimieromeo@yahoo.com

Questions?

If you have questions about the regional Science Congress, the state-level Science Congress, the International Science and Engineering Fair, or Broadcom MASTERS program contact:

Dr. Jutta Siefert Dudley
Science Congress Director
jdudley@brockport.edu

Judging Criteria

Judging is based upon how well the student understands the project and upon the quality of the work. Projects should involve laboratory, field or theoretical work and not just library research or gadgeteering. Creativity and originality will also be assessed. A student is not penalized for getting help from others (all professionals receive help to some degree in some way). However, the student will be judged on what he or she has done and not what others have contributed.

The guidelines for judges rating projects are as follows:

I. Evaluation of Written Report: To what extent

- is the statement or purpose clearly defined?
- does the method of investigation follow logically from the purpose?
- are the procedures used in analyzing the data appropriate?
- is the explanation of valid conclusions based upon the data?
- does the work appear to be original?
- is the written abstract a concise statement of the problem and conclusions?
- has the report demonstrated the ability to overcome obstacles?
- has the student used correct language, spelling, grammar, and footnotes?
- were controls and variables recognized and correctly used?

II. Evaluation of Oral Presentation: To what extent

- did the presentation and discussion reflect evidence of solid background knowledge of the topic?
- did the student respond to the judges' questions?
- did the discussion cover the subject matter to sufficient depth?
- did the student demonstrate poise and effective communication?
- did the discussion discriminate between established facts and the student's findings, and between hypothesis, results and conclusions?

III. Evaluation of Visual Presentation: To what extent

- do the demonstration equipment, pictures, and/or models support the project?
- is neatness shown in the workmanship of data tables, graphs, charts, etc.?
- are the models and/or visual aids well constructed?
- does the research journal document the progress of the project?

IV. Evaluation of Learning Experiences: To what extent

- does the student recognize the weaknesses of the study and possibilities for further investigation?
- was the background information sought from literature and/or resource persons?
- did the dialogue demonstrate individual effort and creativity?
- does the student exhibit an enthusiastic and positive attitude?

Hints to Entrants

1. Select a topic that will lend itself to personal research and experimentation. Become an expert in your topic through reading, talking with authorities in the field, and through your own investigations.
2. Keep a complete log of your experiment in a research notebook. Bring the notebook to Science Congress to display with your exhibit.
3. Prepare charts, graphs, and posters with care. Make them neat and large enough to be seen easily by the judges and viewers. Take pride in preparing your work!
4. When you orally present your project, emphasize the scientific principles involved. Do not spend too much time on the details of your procedure; your posters can show that information. Rehearse your presentation before an audience so it can be presented in a natural style. Have someone check your story or talk for proper use of grammar and spelling. Know your work well enough to be able to answer questions from the judges.
5. The written report helps organize data as well as thoughts. It should include the following sections:
 - A. **Title Page.** Center the title, and put your name, address, school, and grade at the bottom right.
 - B. **Table of Contents.**
 - C. **Introduction,** including hypothesis. It should explain what prompted your research and what you hoped to achieve.
 - D. **The Experiment,** including design and methodology. It should be detailed enough so that someone could repeat the experiment just by reading the paper. Include detailed photographs or drawings of self-designed equipment.
 - E. **Discussion.** This is the meat of your paper. The results and conclusions should flow smoothly and logically from your data. Be thorough. Compare your results with theoretical values, published data, commonly held beliefs, and/or expected results. Also include a discussion of possible errors. How were your results affected by uncontrolled events? What would you do differently if you repeated this project? What other experiments should be conducted?
 - F. **Conclusion.** Briefly summarize your results. Be specific and don't generalize. Never introduce anything in the conclusion that has not already been discussed.
 - G. **Acknowledgements.** Credit those who assisted you, including people, businesses, and institutions, as well as financial support and donated materials.
 - H. **References.** Include any resources that you refer to or cite (*i.e.* books, journal articles). See an appropriate reference in your discipline for format.