

Project Description

The U.S. Army, Navy and Air Force sponsored Junior Science & Humanities Symposium

Foreword. The vitality of the nation's defense is inherently dependent on the adequate availability of personnel with a high degree of orientation to science and engineering. These men and women are needed in uniformed functions, in the Army, Navy and Air Force in-house research activities, and in the private sector elements assisting in technological functions. It is essential that action be initiated to better ensure availability of people who are qualified and oriented to perform professional and support work in Defense life and physical sciences. Accordingly, this project description presents the general objectives and general approaches to the administration of the JSHS Program.

1. JSHS Objectives

Founded in 1958 by the Army and joined after 1995 by the Navy and Air Force, the primary aim of JSHS is to encourage students at the high school level to engage in original research in the sciences, engineering or mathematics. JSHS achieves this aim in a symposium format that features presentations of research conducted by high school students, public recognition and awards, and interaction with practicing researchers. The objectives of the JSHS program are:

- To promote research and experimentation in the sciences, mathematics, and engineering at the high school level.
- To recognize the significance of research in human affairs, and the importance of humane and ethical principles in the application of research results.
- To search out talented youth and their teachers, recognize their accomplishments at symposia, and encourage their continued interest and participation in the sciences, mathematics, and engineering.
- To expand the horizons of research oriented students by exposing them to opportunities in the academic, industrial and governmental communities.
- To increase the number of future adults capable of conducting research and development.

2. Program Structure

Each year, JSHS reaches approximately 10,000 secondary school students and teachers in regional symposia held throughout the United States, Puerto Rico, and in cooperation with the Department of Defense Dependents Schools of Europe and the Pacific. Forty-eight regional symposia are affiliated with the JSHS Program. Each regional symposium is administered by a university or another approved educational institution. The regional symposia invite the participation of high schools within their geographic region through direct mailings of program promotional materials and application materials.

In late April or early May of each year, the National JSHS is held at a selected educational institution or military base. The regional symposium is responsible for the selection of National attendees through the regional student research paper presentations and competition. The U.S. Army, Navy, and Air Force sponsor the following scholarships and other awards (subject to the availability and release of Government funds):

For 48 teachers...A \$500 award to one teacher at each of the 48 regionals, honoring the individual teacher's contributions to advancing student participation in research

For the regional finalists...

- ***An expense-paid trip to the National JSHS***, awarded to five finalists at each regional symposium. The National brings together over 360 participants in a program of educational and scientific exchange.
- ***An invitation to present their original research investigation at the National JSHS***, awarded to two finalists at each regional symposium.
- ***A total \$4,500 undergraduate, tuition scholarship***, awarded at \$2,000, \$1,500, and \$1,000 to each of three regional symposium finalists. (scholarship payable upon matriculation and upon meeting the JSHS scholarship conditions)

For the national finalists...

- ***Six \$16,000 undergraduate, tuition scholarships***, awarded to each of the 1st place finalists in the National research paper competition.
- ***Six \$6,000 undergraduate, tuition scholarships***, awarded to each of the 2nd place finalists in the National research paper competition.
- ***Six \$2,000 undergraduate, tuition scholarships***, awarded to each of the 3rd place finalists in the National research paper competition.
- ***An expense-paid trip to the London International Youth Science Forum***, an exchange program bringing together over 400 participants from 60 nations. The London trip is awarded to each of the 1st place finalists; the runner-ups are alternate winners.

Eligibility for the U.S. Army, Navy and Air Force sponsored scholarship awards require that the student researcher is either a citizen or permanent resident of the United States. Further, a \$30,000 cap for any one student finalist has been established. The Academy of Applied Science will administer the scholarships and monitor students' compliance with scholarship conditions (i.e. GPA, SMET major, full-time enrollment at accredited institutions).

3. Approach

The JSBS Program is administered under a prime grant between the U.S. Army Research Office, Research Triangle Park, N.C., and the Academy of Applied Science, Concord, N.H. Each year, the Academy requests proposals from qualified educational institutions to conduct the regional symposia on behalf of the U.S. Army, Navy and Air Force's JSBS Program. Following this proposal process, the Academy provides direct funding to selected educational institutions, or subgrantees. Subgrantees are required to assign a Program Director who is responsible for the overall management and administration of the regional symposium. This individual should possess sufficient knowledge and experience to organize and administer a scientific symposium for high school students and teachers. Generally, the management and administration of a regional symposium includes...

- Identify students, G9-12, with potential talent or demonstrated abilities in the sciences, engineering or mathematics. Suggested factors to include in the recruitment and selection process include (1) interest or demonstrated ability in conducting research; (2) potential for successful pursuit of scientific and technological areas as indicated from overall achievements, interests or creative abilities; (3) previous demonstrated abilities and interest in science (for example, extracurricular activities such as science clubs, science fairs); and (4) recommendations of high school teachers and administrators.
- Solicit and review the written reports of research conducted by high school students. A pre-symposium review is conducted to select those students who merit recognition at the regional level and to provide an opportunity for students to orally present the results of their research to the regional audience. Based on the pre-symposium review and review of the students' oral presentations at the symposium, the recipients of the U.S. Army, Navy and Air Force scholarships and other awards are selected.
- Expose attending students and teachers to research opportunities in the academic, industrial and governmental communities. Interaction with practicing researchers is provided through visits to research and development laboratories, discussion groups, presentations by keynote speakers, and the process of judging the students' research.
- Coordinate and oversee the administrative details involved with hosting a symposium. These include meeting space, housing, food services, transportation, communications with symposium participants, program publications, registration process, arrangement for emergency medical services, and supervision and chaperonage. Additionally, the program director oversees the financial administration of the subgrant award and the preparation of year-end financial and program reports.
- Assist students who are selected to attend the National symposium with registration details and with preparation for the National JSBS competition.
- Inform the Academy of Applied Science of the recipients of the 1) Teacher Awards Program, 2) Scholarships, and 3) National winners within ten days of the conclusion of the regional symposium. Contact information for the award recipients is required.

The Academy of Applied Science, National JSHS Office staff, provides consultative support to assist Program Directors in the administration of the regional symposia. In addition to the provision of funding, the National JSHS Office also provides detailed written guidance, judging criteria, printed materials in support of the program, administration of the sponsored scholarship awards, administration of the registration process for the National symposium, and insurance to cover accident or illness for regional symposium participants.

4. Program Performance. The performance of regional and national symposia requires the selection of sources capable of conducting symposia in accordance with the general program objectives and subject to approval by the U.S. Army Research Office Grants Officer. Generally, qualified subgrantees must be an institution of higher education or private, non-profit institution/organization. An institution of higher education is one that is determined by the Secretary of Education to meet the requirements of 34 CFR Section 608.2.