Academic Year 2020-21 Junior Science & Humanities Regional Symposia (JSHS) – Request for Proposal

Proposals are sought from qualified educational institutions to conduct and administer a Regional Symposium, under the Junior Science & Humanities Symposia (JSHS) Program, a U.S. Army, Navy, and Air Force sponsored STEM competition. Generally, qualified institutions include 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 20 U.S.C. 1001.

Founded by the Army in 1958 and joined by the Navy and Air Force after 1995, the primary aim of JSHS is to encourage students at the high school level to engage in original STEM research in preparation for future STEM career pathways. Under the authority 10 U.S.C. section 2192 (Improvement of education in technical fields: general authority regarding education in science, mathematics and engineering), the U.S. Army, Navy and Air Force designed JSHS to expose students to and educate them about STEM research opportunities across the Defense Industrial Base, while advancing the nation's scientific and technological progress. The participation in regional and national JSHS symposia enables students to present their research in a forum of peer researchers and practicing researchers from government (in particular Department of Defense or DoD), industry and academia. In addition, JSHS students receive public recognition and awards for their research achievements, while competing for scholarship funds.

JSHS is designed to:

- Promote research and experimentation in STEM at the high school level;
- Recognize the significance of research in human affairs and the importance of humane and ethical principles in the application of research results;
- 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;
- Recognize innovative and independent research projects of youth in regional and national symposia;
- Expose students to academic and career opportunities to STEM and to the skills required for successful pursuit of STEM;
- Expose students to STEM opportunities and careers in DoD laboratories; and
- Increase the future pool of talent capable of contributing to the national's scientific and technological workforce.

Up to forty-nine regional symposia are held nationwide and annually reach approximately 8,400 high school students and teachers throughout the United States, Puerto Rico, and in cooperation with the Department of Defense Dependents Schools of Europe and the Pacific. As a result of research paper competition held at the regional symposia level, students qualify for military-sponsored scholarships and may progress to the annual National JSHS. The National JSHS is held in April or early May of each year.

U.S. Army, Navy and Air Force STEM Programs

The Army continues its long tradition and strong commitment to the advancement of STEM education and literacy through the Army Educational Outreach Program (AEOP). Leveraging its most valuable assets—world-class scientists and engineers and research facilities—AEOP offers our Nation's youth and teachers a continuum of meaningful, real-world STEM enrichment activities, competitions and apprenticeship programs. For more information, please visit: www.usaeop.com

The Department of the Navy focus on STEM is threefold: 1) to inspire, engage, and educate the next generation of scientists and engineers; 2) to employ, retain, and develop our civilian technical workforce; and 3) to collaborate across the Naval STEM enterprise and with other agencies to maximize benefits to the DON. STEM programs are mission-critical investments in the DON current and future workforces and are critical to meet present and future war-fighting challenges. For more information, please visit: navalstem.navylive.dodlive.mil/.

The Air Force STEM program helps to provide employment to the over 15,000 high-caliber, civilian scientists, analysts, and engineers that work for the Air Force in laboratories, test facilities, and development/support centers around the country. If you are a technical individual interested in developing state-of-the-art technologies and weapon systems, there may be a place for you! For more information, please visit: www.afciviliancareers.com/.

For more information about DoD's Science, Mathematics And Research for Transformation (SMART) Scholarship for Service Program, please visit: smart.asee.org/

JSHS – STATEMENT OF WORK

The host institution is responsible for the management and administration of the regional symposium, including the conduct of the judging process to select students who will progress to the National JSHS. The host institution is required to assign a Regional 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.

Tasks required for the conduct and administration of a JSHS regional symposium include:

- Identify students, Grades 9-12, with potential talent or demonstrated abilities in STEM disciplines. 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.

- Conduct outreach to a diverse audience of 9-12 grade high school students to participate in a regional JSHS symposium. Maximize representation from underrepresented populations.

- Leverage the Virtual Mentoring program for new and already existing participant mentorships.

- Refer interested students with geographic or socio/economic barriers to participate in the Virtual Region (see Virtual Region attachment).

- Utilize JSHS central registration tool CVENT for Regional Symposia participants- including submitting all students. The registration tool allows the program to collect common metrics from all sites, and allows regional sites to customize local data collection.

- Facilitate data collection in support of JSHS program assessment efforts by encouraging program participants to complete surveys and to participate in focus groups, if requested.

- Align all regional symposia guidelines and rules for participants with the JSHS Core Rules of Competition (See attached Core Rules of Competition). This includes adherence to the IRB protocol and utilization of all JSHS provided Statement of Outside Assistance form.

- Solicit and review the written reports of research conducted by high school students. All students are required to submit an abstract as a part of their registration through CVENT. 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 the review of students' oral presentations at the symposium, the recipients of the U.S. Army, Navy, and Air Force scholarships and other awards are selected.

- Regions must schedule the Symposia before March 22, 2021.

- Submit a nomination for one or two regional student (11th grader) to be considered for the U.S. Presidential Scholars Program. Department of Education is looking to JSHS for nominations to widen their search to students who may qualify using other methods from academic rigor. Nominee does need have to be a regional winner (national finalist), but should fit established criteria (to be provided), to include: involvement in service (in school or community); leadership and character; writing samples; academic achievements; and discretionary points for extraordinary achievement such as heavy workload, family responsibilities, or obstacles overcome.

- 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 judging of students' research projects. Expose JSHS participants to DoD assets and facilitate interaction with DoD scientists and engineers, if any are available in the respective geographic area or in a virtual space.

- Coordinate and oversee the administrative details involved with hosting a symposium on site or virtually. 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 regional director oversees the financial administration of

the sub-award and the preparation of year-end financial and program reports.

- Leverage regional JSHS Alumni and integrate into local programming where possible. Support program effort in establishing National JSHS Alumni database.

- Assist students who are selected to attend the National symposium with registration details and with the preparation for the National JSHS competition.

- Submit scorecards and judges notes through CVENT for archival within 5 days of the conclusion of the regional symposium.

- Report the recipients of the 1) Teacher Awards Program, 2) Scholarships, and 3) National finalists within five days of the conclusion of the regional symposium. Contact information for the award recipients is required.

- Educate regional JSHS participants about additional STEM opportunities offered by the Army through the AEOP, the Navy, and the Air Force.

- Inform regional JSHS participants about the channels and processes for their research accomplishments to be highlighted as part of AEOP's communications and social media initiatives, per guidance from NSTA.

FUNDING

Funding for the JSHS program, to include National JSHS, scholarships and regional symposia, is provided by the U.S. Army, Navy, and Air Force under a cooperative agreement award with the U.S. Army Combat Capabilities Development Command and Battelle, and its Consortium of Partners. The National Science Teaching Association (NSTA), a 501(c)(3) in Arlington, VA, currently administers the JSHS Program as a member of the Army Educational Outreach Program (AEOP) Consortium. Proposals are sought each year from qualified educational institutions to conduct the regional symposia on behalf of the U.S. Army, Navy, and Air Force's JSHS Program.

Upon approval, direct funding will be provided by the AEOP sub-grantee (NSTA) for JSHS to selected educational institutions for the conduct of the JSHS Regional Symposium. Available funds support direct costs of the symposium for approximately 150-200 high school students and teachers. Administrative costs are $3,000 per region, no indirect or overhead expenses are paid due to the recruitment benefits for the cooperating universities.

Payment of awards to student research finalists are provided through the AEOP sub-grantee. To claim the award, each regional symposium is required to report through CVENT the details on the student and teacher recipients within 5 days of completion of the regional symposium.

Tri-service sponsored awards for JSHS regional symposia include the following (based upon the availability and release of funding):

For 49 teachers

- A $500 award to one teacher at each of the 49 regions, honoring the individual teacher's contributions to advancing student participation in research. The award can be divided up to three (3) teachers if desired.

For the regional student finalists...

- An expense-paid trip to the National JSHS (April 14-17, 2021, in Boston, MA), awarded to up 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, in either oral or poster competitions.
- A $2,000, $1,500, and $1,000 undergraduate tuition scholarship is awarded to each of the 1st, 2nd and 3rd place finalists of the regional symposium respectively. (Note: The scholarship is payable upon matriculation and upon meeting the JSHS scholarship conditions.)

For the national student finalists…

- A $12,000 undergraduate tuition scholarship is awarded to each of the 1st place finalists in the eight National oral competition categories.
- An $8,000 undergraduate tuition scholarship is awarded to each of the 2nd place finalists in the eight National oral competition categories.
- A $4,000 undergraduate tuition scholarship is awarded to each of the 3rd place finalists in the eight National oral competition categories.
- Each of the eight National poster competition categories awards: 1st place $550, 2nd place $450, and 3rd place $350.

JSHS PROPOSAL – FORMAT AND INSTRUCTIONS

Proposals for JSHS funding in FY21 are requested by October 23 2020, to provide sufficient lead time for host universities to recruit high school participation in JSHS. All proposals should include:

1) A technical proposal responding to the below requirements for the conduct of the JSHS regional symposium. Proposals should be a maximum of five pages and include a short biography for the proposed JSHS Regional Director, or Principal Investigator. (The biography is not included in the five page limit.)

2) A cost proposal and description of how funding will be utilized by categories are required. The template for the cost proposal is attached. (The cost proposal is not included in the five page limit.)

3) A proposal cover sheet identifying technical and financial points of contact. The template for the cover sheet is attached.

PROPOSAL SUBMISSION – DEADLINE AND CONTACT

Thank you for your interest in supporting the JSHS Program and contributing to the encouragement of our youth as future STEM leaders. Please submit technical and cost proposals prior to October 23, 2020. Please submit proposals as a PDF file to NSTA:

Alexis Mundis, Project Manager
National Science Teaching Association
1840 Wilson Blvd., Arlington, VA 22201
Tel. 703-312-9246
Email: amundis@nsta.org

TECHNICAL PROPOSAL REQUIREMENTS

New institutions must complete all of the following for their proposal (Returning institutions may submit the short form application only):

1. Cover Sheet, Technical Proposal - See Attachment. Please input information directly into this cover sheet.

2. Host Institution. Describe the credentials of the host institution and state philosophy and experience with the conduct of STEM educational outreach programs or competitions.

3. Describe proposed methodology and geographic reach to publicize JSHS to area high schools.
Note: *Host institutions will reference DoD STEM and career opportunities in marketing the JSHS program. Host institutions will include the NSTA in the distribution list for regional symposia announcements or call for papers that are distributed to high schools in the region to provide NSTA situational awareness. Host institutions will report demographic data on the students and teachers who apply and enroll in the JSHS.*

4. Describe outreach plan to publicize JSHS Regional Symposium to area high school students, teachers, and schools.

5. Describe any proposed efforts to reach out to entities which mentor academically motivated students from underrepresented populations to help prepare those students for successful competition in STEM and JSHS. Describe any additional efforts to recruit (and enroll) students or teachers who are considered underrepresented in STEM.
Note: Definition of underserved populations: Underserved populations include students from low-income families; students belonging to race and ethnic minorities that are historically underrepresented in STEM (i.e., Alaska Natives, Native Americans, Blacks or African Americans, Hispanics, Native Hawaiians and other Pacific Islanders); students with disabilities; students with English as a second language; first-generation college-bound students; students in rural, frontier, or other Federal targeted outreach schools; and females in certain STEM fields (e.g., physical science, computer science, mathematics, or engineering).

6. Describe the selection and application process required for student participation. (i.e. application form, abstract, paper) Present the process in bullet form with timetable of due dates for nominations of students by high school teachers, direct application by students to a centralized AEOP registration system, submission of abstract and final research paper.

7. Describe efforts to integrate DoD STEM professionals and resources in the JSHS regional symposium and to expose students and teachers to DoD STEM career opportunities. The services will assist JSHS regional symposia in identifying available local DoD support.

8. Describe efforts to promote additional STEM opportunities offered through AEOP and DoD to JSHS participants. AEOP and DoD published materials and electronic resources will be provided as available to support JSHS regional symposia in marketing AEOP and DoD STEM opportunities.

9. Describe or list the proposed activities during the 2020-21 JSHS Regional Symposium (i.e. Student paper competition; oral and/or poster sessions; career panels; lab visits, on-campus or off-campus; keynote speakers/themes; humanities component; speaker orientation for student presenters; teacher workshops or exchanges; student team building activity)

10. Describe the process to select the five (5) student delegates for the trip to the National JSHS, and attach regional judging criteria. Note the categories in the Core Rules of Competition which are the same for regional and National events.

JSHS Categories of Competition:

1. Biomedical Sciences Life Science (including natural sciences, microbiology, molecular/cellular, biochemistry)
2. Medicine and Health/Behavioral Sciences
3. Life Sciences
4. Environmental Science
5. Chemistry (including geochemistry, energy-alternative fuels, material science)
6. Physical Sciences including Physics, Astronomy
7. Mathematics and Computer Science, Computer Engineering, Cybersecurity
8. Engineering and Technology

11. Describe the process to recruit, train and support volunteer symposium judges and reviewers.

12. Project management and personnel.
List the names of key personnel and their role for the regional symposium.

13. Compliance with AEOP/JSHS Evaluation Requirements
Sites will administer or distribute evaluation tools (IRB forms, surveys) developed under AEOP and are encouraged to incorporate their own assessments of student learning into the program. Sites will participate in evaluation visits during the JSHS program and will help coordinate interviews or focus groups with JSHS students and adult mentors on site.

COST PROPOSAL – REQUIREMENTS AND GUIDELINES

The template for preparation of the cost proposal is presented as an attachment.

Sub-award section. An authorized representative of the subcontracting institution must sign this form. The National JSHS office's acceptance of the sub-awardee's proposal, as submitted by completion of the Regional Financial Statement and Technical proposal, results in the issuance of a sub-award that serves as a mutual agreement between the sub-awardee and the National Science Teaching Association (NSTA).

A Total "Actual" Direct Expense that exceeds the Total "Budgeted" Direct Expense must have prior approval from NSTA for reimbursement. Such requests for increased expenditures should include information regarding the level of proposed effort, changes in key personnel, or symposium scheduling. Total budget may not exceed previous year's budget without justification.

Due to the student recruitment benefit offered through the JSHS program, the policy regarding payment of overhead, and/or indirect expenses (administrative service fees) for the U.S. Army, Navy, and Air Force sponsored JSHS

Program is that overhead and/or indirect costs are not authorized and will not be reimbursed. Military funding is provided as per accounts listed on the Regional Financial Statement and are outlined below:

Both in budget and actual, Total Administrative Expenses (labor) may not exceed $3,000.

Operational Expenses include expenses for meeting space, housing, food services, transportation, communications with symposium participants, program publications, the registration process, arrangement for emergency medical services, and supervision and chaperonage. Additionally, the program director oversees the financial administration of the sub-award and the preparation of budgets and year-end financial reports. The following expense categories are listed on the Regional Financial Statement:

- speakers – payment of honoraria and other expenses related to securing symposium speakers
- food - payment and reimbursement of food expenses for symposium participants
- lodging - payment and reimbursement of lodging expenses for symposium participants
- travel- payment and reimbursement of travel expenses for speakers, judges, staff, other;
- buses or other ground transportation - (Note: due to budget constraints, reimbursement to schools for travel expenses may not be possible. This is a regional symposium decision that must be based upon the availability of funds. Any travel support required to engage underrepresented students should be presented in the proposal.)
- office operations - payment of direct expenses for supplies, postage, telephone, fax, etc., in support of symposium administration
- printing - payment of printing expenses related to printing symposia information
- facility rental - meeting room expenses and audio-visual support
- virtual programming tools and platforms- costs of online platform subscriptions, virtual conferencing tools, etc.
- miscellaneous - a general-catch all for expenses that do not relate to the above expense categories; however, miscellaneous expenses may not exceed 5% of Total Direct Expenses in either budgeted or actual expenses.

The intended use of sub-award funding is to cover the costs of administering a JSHS Regional Symposium that is rich in program and provides the best educational experience for the students. Expenses for hardware, software, clothing, gifts, and other expenses outside of the above categories are not allowed. Students must be allowed to compete at no-cost in their regional symposium or sub-regional symposium. Other activities/materials not required to participate/compete in the regional symposium may contain a fee, and NSTA should be notified of these fees.

The final Regional Financial Statement is due to the AEOP sub-grantee no later than June 30, 2021. Final payment will be made upon the completion of all technical and financial reporting.

JSHS FY 2021 PROPOSAL COVER SHEET

Region:			
Sub-awardee			
Administering institution:			
Geographic area served:			
Website URL:			
Program Director			
Name:		Title:	
Organization:			
Mailing Address:			
City:		State:	Zip:
Phone:	Fax:	E-Mail:	
Regional Director			
Name:		Title:	
Organization:			
Mailing Address:			
City:		State:	Zip:
Phone:	Fax:	E-Mail:	
Published contact	**(Note: Contact info will be published at http://www.jshs.org)**		
Name:		Title:	
Organization:			
Mailing Address:			
City:		State:	Zip:
Phone:	Fax:	E-Mail:	
Assistant Director			
Name:		Title:	
Organization:			
Mailing Address:			
City:		State:	Zip:
Phone:	Fax:	E-Mail:	

Financial Administrator

Name:	Title:	
Organization		
Mailing Address:		
City:	State:	Zip:
Phone: Fax:	E-Mail:	

Symposium dates and location

Date(s) of symposium_____

Site for event (include city/state)_____

Application Date _____

(Either the date that abstracts are due; or the date that nominations are due, before the abstract due date.)
This date will be published on the JSHS website, along with symposium dates.

Symposium attendance

Total # anticipated participants: Students (attendees and presenters) _____

Teachers _____Other _____

Sub-awardee/Administering Institution – Authorized certifying official

Name _____

Title _____

Telephone_____ Email _____

Signature _____ Date _____

Junior Science and Humanities Symposium

Core Rules of Competition

Junior Science and Humanities Symposium (JSHS) is a Tri-Service sponsored STEM competition for high school students enrolled in grades 9-12 who engage in research investigations in the sciences, technology, engineering or mathematics (STEM). Students are invited to compete in an affiliated JSHS regional symposium and may win the opportunity to advance to the National JSHS.

Students who wish to apply to JSHS should contact the JSHS regional symposium director in their area to obtain application guidelines and materials and be prepared to:

- Submit a written report (e.g. abstract or abstract and paper) of the completed research investigation through CVENT for review by a regional panel of judges;
- Submit the JSHS provided "Statement on Outside Assistance" form, which states your role in the conduct of the research investigation, describes any outside assistance received, and attests to the proper conduct of research procedures and protocols in any research involving vertebrate animals or human subjects; deliver a concise oral presentation to the symposium;
- Complete registration with all application materials through CVENT by the regional submission deadline;
- Comply with regional and national rules and policies that apply to the preparation of the written reports and the oral presentations.

The written and oral reports should present the results of the student's original research investigation. Assistance from teachers, mentors, parents, or other students may be obtained. However, students must clearly communicate their role in the completion of the investigation and understanding of the research results.

To request application materials, or to find out how you and your school may participate, please contact the director of the regional symposium in your area.

Schedule and Deadlines

Eligible high school students are invited to apply to the JSHS Regional Symposium in their area. Application deadlines vary by region with regional symposia held as early as October through

March 22. Students and teachers are strongly encouraged to visit the JSHS website to find the regional submission deadline.

September – December JSHS Regional Symposia invite student applications and teacher nominations. Regional symposia deadlines vary.

January – March JSHS Regional Symposia held.

April – May National JSHS held. National JSHS student finalists win the honor to progress to National JSHS at affiliated regional symposia. The number of student finalists who advance to National JSHS varies by regional symposium.

Core Rules and Guidelines for JSHS Submissions

Students apply to JSHS by submitting a written report (i.e. abstract and/or paper as required by the region) of the completed research investigation, and Statement on Outside Assistance through CVENT. Additional supplementary forms will be requested and communicate regional policies and procedures.

A first round of judging is conducted by university faculty and other STEM personnel who review the student's submissions to select those students who will compete in the regional symposium. Selected students may be invited to present their research in oral competition, poster competition, or attend as a student delegate. Selected presentations will represent the finest efforts of high school students in the state or region toward either original laboratory research, field research, or applied research. Both oral and poster presenters are competing at the regional symposium for the opportunity to advance to the National JSHS. The number of students who advance to National JSHS may vary based on the presentation format as determined by the regional symposium.

8 Categories of Regional and National Symposia

At regional and National Symposia, student research presentations will be organized into 8 categories. Categories are assigned based upon a review of all abstracts and the area of research suggested by the student. Student presenters must state on the abstract the major category and the sub-category of their research.

These 8 categories are:

Environmental Science
Environmental Science/Engineering: Bioremediation, Ecosystems management, Environmental engineering, Land Resource Management, Pollution, toxicity; impact upon ecosystem

Biomedical Sciences
Biomedical medicine, Microbiology, Cellular/Molecular Biology, Genetics, Immunology, Pharmacology, Virology

Life Sciences
Developmental Biology, Plant Physiology, Population Genetics, General Biochemistry,

Microbiology

Medicine & Health/Behavioral Sciences
Behavioral sciences, Biochemistry, Bioengineering, Disease Diagnosis and Treatment, Epidemiology, Immunology, Neuroscience, Physiology, Pathology

Engineering & Technology
Aerospace, Aerodynamics, Electrical Engineering, Energy – Solar, Vehicle Development, Devices, Mechanical Engineering, Robotics

Mathematics & Computer Science
Probability and Statistics, Mathematics, Computer Science – Algorithms, Databases, Networking, Computer Engineering

Physical Sciences
Astronomy, Physics-theoretical, Physics-Solid state, Acoustics, Optics, Thermodynamics, Particle Physics, Quantum Physics, Nuclear; Internet of Things–network of physical objects or “things” embedded with electronics, software, sensors, and network connectivity

Chemistry
Physical Chemistry, Materials, Alternative Fuels, Organic Chemistry (possibly in life science), Chemical Engineering, Earth Science, Geochemistry, Energy–Alternative Fuels, Material Science

Abstract Preparation

All JSHS student applicants must submit a 250-word maximum abstract in electronic format.

The abstract should accurately convey the essential nature of the research conducted and the most significant conclusions reached. A further purpose of the abstract is to attract the interest and curiosity of the non-specialist reader and thus encourage exchange, discussion, and elaboration between various authors and between authors and readers.

The format for the 250-word abstract includes 1-inch margins, keyed in 10 or 12-point font (Times or Times New Roman). Abstracts must be adequate in length but not exceed these specifications. The header preceding the abstract body must include:

1. Title of the research;
2. Authors name(s);
3. High school, high school city, high school state;
4. Name of teacher/mentor/sponsor and his or her organization. Precede the individual's name with a subheading (i.e. teacher, mentor, sponsor);
5. Include one line of space between the heading and the abstract body.

Symposium proceedings will include abstracts. Please carefully proofread your submission, since abstracts will not be typed or edited.

Research Paper Preparation

Affiliated regional symposia require submission of the research paper at varying times during the application process. Regional symposia may require submission of the research paper at the beginning of the application process, or invite papers after the first review of abstracts is completed. Requirements for the research paper follow.

- The paper should be a minimum of 5-6 pages and a maximum of 20 pages, including appendices and references.
  Submitted papers must be single spaced.
- Photography, graphs, tables, diagrams, charts, or other graphic representation presented in the paper must be simply presented and comply with the maximum file size limit of 1.8 Mb.
- A maximum size limit for the electronic research paper is 1.8 Mb.
- A recommended outline for the research paper includes:
  - a title page, or cover page stating the student's name, school address, and title of the research
  - acknowledgement of major assistance received
  - as applicable, statement that "research involving non-human vertebrates or human subjects was conducted under the supervision of an experienced teacher or researcher and followed state and federal regulatory guidance applicable to the humane and ethical conduct of such research"
  - table of contents
  - introduction
  - materials and methods
  - results (data or findings)
  - discussion and conclusions
  - references, or literature cited
  - and appendices (if necessary but please keep in mind that the introduction is far more valuable in the judging process than appendices of raw data)

Statement on Outside Assistance

All JSHS applicants prepare and submit a Statement on Outside Assistance form as a part of their registration. This form requires students to report on their contributions to the research investigation. Comments by the supervising teacher and/or supervising mentor are reported, to include 1) comments on the students' individual contributions to the research investigation or engineering/computer science project; and 2) acknowledgment that the student conducted the research in accordance with proper procedures and protocols for the conduct of animal research or human research. Students may only use the JSHS-provided form.

Eligibility Rules: Regional and National Symposia

1. Students may compete in only one regional symposium. The address of the student's school/organization determines the region.
2. Citizenship. Students must be a citizen or permanent resident of the United States or U.S. territory to participate in JSHS.
3. Continuation projects. Students may continue a research investigation; however, a study which merely adds data from a previous year's project is not considered a strong continuation project. If a continuation project is submitted, the student must discuss how the project was expanded (i.e. methodology, new variables); discuss any revisions in experimentation and present new data.
4. Team projects. A student may present a report on work done as part of a class project, or as a science fair project, or summer research project. If a presenter is part of a larger group, the presentation should focus on the coordinated efforts of all team members and properly acknowledge the contributions of the team (i.e. students, mentors, and/or teachers). A team leader should be selected to register and present the results of the group work. The research may not be presented by any other member of the team. The judging criteria used to judge all JSHS presentations remains the same.
5. Team projects awards. If an individual presenter from a group project is selected as a Regional finalist and is invited to present at the National JSHS, the same presenter must present at the National Symposium. Scholarships and other awards available at Regional and National Symposia are awarded to the presenter.
6. Projects that are demonstrations, 'library' research or informational projects are not appropriate for JSHS.
7. The date/time for the student's presentation is determined by regional and national symposia leadership. A student must be present for the assigned time or risk disqualification.

Research Involving Vertebrate Animals or Human Subjects

Research involving vertebrate animals or human subjects must be conducted under the direct supervision of a qualified teacher or mentor with an approved active protocol which complies with local, state, or federal regulations for such research. The JSHS requires students to acknowledge in their written research report, and in the "Statement on Outside Assistance," that proper procedures and protocols were followed. Projects which were conducted without proper supervision will be disqualified from both Regional and National competition.

The JSHS Program recognizes that students may conduct research in a high school setting, and both students and teachers may have questions on how to obtain proper approvals if the research is conducted in a school, home, or field research setting versus in a university laboratory.

General guidelines follow on experimentation involving vertebrate animals (adapted from Bonkalski et al, 1994):

- Only animals that are lawfully acquired shall be used in experimentation and their retention and use shall be in every case in strict compliance with state and local laws and regulations.

- Animals used in experimentation must receive every consideration for their bodily comfort; they must be kindly treated, properly fed, and their surroundings kept in a sanitary condition.
- No intrusive techniques may be used, including surgery, injections, or taking of blood.
- When animals are used by students for their education or the advancement of science, such work shall be under the direct supervision of a committee of individuals knowledgeable of applicable regulations governing the care and animal of animals in the conduct of the project.
- At no time should a student do harm to a vertebrate animal in the conduct of the research.

General guidelines follow on research involving human subjects (adapted from Bonkalski et al., 1994):

- No project may use drugs, food, or beverages in order to measure their effect on a person.
- Projects that involve exercise and its effect on pulse, respiration rate, blood pressure, and so on are approved if a valid normal physical examination is on file and provided the exercise is not carried to the extreme.
- If your research involves administration of questionnaires or surveys, a proper consent from subjects must be obtained.
- No human cultures of any type – mouth, throat, skin, or otherwise – will be allowed.
- Tissue cultures purchased from reputable biological supply houses or research facilities are suitable.
- The only human blood that may be used is that which is either purchased or obtained from a blood bank, hospital, or laboratory. No blood may be drawn by any person or from any person specifically for a science project. This rule does not preclude a student making use of data collected from blood tests not made exclusively for a science project. Blood may not be drawn exclusively for a science project.
- Experimentation involving human subjects requires direct supervision of a committee of individuals knowledgeable of applicable regulations governing the conduct of such research. Non-regulated research institutions (i.e. high schools) should establish a committee of knowledgeable teachers and other mentors to view the research plan prior to the conduct of the research.

Suggestions to Prepare for the Presentations

Remember, you are the expert. No one in the audience knows as much about your research investigation as you. Therefore, remember to explain your research in enough detail so the audience will understand what you did, how you did it, and what you learned.

Whenever possible, avoid jargon or unnecessary terminology. If it is essential to use specialized terms, remember to explain the specialized term briefly. Give your audience enough time to understand what you are trying to convey.

Graphs, tables and other representation help explain your results. Keep them simple and uncluttered. Focus on important information; for example, remember to name the variables on both axes of a graph, and state the significance of the position and shape of the graph line.

Deliver your presentation at a comfortable pace. It helps to practice your presentation before a non-specialized audience. Practice will help perfect the presentation and the timing. Do listen to the advice of your non-specialized audience but also get help from a teacher or other advisors as needed.

Requirements for the Oral Presentations

Session Timing
The research presentation may not exceed 12 minutes, followed by a maximum 6-minute question period. A session moderator will aid the student speaker in maintaining this schedule and in fielding questions from the audience. At the 12-minute point, the student speaker must stop the presentation even if he or she has not finished. Following the presentation, the session moderator will ask for judging panel questions. If time permits, the speaker may entertain questions from the audience while the exchange appears interesting and relevant. Questions intended to harass the student speakers will not be allowed by the session moderator. The speaker should repeat a question before answering so the audience may understand the entire dialogue.

Requirements for the Poster Presentations

Display
Materials for the poster may be pre-printed or hand written and may be attached to a tri-fold board as one large sheet or in pieces. Posters for competition must include and or meet the following standards:

- Poster board dimensions are 36" high x 48" wide. The poster board includes two folds; fold dimensions are 12” x 24” x 12”.
- Header boards are allowed and must be no larger than 10” high x 36” wide. The Header board should only contain a title.
  The poster should be visible from a 4 foot distance.
- The Title should be at least one inch (72 pts) in height. The student’s name and regional should be included and should be (48 pts). All other lettering should be in 24-point font size. (Point size indicated above is suggested size only).

- The poster should be balanced and organized in a logical, sequential order.
- Keep the amount of text to a minimum.
- There should be more emphasis on graphics, tables, charts, and graphs. These items should be cited on the poster board.
- Photographs in addition to other illustrations may be used. Figures may be in color.
- No hazardous materials are allowed. No specimens, no apparatus, no chemical reagents, no models are to be used during the presentation. Only printed material, affixed to the poster, will be allowed for the poster presentation.
- All materials must be prepared (printed) and "poster ready" in advance of arriving.

Judging Process

Judging Criteria

Regional and National judges evaluate students' presentations using the below criteria. National judges rank each of the presentations based on the criteria and using a scale from 1 to 5. The scores are tallied for each presenter and used as the basis for discussion among judging team members where each criterion is considered.

- Statement and identification of research problem
- Scientific thought, creativity/innovation, appropriate duration
- Research or engineering design and procedures
- Logical conclusion relevant to the research problem. What was learned? Did student recognize contribution to the field?
- Skill in communicating results

PowerPoint Suggestions

Student presenters are reminded to:

- Embed any video, or other presentation developed through other software, into PowerPoint.
- Save the PowerPoint presentation to an IBM-compatible thumb drive, and plug into available PC-based equipment with that thumb drive.
- Bring back-up media.
- If using video, students must comply with the following ground rules:
  - The video component cannot make up more than one (1) minute of the presentation and must be directly relevant to the project.
  - No audio or background music is permitted other than sounds that are an integral part of the research. Recorded or mechanically produced narration is not permitted. Narration must come from the speaker.
  - Videos (and audio, if any) may be used only for those aspects of the presentation that cannot adequately be presented in a slide. Video material presented must be an integral part of the research and should not be a substitute for presentation of data. Videos must not be used for presentation of common procedures, illustrating equipment or showing laboratory facilities. Videos should illustrate work that was done and should not be used for stimulation or aesthetic value.

2010-2021 JSHS Virtual Region

For the 2020-2021 competition year, an institution will host a Virtual Region. This Virtual Region is designed to reduce the geographic and socio-economic barriers participants may have to participating at their local regional symposium.

- Students wishing to participate in the Virtual Region must submit an application to the administrators of the JSHS program at NSTA that demonstrates a need to participate in this special designated region. Students not selected to participate in the Virtual Region will be directed to their local region for registration.
- Institutions wishing to apply to host the Virtual Region must follow all of the same proposal steps and deadlines.
- Institutions submitting a proposal to host a regional symposia may also submit a proposal to host the Virtual Symposia. Institutions could be awarded one, both, or none.
- The Virtual Regional Director is responsible for organizing and executing the virtual regional symposia events virtually and in accordance with the requirements outlined in the Regional RFP.
- As with all regions, 5 National finalists must be selected to compete in oral and poster presentations for the National Event.
- The Regional Director will travel to the National Event to attend the Annual Regional Directors Meeting and celebrate the successes of the National Finalists.

Regional Financial Statement

Junior Science & Humanities Symposium
National Science Teaching Association
1840 Wilson Blvd.
Arlington, VA 22201
Tel. 703-312-9246; FAX 703-243-3652

2020-2021 JSHS Regional Finanical Statement

JSHS Region: __Illinois (excluding Cook County)_____

Institution Name: ___Southern Illinois University Carbondale_____

Directions: Please see JSHS Cost Proposal Requirements and Guidelines, www.jshs.org This form is both the budget included in proposal and the final financial report for the end of the year.

Budget - Complete the appropriate columns, sign, and return with proposal

Actual - Complete after regional event, sign, and return as final invoice.

Direct Expense Items	Budget JSHS Sub-award	Budget Other Sources of Funding	Actual JSHS Sub-award	Actual Other Sources of Funding
Administrative Expenses				
Director/Coordinator		$ -	$ -	$ -
Office Support	$ 3,000.00	$ -	$ -	$ -
Other (phone, fax, computers, etc)		$ -	$ -	$ -
Total Administrative	*$ 3,000.00*			
Operational Expenses				
Speakers	$ -	$ -	$ -	$ -
Food	$ -	$ -	$ -	$ -
Lodging	$ -	$ -	$ -	$ -
Travel	$ -	$ -	$ -	$ -
Office Operations	$ -	$ -	$ -	$ -
Printing	$ -	$ -	$ -	$ -
Facility Rental	$ -	$ -	$ -	$ -
Virtual Programming Tools and Platforms	$	$	$	$
Miscellaneous (may not exceed 5% of Total Direct Expenses)	$ -	$ -	$ -	$ -
Total Operational	*$ -*	*$ -*	*$ -*	*$ -*
Total Direct Expenses (Administrative + Operational)	**$ 3,000.00**	**$ -**	**$ -**	**$ -**

Is initial installment requested? Yes (X) No ( )

Amount (50% maximum of total) $1,500

By what date? 12/31/2020

Check payable to (if different from institution name) _____

Budget Expenditure Approval

Signature of Authorized Representative Date

Actual Expenditure Approval*

Signature of Authorized Representative Date

*This signature releases the National Science Teaching Association (NSTA) on behalf of the U.S. Military (hereinafter called the Government), and discharges the NSTA and the Government, their respective officers, agents, and employees, of and from all liabilities, obligations, claims and demands arising from this subgrant and in consideration of the sum of $_____ which has been or is to be paid to _____(Sub-awardee). In the event that any part of the sum paid is not expended by the Sub-awardee, those funds will be returned to the NSTA. The Subawardee hereby assigns all rights, title and interest in and to all such unexpended funds, refunds, rebates and credits, to the NSTA, and agrees to effect prompt payment of the same.