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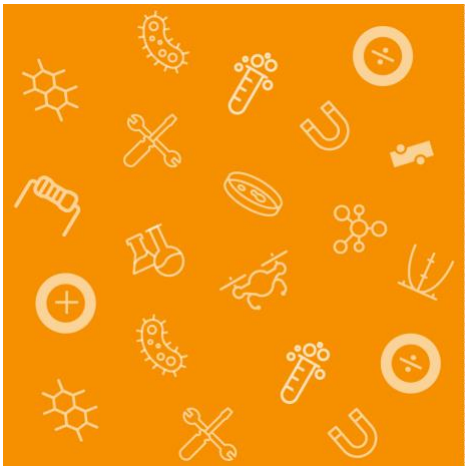

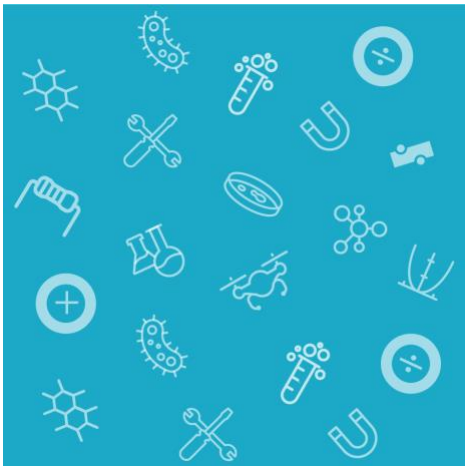

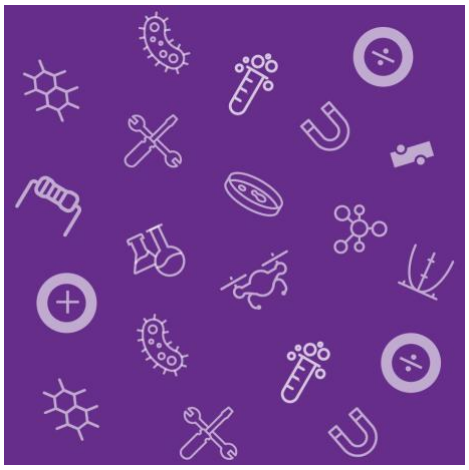


ARMY EDUCATIONAL OUTREACH PROGRAM

JSHS

2019 Annual Program Evaluation Report
Appendices

April 2020

aeop
ARMY EDUCATIONAL OUTREACH PROGRAM

1

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2 | Table of Contents

3 | Appendix A – FY19 JSHS Evaluation Plan

Questionnaires

As per the approved FY19 AEOP APP, the external evaluation of JSHS (conducted by NC State University) includes three post-program questionnaires:

1. AEOP Youth Regional Questionnaire to be completed by student participants of the JSHS regional events; and
2. AEOP Youth National Questionnaire to be completed by student participants of the JSHS national event; and
3. AEOP Mentor Questionnaire to be completed by research mentors, competition advisors, chaperones, teachers, or others who supported students as they prepared for or participated in JSHS national and regional events.

Questionnaires are the primary method of data collection for AEOP evaluation and collect information about participants' experiences with and perceptions of program resources, structures, and activities; potential benefits to participants; and strengths and areas of improvement for programs.

The questionnaires were aligned with:

- Army's strategic plan and AEOP Priorities 1 (STEM Literate Citizenry), 2 (STEM Savvy Educators) *and* 3 (Sustainable Infrastructure);
- Federal guidance for evaluation of Federal STEM investments (e.g., inclusive of implementation and outcomes evaluation, and outcomes of STEM-specific competencies, transferrable competencies, attitudes about/identifying with STEM, future engagement in STEM-related activities, and educational/career pathways);
- Best practices and published assessment tools in STEM education, STEM informal/outreach, and the evaluation/ research communities;
- AEOP's vision to improve the quality of the data collected, focusing on changes in intended student outcomes and contributions of AEOPs like CQL effecting those changes.

The use of common questionnaires and sets of items that are appropriate across programs will allow for comparisons across AEOP programs and, if administered in successive years, longitudinal studies of students as they advance through pipelines within the AEOP. Because the questionnaires incorporate batteries of items from existing tools that have been validated in published research, external comparisons may also be possible. All AEOPs are expected to administer the student and mentor questionnaires provided for their program.

Focus Group Site Visits

As per the approved FY19 AEOP APP, the external evaluation of JSHS includes site visit/onsite focus groups at the national JSHS events

Site visits provide the evaluation team with first-hand opportunities to speak with students and their mentors. We are able to observe the AEOPs in action. The information gleaned from these visits assists us in illustrating and more deeply understanding the findings of other data collected (from questionnaires). In total, evaluators' findings are used to highlight program successes and inform program changes so that the AEOPs can be even better in the future.

Evaluation Activities during JSHS Site Visits:

- One or two 45-minute focus group with 10-15 youth participants;
- One 45-minute focus group with 6-8 mentors;
- 30-60 minutes to observe the program (specifically, to see students engaged in program activities, preferably with their mentors); and
- 10-15 minute transitions between each evaluation activity for moving groups in and out and providing evaluators with time to organize paperwork and take nature breaks.

Selecting Focus Group Participants:

Evaluators appreciate event administrators' assistance in helping to assemble a diverse group of focus group participants who can provide information about a range of experiences possible in the JSHS. Ideally, this assistance is in the form of pre-event notifications of the focus groups, including scheduled dates, times, and locations.

Ideally, each student focus group will be inclusive of

- males and females (equal representation if possible),
- range of grade levels of students,
- range of race/ethnicities of students served by the program, and
- range of STEM interests (if known).

We prefer that students volunteer themselves after receiving the invitation to participate in the focus group, but will pursue students nominated by program staff or mentors. Participants may RSVP to evaluators privately or simply show up at the focus group location; however, sign-up sheets should not be used--if they are publically displayed, they breach participant confidentiality.

A number of different adult participants of JSHS--regional directors, national judges, chaperones, and even parents – are invited to participate in focus groups. We encourage any of these groups to participate in the adult focus group and have geared questions to be applicable across groups.

Data Analyses

Quantitative and qualitative data were compiled and analyzed after all data collection concluded. Evaluators summarized quantitative data with descriptive statistics such as numbers of respondents, frequencies and proportions of responses, average response when responses categories are assigned to a 6-point scale (e.g., 1 = "Strongly Disagree" to 6 = "Strongly Agree"), and standard deviations. Emergent coding was used for the qualitative data to identify the most common themes in responses.

Evaluators conducted inferential statistics to study any differences among participant groups (e.g., by gender or race/ethnicity) that could indicate inequities in the JSHS program and differences between students who participated only in R-JSHS and students who participated in both R-JSHS and N-JSHS. Statistical significance indicates whether a result is unlikely to be due to chance alone. Statistical significance was determined with t-tests, chi-square tests, and various non-parametric tests as appropriate, with significance defined at $p < 0.05$. Because statistical significance is sensitive to the number of respondents, it is more difficult to detect significant changes with small numbers of respondents. Practical significance, also known as effect size, indicates the magnitude of an effect, and is typically reported when differences are statistically significant. The formula for effect sizes depends on the type of statistical test used, and is specified, along with generally accepted rules of thumb for interpretation, in the body of the report.

4 | Appendix B – Student Focus Group Protocol

Facilitator: My name is [evaluator] and I'd like to thank you for meeting with us today! We are really excited to learn more about your experiences in JSHS. In case you have not been in an evaluation interview before, I'd like to give you some ground rules that I like to use in interviews. They seem to help the interview move forward and make everyone a little more comfortable:

- What is shared in the interview stays in the room.
- It is important for us to hear the positive and negative sides of all issues.
- Only one person speaks at a time.
- This is voluntary - you may choose not to answer any question, or stop participating at any time.
- We will be audio recording the session for note-taking purposes only. Audio will be destroyed.
- Do you have any questions before we begin?

Key Questions

1. **Why did you choose to participate in JSHS this year?**
    - How did you hear about JSHS?
    - Who did you hear about it from?

The Army Educational Outreach Program (AEOP) is a primary sponsor of JSHS. We do these interviews to help the AEOP create reports and defend funding for the program. They need specific information to defend the money for the program.

2. **We need to understand more about how JSHS is teaching students about STEM career opportunities in the Army and Department of Defense.**
    - During JSHS, did you learn anything about STEM careers in the Army or Department of Defense?
    - How did you learn about them (e.g., field trips, invited speakers, other activities, etc.)?
    - Are you interested in pursuing a career in STEM with the Army or Department of Defense?

3. **The AEOP sponsors a wide range of national STEM outreach programs other than JSHS. You are definitely eligible to participate in some of these programs and we need to know if you learned about them during JSHS.**
    - During JSHS, did you learn about any of the outreach programs that the AEOP sponsors? (SEAP, CQL, HSAP, SMART, etc.)
    - How did you learn about them?
    - Do you think that you will try to participate in any of those programs?

4. **Tell us about your experiences in JSHS this year.**
    - What, specifically do you think you got out of participating in JSHS?
    - How do your experiences in JSHS compare to your school experiences in STEM?
    - What would you say was the biggest benefit you gained from participating in JSHS?

5. **How did your experiences at the regional JSHS event you participated in compare to the experience you've had here at national JSHS?**

6. **Outside of the oral presentations and judging, what activities at national JSHS did you find most useful or enjoyable?**

7. **How would you describe your interaction with other JSHS participants at national JSHS?**

8. **Describe how you think that your JSHS participation might help you in the future.**

9. **Last Chance - Have we missed anything? Tell us anything you want us to know that we didn't ask about.**

5 | Appendix C – Mentor Focus Group Protocol

Facilitator: My name is [evaluator] and I'd like to thank you for meeting with us today! We are really excited to learn more about your experiences in JSHS. In case you haven't been in a focus group before, I'd like to give you some ground rules that I like to use in focus groups. They seem to help the group move forward and make everyone a little more comfortable:

- What is shared in the room stays in the room.
- Only one person speaks at a time.
- If you disagree please do so respectfully.
- It is important for us to hear the positive and negative sides of all issues.
- We will be audio recording the session for note-taking purposes only. Audio will be destroyed.
- Do you have any questions about participating in the focus group?

Key Questions

1. **When you think about JSHS, what kind of value does this program add**?
    - How do you think students benefit from participating in JSHS?
    - Can you think of a particular student or group of students that benefit the most from JSS?
    - How have you benefited from participating in JSHS?

One of the primary sponsors of the JSHS program is the Army Educational Outreach Program (AEOP). The AEOP needs specific information to create reports and defend funding for its outreach programs.

2. **We need to understand more about how JSHS is helping students know more about STEM career opportunities in the Department of Defense, especially civilian positions.**
    - Have you seen any efforts by JSHS to educate participants about the Army, DoD, or careers in the DoD?
    - What strategies seem to be the most effective for JSHS students?
    - Do you have any suggestions for helping JSHS teach students about careers in the DoD?

The AEOP sponsors a wide range of national STEM outreach programs that these students qualify for.

3. **The AEOP needs to know if JSHS is teaching students about the other STEM outreach programs that it sponsors.**
    - First, are you aware of the other programs offered by the AEOP? (e.g., SEAP, CQL, HSAP, etc)
    - Have you seen any efforts at JSHS to educate adults or students about the other AEOP programs?
    - What seems to work the best? The worst?
    - Any suggestions for helping the AEOP educate these students about the other programs?
4. **The AEOP is trying to make sure that its programs become more effective at reaching adult and youth participants from underserved and underrepresented groups (racial/ethnic groups, low SES, etc.).**
    - Have you seen any efforts by JSHS to help engage underserved or underrepresented groups of adults and youth?
    - What strategies seem to work the best? The worst?
    - Any suggestions for helping JSHS reach new populations of adult and youth participants?
5. **What suggestions do you have for improving JSHS?**
6. **Last Chance - Have we missed anything? Tell us anything you want us to know that we didn't ask about.**

6 | Appendix D – N-JSHS Participant Questionnaire

1. What was your level of participation in the national JSHS event?
   a. Poster presenter
   b. Research paper presenter
   c. Other
2. How many times have you participated in JSHS nationals?
   a. Once (this year)
   b. Twice
   c. More than Two Times
3. How did you learn about JSHS and why did you decide to participate?
4. What were your overall impressions of participating in the JSHS National Event?
5. How successful was the JSHS National event this year? (options: not very successful, somewhat successful, very successful, outstanding)
6. Rank your impressions of the following NJHS national event components (poor, fair, good, great, outstanding, N/A)
   a. R&D Lab Tour – USS America
   b. R&D Lab Tour - Fleet Readiness Southwest
   c. R&D Lab Tour – Naval Health Research Center
   d. R&D Lab Tour – Naval Medical Center
   e. R&D Lab Tour – National Marine Mammal Foundation
   f. R&D Lab Tour – Space and Naval Warfare Systems Center
   g. DoD STEM Experience – exhibits (Thursday)
   h. DoD STEM Experience - seminars
   i. DoD STEM and JSHS Alumni Meet Up
7. Share your impressions of the quality of student oral sessions by rating each of the following (options: strongly disagree, disagree, neutral, agree, strongly agree, N/A)
   a. The National JSHS office provided me with judging criteria and presentation guidelines in preparation for the competition.
   b. The time to deliver my presentation was sufficient.
   c. The judges' questions were appropriate.
   d. There was sufficient time to answer the judges' questions.
8. Share your impressions of the student poster sessions by rating each of the following: (options: strongly disagree, disagree, neutral, agree, strongly agree, N/A)
   a. The National JSHS office provided me with judging criteria and presentation guidelines in preparation for the competition.
   b. The time to deliver my presentation was sufficient.
   c. The judging process following my presentation was appropriate.
   d. At least two judges visited my poster, asked questions and provided me with feedback on future work.
9. Describe the support you received from your teachers/mentors in JSHS this year. For example – did mentoring occur as part of a class or was it outside of class, etc.

10. What are some suggestions you have for improving the mentoring that participants receive from their teachers/mentors?
11. Do you feel like the regional competition helped to prepare you for the JSHS nationals? Explain why or why not.
12. What are your overall impressions of the regional judging process? How could it be improved?
13. What are your overall impressions of the national judging process? How could it be improved?
14. After you participated in JSHS, how far do you want to go in school?
    a. graduate from high school
    b. go to a trade or vocational school
    c. go to college for a little while
    d. finish college (get a bachelor's degree)
    e. get more education after college
    f. get a master's degree
    g. get a Ph.D.
    h. get a medical related degree (M.D.), veterinary degree (D.V.M.) or dental degree (D.D.S.)
    i. get a combined masters/Ph.D.
    j. get another professional degree
15. Do you plan to pursue an advanced degree (beyond a bachelor's degree) in a STEM field?
    a. yes
    b. no
16. Do you plan to pursue a bachelor's degree in a STEM field?
    a. yes
    b. no
17. How interested are you in participating in the following programs in the future? (options: I've never heard of this program, not at all, somewhat interested, very interested)
    a. Unite
    b. JSHS
    c. SEAP
    d. REAP
    e. HSAP
    f. CQL
    g. GEMS Near Peer
    h. URAP
    i. SMART
    j. NDSEG
18. How many jobs/careers in STEM did you learn about during the JSHS National Event experience?
    a. none
    b. 1
    c. 2
    d. 3
    e. 4
    f. 5 or more
19. How many Army/DoD STEM jobs/careers did you learn about during the JSHS National Event experience?
    a. none
    b. 1
    c. 2
    d. 3

e. 4
f. 5 or more

20. How much do you agree or disagree with the following statements about Department of Defense (DoD) researchers and research?
    a. DoD researchers advance science and engineering fields
    b. DoD researchers develop new, cutting edge technologies
    c. DoD researchers solve real-world problems
    d. DoD research is valuable to society
21. Which of the following statements describe you after participating in JSHS National Event (options: disagree – this did not happen, disagree- this happened but not because of JSHS, agree JSHS contributed, Agree – JSHS was the primary reason)
    a. I am more confident in my STEM knowledge, skills, and abilities
    b. I am more interested in participating in STEM activities outside of school requirements
    c. I am more aware of other AEOP programs
    d. I am more interested in participating in other AEOP programs
    e. I am more interested in taking STEM classes in school
    f. I am more interested in earning a STEM degree
    g. I am more interested in pursuing a career in STEM
    h. I am more aware of Army or DoD STEM research and careers
    i. I have a greater appreciation of Army or DoD STEM research
    j. I am more interested in pursuing a STEM career with the Army or DoD
22. What were the most beneficial aspects of participating in JSHS this year for you?
23. Do you have suggestions for improving the JSHS program overall?

7 | Appendix E – R-JSHS Participant Questionnaire

Contact Information		
Please verify the following information:		
*First Name:		
*Last Name:		
*Email Address:		
All fields with an asterisk (*) are required.		

*1. Do you agree to participate in this survey? (required)(*Required)		
Select one.		
○	Yes, I agree to participate in this survey	
○	No, I do not wish to participate in this survey	Go to end of chapter

*2. What grade are you in at this time? (select one)(*Required)	
Select one.	
○	9th
○	10th
○	11th
○	12th
○	College freshman
○	Other, (specify)::

*3. What is your gender?(*Required)

Select one.

○	Male
○	Female

*4. What is your race or ethnicity?(*Required)

Select one.

○	Hispanic or Latino
○	Asian
○	Black or African American
○	Native American or Alaska Native
○	Native Hawaiian or Other Pacific Islander
○	White
○	Other race or ethnicity, (specify)::

*5. Do you get free or reduced lunches at school?(*Required)

Select one.

○	Yes
○	No
○	Choose not to report

*6. What type of area is the school you attend located in?(*Required)

Select all that apply.

☐	Urban - city
☐	Suburban - near a city
☐	Rural - in the country, not near a city
☐	I don't know

*7. What is the primary language you speak?(*Required)	
Select all that apply.	
☐	English
☐	Other language

*8. Did at least one of your parents graduate from a college or university?(*Required)	
Select all that apply.	
☐	Yes
☐	No
☐	Don't Know
☐	Choose Not to Answer

*9. What was your JSHS regional site? (Select ONE)(*Required)	
Select one.	
○	Alabama
○	Alaska
○	Arizona
○	Arkansas
○	California—Northern California & Western Nevada
○	California—Southern California
○	Illinois - Chicago
○	Connecticut
○	DoD Dependent Schools-Europe
○	DoD Dependent Schools-Pacific
○	District of Columbia – Washington DC
○	Florida
○	Georgia
○	Hawaii

○	Illinois
○	Indiana
○	Intermountain—Colorado, Montana, Idaho, Nevada, Utah
○	Iowa
○	Kansas—Nebraska—Oklahoma
○	Kentucky
○	Louisiana
○	Maryland
○	Michigan - Southeastern
○	Missouri
○	New England—Northern New England
○	New England—Southern New England
○	New Jersey-- Northern
○	New Jersey— Southern
○	New York—Long Island
○	New York—Metro
○	New York—Upstate
○	North Carolina
○	North Central—Minnesota, North Dakota, South Dakota
○	Ohio
○	Oregon
○	Pennsylvania
○	Philadelphia
○	Puerto Rico
○	South Carolina
○	Southwest
○	Tennessee
○	Texas
○	Virginia
○	Washington

○	West Virginia
○	Wisconsin-Western Wisconsin & Upper Michigan
○	Wyoming—Eastern Colorado

*10. PREVIOUS PARTICIPATION: Have you participated in any of the following AEOP programs previously and if so, how many times?(*Required)

Select one per row.

	I have not participated in this program	*Once*	*Twice*	*Three or more times*
*Gains in the Education of Mathematics and Science (GEMS)	○	○	○	○
*Junior Solar Sprint (JSS)	○	○	○	○
*eCYBERMISSION	○	○	○	○
*UNITE	○	○	○	○
*Junior Science & Humanities Symposium (JSHS)	○	○	○	○
*Research & Engineering Apprenticeship Program (REAP)	○	○	○	○
*Science & Engineering Apprenticeship Program (SEAP)	○	○	○	○
*High School Apprenticeship Program (HSAP)	○	○	○	○
*GEMS Near Peer Mentor Program	○	○	○	○
*Science Mathematics, and Research for Transformation (SMART) College Scholarship	○	○	○	○
*National Defense Science & Engineering Graduate (NDSEG) Fellowship	○	○	○	○

*11. How often did you use these STEM PRACTICES in school this year?(*Required)

Select one per row.

	Not at all	*At least once*	*Monthly*	*Weekly*	*Every day*
*Work with a STEM researcher or company on a real world STEM research project	○	○	○	○	○
*Work with a STEM researcher on a research project topic assigned by my teacher	○	○	○	○	○
*Design my own research or investigation based on my own question(s)	○	○	○	○	○
*Present my STEM research to a panel of judges from industry or the military	○	○	○	○	○
*Interact with STEM researchers	○	○	○	○	○
*Use laboratory procedures and tools	○	○	○	○	○
*Identify questions or problems to investigate	○	○	○	○	○
*Design and carry out an investigation	○	○	○	○	○
*Analyze data or information and draw conclusions	○	○	○	○	○
*Work collaboratively as part of a team	○	○	○	○	○
*Build or make a computer model	○	○	○	○	○
*Solve real world problems	○	○	○	○	○

*12. How often did you use these STEM PRACTICES in preparing for and competing at JSHS this year?(*Required)

Select one per row.

	Not at all	*At least once*	*Monthly*	*Weekly*	*Every day*
*Work with a STEM researcher or company on a real world STEM research project	○	○	○	○	○
*Work with a STEM researcher on a research project topic assigned by my teacher	○	○	○	○	○
*Design my own research or investigation based on my own question(s)	○	○	○	○	○
*Present my STEM research to a panel of judges from industry or the military	○	○	○	○	○
*Interact with STEM researchers	○	○	○	○	○
*Use laboratory procedures and tools	○	○	○	○	○
*Identify questions or problems to investigate	○	○	○	○	○
*Design and carry out an investigation	○	○	○	○	○
*Analyze data or information and draw conclusions	○	○	○	○	○
*Work collaboratively as part of a team	○	○	○	○	○
*Build or make a computer model	○	○	○	○	○
*Solve real world problems	○	○	○	○	○

*13. Do you feel that you made any gains in STEM KNOWLEDGE as a result of your JSHS experience?(*Required)

Select one per row.

	No gain	*Small gain*	*Medium gain*	*Large gain*
*In depth knowledge of a STEM topic(s)	○	○	○	○
*Knowledge of research conducted in a STEM topic or field	○	○	○	○
*Knowledge of research processes, ethics, and rules for conduct in STEM	○	○	○	○
*Knowledge of how scientists and engineers work on real problems in STEM	○	○	○	○
*Knowledge of what everyday research work is like in STEM	○	○	○	○

*14. Do you feel that you made any gains in these STEM SKILLS as a result of your JSHS experience?(*Required)

Select one per row.

	No gain	*Small gain*	*Medium gain*	*Large gain*
*Defining a problem that can be solved by developing a new or improved product or process	○	○	○	○
*Creating a hypothesis or question that can be tested in an experiment	○	○	○	○
*Using my knowledge and creativity to suggest a solution to a problem	○	○	○	○
*Making a model to show how something works	○	○	○	○
*Designing procedures or steps for an experiment that work	○	○	○	○
*Identifying the limitations of the methods and tools used for collecting data	○	○	○	○
*Carrying out an experiment and recording data accurately	○	○	○	○
*Creating charts or graphs to display data and find patterns	○	○	○	○
*Considering multiple interpretations of data to decide if something works as intended	○	○	○	○
*Supporting an explanation with my STEM knowledge or data from experiments	○	○	○	○
*Identifying the strengths and limitations of data or arguments presented in technical or scientific texts	○	○	○	○
*Presenting an argument that uses data and/or findings from an experiment	○	○	○	○
*Defending an argument based upon findings from an experiment or other data	○	○	○	○
*Integrating information from technical or scientific texts and other media to support your explanation of an experiment or solution to a problem	○	○	○	○

*15. Do you feel that you made any gains in your 21st CENTURY SKILLS as a result of your JSHS experience?(*Required)

Select one per row.

	No gain	*Small gain*	*Medium gain*	*Large gain*
*Thinking creatively	○	○	○	○
*Working creatively with others	○	○	○	○
*Using my creative ideas to make a product	○	○	○	○
*Thinking about how systems work and how parts interact with each other	○	○	○	○
*Evaluating others' evidence, arguments and beliefs	○	○	○	○
*Solving problems	○	○	○	○
*Communicating clearly (written and oral) with others	○	○	○	○
*Collaborating with others effectively and respectfully in diverse teams	○	○	○	○
*Interacting effectively with others in a respectful and professional manner	○	○	○	○
*Accessing and evaluating information efficiently (time) and critically (evaluates sources)	○	○	○	○
*Using and managing data accurately, creatively, and ethically	○	○	○	○
*Analyzing media (news) - understanding points of view in the media	○	○	○	○
*Creating media products like videos, blogs, social media	○	○	○	○
*Use technology as a tool to research, organize, evaluate, and communicate information	○	○	○	○
*Adapting to change when things do not go as planned	○	○	○	○
*Incorporating feedback on my work effectively	○	○	○	○

*Setting goals and and utilizing time wisely	○	○	○	○
*Working independently and completing tasks on time	○	○	○	○
*Taking initiative and doing work without being told to	○	○	○	○
*Priortizing, planning, and managing projects to achieve completion	○	○	○	○
*Producing results - sticking with a task until it is finished	○	○	○	○
*Leading and guiding others in a team or group	○	○	○	○
*Being responsible to others - thinking about the larger community	○	○	○	○

*16. Do you feel that you have experienced gains in your STEM CONFIDENCE as a result of your JSHS experience?(*Required)

Select one per row.

	No gain	*Small gain*	*Medium gain*	*Large gain*
*Interest in a new STEM topic	○	○	○	○
*Interest in pursuing a STEM career	○	○	○	○
*Sense of accomplishment from my work in the program	○	○	○	○
*Better prepared for more challenging STEM activities	○	○	○	○
*Confidence to try out new ideas or procedures on my own in a STEM project	○	○	○	○
*Desire to build relationships with mentors who work in STEM	○	○	○	○

*17. MENTOR SUPPORT: Which of the following best describes your primary research mentor?(*Required)	
Select one.	
○	I did not have a research mentor
○	Teacher
○	Coach
○	Parent
○	Club or activity leader (School club, Boy/Girl Scouts, etc.)
○	STEM researcher (industry, university, or DoD/government employee, etc.)
○	Other, (specify)::

*18. MENTOR SUPPORT: How often was your mentor available to you during your preparation for the JSHS competition?(*Required)	
Select one.	
○	I did not have a mentor
○	The mentor was never available
○	The mentor was available less than half of the time
○	The mentor was available about half of the time of my project
○	The mentor was available more than half of the time
○	The mentor was always available

*19. MENTOR STRATEGIES: The list below includes effective teaching and mentoring strategies. From the list, please indicate which strategies that your mentor(s) used when working with you in conducting your research and in preparation for the JSHS competition:(*Required)

Select one per row.

	Yes - my mentor used this strategy with me	*No - my mentor did not use this strategy with me*
*Helped me become aware of STEM in my everyday life	○	○
*Helped me understand how I can use STEM to improve my community	○	○
*Used a variety of strategies to help me learn	○	○
*Gave me extra support when I needed it	○	○
*Encouraged me to share ideas with others who have different backgrounds or viewpoints than I do	○	○
*Allowed me to work on a team project or activity	○	○
*Helped me learn or practice a variety of STEM skills	○	○
*Gave me feedback to help me improve in STEM	○	○
*Talked to me about the education I need for a STEM career	○	○
*Recommended Army Educational Outreach Programs that match my interests	○	○
*Discussed STEM careers with the DoD or government	○	○

*20. PROGRAM FEATURES: How SATISFIED were you with the following JSHS features?(*Required)
Select one per row.

	Did not experience	*Not at all*	*A little*	*Somewhat*	*Very much*
*Applying or registering for the program	○	○	○	○	○
*Communicating with your JSHS host site organizers	○	○	○	○	○
*The physical location(s) of JSHS activities	○	○	○	○	○
*The variety of STEM topics available to you in JSHS	○	○	○	○	○
*Research abstract preparation requirements	○	○	○	○	○
*Research presentation process	○	○	○	○	○

*21. PROGRAM FEATURES: How SATISFIED were you with each of the following JSHS program activities?(*Required)
Select one per row.

	Did not experience	*Not at all*	*A little*	*Somewhat*	*Very much*
*Student Oral Presentations	○	○	○	○	○
*Student Poster Presentations	○	○	○	○	○
*Judging Process	○	○	○	○	○
*Feedback from Judges	○	○	○	○	○
*Feedback from VIPs and Peers	○	○	○	○	○
*Invited Speaker Presentations	○	○	○	○	○
*Tours or Field Trips	○	○	○	○	○
*Team Building Activities	○	○	○	○	○
*Social Events	○	○	○	○	○

*22. PROGRAM FEATURES: How USEFUL were the following resources from JSHS regional and national websites?(*Required)

Select one per row.

	I did not use this resource	*Not at all*	*A little*	*Somewhat*	*Very much*
*JSHS Groundrules for Student Presentations	○	○	○	○	○
*Paper Submissions and Competition Deadlines	○	○	○	○	○
*Sample Papers	○	○	○	○	○
*Oral Presentation Tips	○	○	○	○	○
*Selected Articles – Conducting Research	○	○	○	○	○
*Poster Guidelines	○	○	○	○	○
*Participation Guideliens	○	○	○	○	○

*23. PROGRAM FEEDBACK: How much input did you have in selecting your JSHS research project?(*Required)

Select one.

○	I did not have a project
○	I was assigned a project by my mentor
○	I worked with my mentor to design a project
○	I had a choice among various projects suggested by my mentor
○	I worked with my mentor and members of a research team to design a project
○	I designed the entire project on my own

*24. PROGRAM FEEDBACK: What was your role at Regional JSHS? (Select ONE)(*Required)
Select one.

○	I was attending JSHS - I did not present my research
○	I was a non-competitive poster presenter
○	I was a competitive poster presenter
○	I presented my research in an oral symposium

*25. PROGRAM FEEDBACK: Which of the following statements apply to your research experience in JSHS? (Choose ALL that apply)(*Required)
Select all that apply.

☐	I presented a talk or poster to other students or faculty
☐	I presented a talk or poster at a professional symposium or conference
☐	I attended a symposium or conference
☐	I wrote or co-wrote a paper that was/will be published in a research journal
☐	I wrote or co-wrote a technical paper or patent
☐	I will present a talk or poster to other students or faculty
☐	I will present a talk or poster at a professional symposium or conference
☐	I will attend a symposium or conference
☐	I will write or co-write a paper that was/will be published in a research journal
☐	I will write or co-write a technical paper or patent
☐	I won an award or scholarship based on my research

*26. PROGRAM SATISFACTION: How SATISFIED were you with each of the following:(*Required)

Select one per row.

	Did not experience	*Not satisfied*	*Somewhat satisfied*	*Very satisfied*
*My working relationship with my mentor	○	○	○	○
*The amount of time I spent doing meaningful research	○	○	○	○
*The amount of time I spent with my research mentor	○	○	○	○
*The research experience overall	○	○	○	○

*27. FUTURE INTEREST: How interested are you in participating in the following programs in the future?(*Required)

Select one per row.

	I've never heard of this program	*Not at all*	*Somewhat interested*	*Very interested*
*Unite	○	○	○	○
*Junior Science & Humanities Symposium (JSHS)	○	○	○	○
*Science & Engineering Apprenticeship Program (SEAP)	○	○	○	○
*Research & Engineering Apprenticeship Program (REAP)	○	○	○	○
*High School Apprenticeship Program (HSAP)	○	○	○	○
*College Qualified Leaders (CQL)	○	○	○	○
*GEMS Near Peer Mentor Program	○	○	○	○
*Undergraduate Research Apprenticeship Program (URAP)	○	○	○	○
*Science Mathematics, and Research for Transformation (SMART) College Scholarship	○	○	○	○
*National Defense Science & Engineering Graduate (NDSEG) Fellowship	○	○	○	○

*28. STEM CAREERS: How many jobs/careers in STEM did you learn about during the JSHS program experience?(*Required)
Select one.

○	None
○	1
○	2
○	3
○	4
○	5 or more

*29. DOD CAREERS: How many Army or Department of Defense (DoD) STEM jobs/careers did you learn about during the JSHS program experience?(*Required)
Select one.

○	None
○	1
○	2
○	3
○	4
○	5 or more

*30. DOD RESEARCH: How much do you agree or disagree with the following statements about Department of Defense (DoD) researchers and research:(*Required)

Select one per row.

	Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*
*DoD researchers advance science and engineering fields	○	○	○	○	○
*DoD researchers develop new, cutting edge technologies	○	○	○	○	○
*DoD researchers solve real-world problems	○	○	○	○	○
*DoD research is valuable to society	○	○	○	○	○

*31. STEM INTEREST: AS A RESULT OF YOUR JSHS experience, are you MORE or LESS likely to engage in the following activities in science, technology, engineering, or mathematics (STEM) outside of school requirements or activities?(*Required)

Select one per row.

	Much less likely	*Less likely*	*About the same before and after*	*More likely*	*Much more likely*
*Watch or read non-fiction STEM	○	○	○	○	○
*Tinker (play) with a mechanical or electrical device	○	○	○	○	○
*Work on solving mathematical or scientific puzzles	○	○	○	○	○
*Use a computer to design or program something	○	○	○	○	○
*Talk with friends or family about STEM	○	○	○	○	○
*Mentor or teach other students about STEM	○	○	○	○	○
*Help with a community service project related to STEM	○	○	○	○	○
*Participate in a STEM camp, club, or competition	○	○	○	○	○
*Take an elective (not required) STEM class	○	○	○	○	○
*Work on a STEM project or experiment in a university or professional setting	○	○	○	○	○

*32. FUTURE ENGAGEMENT: After you have participated in JSHS, how far do you want to go in school?(*Required)

Select one.

○	Graduate from high school
○	Go to a trade or vocational school
○	Go to college for a little while
○	Finish college (get a Bachelor's degree)
○	Get more education after college
○	Get a master's degree
○	Get a Ph.D.
○	Get a medical-related degree (M.D.), veterinary degree (D.V.M), or dental degree (D.D.S)
○	Get a combined M.D. / Ph.D.
○	Get another professional degree (law, business, etc.)

*33. PROGRAM DATA: Do you plan to pursue an advanced degree (beyond a bachelor's degree) in a STEM field?(*Required)

Select one.

○	Yes
○	No

*34. PROGRAM DATA: Do you plan to pursue a bachelor's degree in a STEM field?(*Required)

Select all that apply.

☐	Yes
☐	No

*35. RESOURCES: How much did each of the following resources help you learn about Army Educational Outreach Programs (AEOPs)?(*Required)
Select one per row.

	Did not experience	*Not at*	*A little*	*Somewhat*	*Very much*
*Army Educational Outreach Program (AEOP) website	○	○	○	○	○
*AEOP on Facebook, Twitter, Pinterest or other social media	○	○	○	○	○
*AEOP printed materials	○	○	○	○	○
*JSHS program staff or site coordinator	○	○	○	○	○
*Invited speakers at JSHS	○	○	○	○	○
*Presentations or information shared at the JSHS competition	○	○	○	○	○
*My JSHS mentor(s)	○	○	○	○	○

*36. RESOURCES: How much did each of the following resources help you learn about STEM careers in the Army or Department of Defense (DoD)?(*Required) *Select one per row.*

	Did not experience	*Not at all*	*A little*	*Somewhat*	*Very much*
*Army Educational Outreach Program (AEOP) website	○	○	○	○	○
*AEOP on Facebook, Twitter, Pinterest or other social media	○	○	○	○	○
*AEOP printed materials	○	○	○	○	○
*JSHS program staff or site coordinator	○	○	○	○	○
*Invited speakers or career events	○	○	○	○	○
*Presentations or information shared at the JSHS competition	○	○	○	○	○
*My JSHS mentor(s)	○	○	○	○	○

*37. OVERALL IMPACT: Which of the following statements describe you after participating in the JSHS program?(*Required)

Select one per row.

	Disagree - This did not happen	*Disagree - This happened but not because of JSHS*	*Agree - JSHS contributed*	*Agree - JSHS was primary reason*
*I am more confident in my STEM knowledge, skills, and abilities	○	○	○	○
*I am more interested in participating in STEM activities outside of school requirements	○	○	○	○
*I am more aware of other AEOPs	○	○	○	○
*I am more interested in participating in other AEOPs	○	○	○	○
*I am more interested in taking STEM classes in school	○	○	○	○
*I am more interested in earning a STEM degree	○	○	○	○
*I am more interested in pursuing a career in STEM	○	○	○	○
*I am more aware of Army or DoD STEM research and careers	○	○	○	○
*I have a greater appreciation of Army or DoD STEM research	○	○	○	○
*I am more interested in pursuing a STEM career with the Army or DoD	○	○	○	○

38. PROGRAM FEEDBACK: What are the three most important ways that JSHS has helped you?	
Benefit #1:	
Benefit #2:	
Benefit #3:	

39. PROGRAM FEEDBACK: What are the three ways that JSHS should be improved for future participants?	
Improvement #1:	
Improvement #2:	
Improvement #3:	

40. Please tell us about your overall satisfaction with your JSHS experience.

8 | Appendix F – JSHS Mentor Questionnaire

Contact Information		
Please verify the following information:		
*First Name:		
*Last Name:		
*Email Address:		
All fields with an asterisk (*) are required.		

*1. Do you agree to participate in this survey? (required)(*Required)		
Select one.		
○	Yes, I agree to participate in this survey	(Go to question number 2.)
○	No, I do not wish to participate in this survey	Go to end of chapter

*2. Please provide your personal information below: (required)(*Required)	
*First Name::	
*Last Name::	

3. Please provide your email address: (optional)

*4. What is your gender?(*Required)	
Select one.	
○	Male
○	Female
○	Choose not to report

*5. What is your race or ethnicity?(*Required)	
Select one.	
○	Hispanic or Latino
○	Asian
○	Black or African American
○	Native American or Alaska Native
○	Native Hawaiian or Other Pacific Islander
○	White
○	Choose not to report
○	Other race or ethnicity, (specify)::

*6. Which of the following BEST describes the organization you work for? (select ONE)(*Required)	
Select one.	
○	No organization
○	School or district (K-12)
○	State educational agency
○	Institution of higher education (vocational school, junior college, college, or university)
○	Private Industry
○	Department of Defense or other government agency
○	Non-profit
○	Other, (specify):

*7. Which of the following BEST describes your current occupation (select ONE)(*Required)		
Select one.		
○	Teacher	(Go to question number 8.)
○	Other school staff	(Go to question number 8.)
○	University educator	(Go to question number 11.)
○	Scientist, Engineer, or Mathematician in training (undergraduate or graduate student, etc.)	(Go to question number 11.)
○	Scientist, Engineer, or Mathematics professional	(Go to question number 11.)
○	Other, (specify)::	(Go to question number 11.)

*8. What grade level(s) do you teach (select all that apply)?(*Required)	
Select all that apply.	
☐	Upper elementary
☐	Middle school
☐	High school
☐	University

9. Which best describes the location of your school?	
Select one.	
○	Urban (city)
○	Suburban
○	Rural (country)
○	Frontier or tribal school
○	Home School
○	Online School
○	Department of Defense School (DeDEA or DoDDS) Choose not to report

10. Which of the following subjects do you teach? (select ALL that apply)

☐	Upper elementary
☐	Physical science (physics, chemistry, astronomy, materials science, etc.)
☐	Biological science
☐	Earth, atmospheric, or oceanic science
☐	Environmental science
☐	Computer science
☐	Technology
☐	Engineering
☐	Mathematics or statistics
☐	Medical, health, or behavioral science
☐	Social Science (psychology, sociology, anthropology)
☐	Other, (specify):

11. Which of the following best describes your primary area of research? *Select one.*

○	Physical science (physics, chemistry, astronomy, materials science, etc.)
○	Biological science
○	Earth, atmospheric, or oceanic science
○	Environmental science
○	Computer science
○	Technology
○	Engineering
○	Mathematics or statistics
○	Medical, health, or behavioral science
○	Social Science (psychology, sociology, anthropology)
○	N/A - I am a teacher not STEM researcher
○	Other, (specify):

12. At which of the following JSHS sites did you participate? (Select ONE)	
Select one.	
○	Alabama
○	Alaska
○	Arizona
○	Arkansas
○	California—Northern California & Western Nevada
○	California—Southern California
○	Connecticut
○	DoD Dependent Schools-Europe
○	DoD Dependent Schools-Pacific
○	District of Columbia – Washington DC
○	Florida
○	Georgia
○	Hawaii
○	Illinois
○	Illinois - Chicago
○	Indiana
○	Intermountain—Colorado, Montana, Idaho, Nevada, Utah
○	Iowa
○	Kansas—Nebraska—Oklahoma
○	Kentucky
○	Louisiana
○	Maryland
○	Michigan
○	Missouri
○	New England—Northern New England
○	New England—Southern New England
○	New Jersey--Monmouth
○	New Jersey—Rutgers

○	New York—Long Island
○	New York—Metro
○	New York—Upstate
○	North Carolina
○	North Central—Minnesota, North Dakota, South Dakota
○	Ohio
○	Oregon
○	Pennsylvania
○	Philadelphia
○	Puerto Rico
○	South Carolina
○	Southwest
○	Tennessee
○	Texas
○	Virginia
○	Washington
○	West Virginia
○	Wisconsin-Western Wisconsin & Upper Michigan
○	Wyoming—Eastern Colorado

13. Which of the following describes your role during JSHS (choose all that apply)?

Select all that apply.

☐	Research Mentor
☐	Competition Advisor
☐	Judge
☐	Invited Speaker
☐	Teacher
☐	Other, (specify)::

14. How many JSHS participants did you work with this year? (Teachers or mentors only)
_____ students.

15. How did you LEARN ABOUT AEOP? (Check all that apply)
Select all that apply.

☐	National Science Teachers Association (NSTA) website
☐	Army Educational Outreach Program (AEOP) website
☐	AEOP on Facebook, Twitter, Pinterest, or other social media
☐	A STEM conference or STEM education conference
☐	An email or newsletter from school, university, or a professional organization
☐	Past JSHS participant
☐	A student
☐	A colleague
☐	My supervisor or superior
☐	A JSHS site host or director
☐	Workplace communications
☐	Someone who works with the Department of Defense (Army, Navy, Air Force)
☐	Other, (specify):: _____

16. PREVIOUS PROGRAM PARTICIPATION - How many times have YOU PARTICIPATED in any of the following Army Educational Outreach Programs (AEOPs) in any capacity? If you have heard of an AEOP but never participated select "Never." If you have not heard of an AEOP select "Never heard of it."

Select one per row.

	Never	*Once*	*Twice*	*Three or more times*	*I've never heard of this program*
Camp Invention	○	○	○	○	○
eCYBERMISSION	○	○	○	○	○
Junior Solar Sprint (JSS)	○	○	○	○	○
West Point Bridge Design Contest (WPBDC)	○	○	○	○	○
Junior Science & Humanities Symposium (JSHS)	○	○	○	○	○
Gains in the Education of Mathematics and Science (GEMS)	○	○	○	○	○
GEMS Near Peers	○	○	○	○	○
UNITE	○	○	○	○	○
Science & Engineering Apprenticeship Program (SEAP)	○	○	○	○	○
Research & Engineering Apprenticeship Program (REAP)	○	○	○	○	○
High School Apprenticeship Program (HSAP)	○	○	○	○	○
College Qualified Leaders (CQL)	○	○	○	○	○
Undergraduate Research Apprenticeship Program (URAP)	○	○	○	○	○
Science Mathematics, and Research for Transformation (SMART) College Scholarship	○	○	○	○	○
National Defense Science & Engineering Graduate (NDSEG) Fellowship	○	○	○	○	○

17. PROGRAM SATISFACTION - How SATISFIED were you with the following JSHS features?

Select one per row.

	Did not experience	*Not at all*	*A little*	*Somewhat*	*Very much*
Application or registration process	○	○	○	○	○
Communicating with NSTA	○	○	○	○	○
Communicating with your JSHS site's organizers	○	○	○	○	○
Support for instruction or mentorship during program activities	○	○	○	○	○
Support for instruction or mentorship during JSHS activities	○	○	○	○	○
Research abstract preparation requirements	○	○	○	○	○
The physical location(s) of JSHS activities	○	○	○	○	○

18. PROGRAM SATISFACTION - The following activities were common to many Regional JSHS symposia across the nation. How SATISFIED were you with each of the following Regional JSHS program activities?

Select one per row.

	Did not experience	*Not at all*	*A little*	*Somewhat*	*Very much*
Student Oral Presentation	○	○	○	○	○
Student Poster Presentations	○	○	○	○	○
Judging Process	○	○	○	○	○
Feedback from Judges	○	○	○	○	○
Invited Speaker Presentations	○	○	○	○	○
Panel Discussions	○	○	○	○	○
Tours or Field Trips	○	○	○	○	○
Team Building Activities	○	○	○	○	○

19. MENTOR STRATEGIES - The list below describes mentoring strategies that are effective ways to establish the relevance of learning activities for students. From the list below, please indicate which strategies you used when working with your student(s) in JSHS.

Select one per row.

	Yes - I used this strategy	*No - I did not use this strategy*
Become familiar with my student(s) background and interests at the beginning of the JSHS experience	○	○
Giving students real-life problems to investigate or solve	○	○
Selecting readings or activities that relate to students' backgrounds	○	○
Encouraging students to suggest new readings, activities, or projects	○	○
Helping students become aware of the role(s) that STEM plays in their everyday lives	○	○
Helping students understand how STEM can help them improve their own community	○	○
Asking students to relate real-life events or activities to topics covered in JSHS	○	○

20. MENTOR STRATEGIES - The list below describes mentoring strategies that are effective ways to support the diverse needs of students as learners. From the list below, please indicate which strategies you used when working with your student(s) in JSHS.

Select one per row.

	Yes - I used this strategy	*No - I did not use this strategy*
Identify the different learning styles that my student (s) may have at the beginning of the JSHS experience	○	○
Interact with students and other personnel the same way regardless of their background	○	○
Use a variety of teaching and/or mentoring activities to meet the needs of all students	○	○
Integrating ideas from education literature to teach/mentor students from groups underrepresented in STEM	○	○
Providing extra readings, activities, or learning support for students who lack essential background knowledge or skills	○	○
Directing students to other individuals or programs for additional support as needed	○	○
Highlighting under-representation of women and racial and ethnic minority populations in STEM and/or their contributions in STEM	○	○

21. MENTOR STRATEGIES - The list below describes mentoring strategies that are effective ways to support students development of collaboration and interpersonal skills. From the list below, please indicate which strategies you used when working with your student(s) in JSHS.

Select one per row.

	Yes - I used this strategy	*No - I did not use this strategy*
Having participant(s) tell other people about their backgrounds and interests	○	○
Having participant(s) explain difficult ideas to others	○	○
Having participant(s) listen to the ideas of others with an open mind	○	○
Having participant(s) exchange ideas with others whose backgrounds or viewpoints are different from their own	○	○
Having participant(s) give and receive constructive feedback with others	○	○

22. MENTOR STRATEGIES - The list below describes mentoring strategies that are effective ways to support students' engagement in "authentic" STEM activities. From the list below, please indicate which strategies you used when working with your student(s) in JSHS.

Select one per row.

	Yes - I used this strategy	*No - I did not use this strategy*
Teaching (or assigning readings) about specific STEM subject matter	○	○
Having participant(s) search for and review technical research to support their work	○	○
Demonstrating laboratory/field techniques, procedures, and tools for my student(s)	○	○
Supervising participant(s) while they practice STEM research skills	○	○
Providing participant(s) with constructive feedback to improve their STEM competencies	○	○
Allowing participant(s) to work independently to improve their self-management abilities	○	○

23. MENTOR STRATEGIES - This list describes mentoring strategies that are effective ways to support students' STEM educational and career pathways. From this list, please indicate which strategies you used when working with your student(s) in JSHS.

Select one per row.

	Yes - I used this strategy	*No - I did not use this strategy*
Asking participant(s) about their educational and/or career goals	○	○
Recommending extracurricular programs that align with participants' goals	○	○
Recommending Army Educational Outreach Programs that align with participants' goals	○	○
Providing guidance about educational pathways that will prepare participant(s) for a STEM career	○	○
Discussing STEM career opportunities within the DoD or other government agencies	○	○
Discussing STEM career opportunities in private industry or academia	○	○
Discussing the economic, political, ethical, and/or social context of a STEM career	○	○
Recommending student and professional organizations in STEM to my student(s)	○	○
Helping participant(s) build a professional network in a STEM field	○	○
Helping participant(s) with their resume, application, personal statement, and/or interview preparations	○	○

*24. RESOURCES - How useful were each of the following in your efforts to expose student(s) to Army Educational Outreach Programs (AEOPs) during JSHS?(*Required)

Select one per row.

	Did not experience	*Not at all*	*A little*	*Somewhat*	*Very much*
*Army Educational Outreach Program (AEOP) website	○	○	○	○	○
*AEOP on Facebook, Twitter, Pinterest or other social media	○	○	○	○	○
*AEOP printed materials	○	○	○	○	○
*JSHS program staff or site coordinator	○	○	○	○	○
*Invited speakers or "career" events	○	○	○	○	○
*Presentations or information shared at the JSHS competition	○	○	○	○	○

*25. RESOURCES - How USEFUL were each of the following in your efforts to expose your student(s) to Department of Defense (DoD) STEM careers during JSHS.(*Required)

Select one per row.

	Did not experience	*Not at all*	*A little*	*Somewhat*	*Very much*
*Army Educational Outreach Program (AEOP) website	○	○	○	○	○
*AEOP on Facebook, Twitter, Pinterest or other social media	○	○	○	○	○
*AEOP printed materials	○	○	○	○	○
*JSHS program staff or site coordinator	○	○	○	○	○
*Invited speakers or "career" events	○	○	○	○	○
*Presentations or information shared at the JSHS competition	○	○	○	○	○

26. FUTURE INTEREST - Which of the following AEOPs did YOU EXPLICITLY DISCUSS with your student(s) during JSHS? (check ALL that apply)

Select one per row.

	Yes - I discussed this program with my student(s)	*No - I did not discuss this program with my student(s)*
UNITE	○	○
Junior Science & Humanities Symposium (JSHS)	○	○
Science & Engineering Apprenticeship Program (SEAP)	○	○
Research & Engineering Apprenticeship Program (REAP)	○	○
High School Apprenticeship Program (HSAP)	○	○
College Qualified Leaders (CQL)	○	○
GEMS Near Peer Mentor Program	○	○
Undergraduate Research Apprenticeship Program (URAP)	○	○
Science Mathematics, and Research for Transformation (SMART) College Scholarship	○	○
National Defense Science & Engineering Graduate (NDSEG) Fellowship	○	○
I discussed AEOP with participant(s) but did not discuss any specific program	○	○
eCYBERMISSION	○	○

27. DoD RESEARCH - How much do you agree or disagree with the following statements about Department of Defense (DoD) researchers and research:

Select one per row.

	Strongly Disagree	*Disagree*	*Neither Agree nor Disagree*	*Agree*	*Strongly Agree*
DoD researchers advance science and engineering fields	○	○	○	○	○
DoD researchers develop new, cutting edge technologies	○	○	○	○	○
DoD researchers solve real-world problems	○	○	○	○	○
DoD research is valuable to society	○	○	○	○	○

28. STEM PRACTICES - How often did YOUR STUDENT(S) have opportunities to do each of the following in JSHS?

Select one per row.

	Not at all	*At least once*	*A few times*	*Most days*	*Every day*
Work with a STEM researcher or company on a real world STEM research project	○	○	○	○	○
Work with a STEM researcher on a research project topic assigned by the teacher	○	○	○	○	○
Design their own research or investigation based on the students' own question(s)	○	○	○	○	○
Present STEM research to a panel of judges from industry or the military	○	○	○	○	○
Interact with STEM researchers	○	○	○	○	○
Use laboratory or field techniques, procedures, and tools	○	○	○	○	○
Identify questions or problems to investigate	○	○	○	○	○
Design and carry out an investigation	○	○	○	○	○
Analyze data or information and draw conclusions	○	○	○	○	○
Work collaboratively as part of a team	○	○	○	○	○
Build or make a computer model	○	○	○	○	○
Solve real word problems	○	○	○	○	○

29. STEM KNOWLEDGE - AS A RESULT OF THEIR JSHS EXPERIENCE, how much did your student(s) GAIN in the following areas?

Select one per row.

	No gain	*A little gain*	*Some gain*	*Large gain*	*Extreme gain*
In depth knowledge of a STEM topic(s)	○	○	○	○	○
Knowledge of research conducted in a STEM topic or field	○	○	○	○	○
Knowledge of research processes, ethics, and rules for conduct in STEM	○	○	○	○	○
Knowledge of how scientists and engineers work on real problems in STEM	○	○	○	○	○
Knowledge of what everyday research work is like in STEM	○	○	/	/	/

30. STEM SKILLS - AS A RESULT OF THEIR JSHS EXPERIENCE, how much did your student(s) GAIN in their abilities to do each of the following?

Select one per row.

	No gain	*Small gain*	*Medium gain*	*Large gain*
Defining a problem that can be solved by developing a new or improved product or process	/	/	/	/
Creating a hypothesis or question that can be tested in an experiment	/	/	/	/
Using their knowledge and creativity to suggest a solution to a problem	/	/	/	/
Making a model to show how something works	/	/	/	/
Designing procedures or steps for an experiment that work	/	/	/	/
Identifying the limitations of the methods and tools used for data collection	/	/	/	/
Carrying out an experiment and recording data accurately	/	/	/	/
Creating charts or graphs to display data and find patterns	/	/	/	/
Considering multiple interpretations of data to decide if something works as intended	/	/	/	/
Supporting an explanation with STEM knowledge or data from experiments	/	/	/	/
Identifying the strengths and limitations of data or arguments presented in technical or scientific texts	/	/	/	/
Presenting an argument that uses data and/or findings from an experiment	/	/	/	/
Defending an argument based upon findings from an experiment or other data	/	/	/	/
Integrating information from technical or scientific texts and other media to support your explanation of an experiment	/	/	/	/

31. 21st CENTURY SKILLS - AS A RESULT OF THE JSHS EXPERIENCE, how much did your student(s) GAIN (on average) in the skills/abilities listed below?

Select one per row.

	No gain	*Small gain*	*Medium gain*	*Large gain*
Thinking creatively	/	/	/	/
Working creatively with others	/	/	/	/
Using creative ideas to make a product	/	/	/	/
Thinking about how systems work and how parts interact with each other	/	/	/	/
Evaluating others' evidence, arguments and beliefs	/	/	/	/
Solving problems	/	/	/	/
Communicating clearly (written and oral) with others	/	/	/	/
Collaborating with others effectively and respectfully in diverse teams	/	/	/	/
Interacting effectively with others in a respectful and professional manner	/	/	/	/
Accessing and evaluating information efficiently (time) and critically (evaluates sources)	/	/	/	/
Using and managing data accurately, creatively, and ethically	/	/	/	/
Analyzing media (news) - understanding points of view in the media	/	/	/	/
Creating media products like videos, blogs, social media	/	/	/	/
Use technology as a tool to research, organize, evaluate, and communicate information	/	/	/	/
Adapting to change when things do not go as planned	/	/	/	/
Incorporating feedback on their work effectively	/	/	/	/

Setting goals and utilizing time wisely	/	/	/	/
Working independently and completing tasks on time	/	/	/	/
Taking initiative and doing work without being told to	/	/	/	/
Prioritizing, planning, and managing projects to achieve completion	/	/	/	/
Producing results - sticking with a task until it is finished	/	/	/	/
Leading and guiding others in a team or group	/	/	/	/
Being responsible to others - thinking about the larger community	/	/	/	/

32. OVERALL IMPACT - Which of the following statements describe YOUR STUDENT(S) after participating in the JSHS program?

Select one per row.

	Disagree - This did not happen	*Disagree - This happened but not because of JSHS*	*Agree - JSHS contributed*	*Agree - JSHSwas primary reason*
More confident in STEM knowledge, skills, and abilities	/	/	/	/
More interested in participating in STEM activities outside of school requirements	/	/	/	/
More aware of other AEOPs	/	/	/	/
More interested in participating in other AEOPs	/	/	/	/
More interested in taking STEM classes in school	/	/	/	/
More interested in earning a STEM degree	/	/	/	/
More interested in pursuing a career in STEM	/	/	/	/
More aware of DoD STEM research and careers	/	/	/	/
Greater appreciation of DoD STEM research	/	/	/	/
More interested in pursuing a STEM career with the DoD	/	/	/	/

33. What are the three most important strengths of JSHS?	
Strength #1:	
Strength #2:	
Strength #3:	

34. What are the three ways JSHS should be improved for future participants?	
Improvement #1:	
Improvement #2:	
Improvement #3:	

35. Please tell us about your overall satisfaction with your JSHS experience.

9 | Appendix G – NSTA's Response to FY19 Evaluation