



2018 Evaluation Report

April 2018



INTRODUCTION

The Ohio Junior Science and Humanities Symposium (hereafter referred to as OJSHS) is an annual event in which Ohio students in grades 9 to 12 “compete for scholarships and recognition by presenting the results of their original research efforts before a panel of judges and an audience of their peers”¹. The OJSHS is part of the national Junior Science and Humanities Symposia Program, which is jointly sponsored by the United States Departments of the Army, Navy, and Air Force, in cooperation with leading research universities throughout the nation.

The 55th annual OJSHS took place on March 14 – 16, 2018 at Bowling Green State University, who hosted and sponsored the event along with the NWO Center for Excellence in STEM Education. The purpose of this report is to present the findings of the 2018 OJSHS evaluation. The report begins with a description of evaluation methods, followed by a description of the 2018 OJSHS participants. The report then summarizes the perceptions of the 2018 OJSHS participants before concluding with recommendations for future Ohio Junior Science and Humanities Symposia.

¹ Cited from the national Junior Science and Humanities website – www.jshs.org

EVALUATION METHODS

The 2018 OJSHS was evaluated using an online survey that was made available to the participants at the end of the last day of the event. The link to the survey was included in the program distributed to all participants. The link was also e-mailed to the participants on the last day of the event and a reminder email sent one week later.

The evaluation survey included several items that asked participants to rate the quality of several aspects of the 2018 OJSHS, including the keynote presentation, the poster and paper judges, the organization of poster presentation space, and the awards ceremony. The survey also asked participating students to rate how effective the OJSHS was at increasing their interest in STEM research and careers. The survey included several closed-ended multiple-choice items and several open-ended items that asked participants to write about their perceptions of the 2018 OJSHS and give suggestions regarding how it could be improved.

See Appendix A for the 2018 OJSHS Evaluation Survey.

2018 OJSHS PARTICIPANTS

A total of 251 students and 104 non-students participated in the 2018 OJSHS. Students could participate in the OJSHS as paper presenters, poster presenters, or delegates (who did not present any research). This year also featured the inclusion of about 200 students from Toledo Public and Springfield Local Schools presenting posters as part of the Army Education Outreach Program (AEOP). These students are included in the attendance data below. Non-students included teachers, parents, paper and poster judges, OJSHS staff/volunteers (e.g., session presiders), and other guests. The attendance numbers are displayed in the table below.

Participant	2018 Attendance	2017 Attendance	2016 Attendance	2015 Attendance	2014 Attendance	2013 Attendance
Student Presenting a Paper	24	25	24	24	24	24
Student Presenting a Poster	197	62	83	64	71	53
Student Delegate	30	18	8	4	6	7
Parent of a Participating Student	5	11	22	23	22	16
Teacher of a Participating Student	24	19	13	12	13	11
Paper Judge	4	4	5	6	6	6
Poster Judge	51	36	36	26	26	19
OJSHS Staff and Volunteers	15	15	12	13	13	25
Other Guests	5	9	8	3	14	8
Total	355	199	211	175	195	169

Demographic information was collected from the participating students via the 2018 OJSHS registration and evaluation. The student demographic information is displayed in the table below.

Demographic Variable	Values	N	%
Number of years (including 2018) participating in the OJSHS (<i>n=83</i>)	One	65	78.31%
	Two	14	16.87%
	Three	3	3.61%
	Four	1	1.20%
Gender (<i>n=251</i>)	Female	135	54%
	Male	108	43%
	Trans	1	.4%
	Chose Not To Report	7	2.6%
Racial/Ethnic Background (<i>n=251</i>)	Asian	22	8.7%
	Black or African American	21	8.3%
	Hispanic or Latino	11	4.3%
	Native American or Alaskan Native	1	.4%
	White or Caucasian	126	50.4%
	Other - Not Specified	14	5.6%
	Chose Not to Report	56	22.3%
School Location (<i>n=251</i>)	Rural	13	5%
	Suburban	149	60%
	Urban	89	35%

Note: Not all students completed each demographic item. The number in parentheses indicates the total number of responses for that particular item.

PERCEPTIONS OF THE 2018 OJSHS

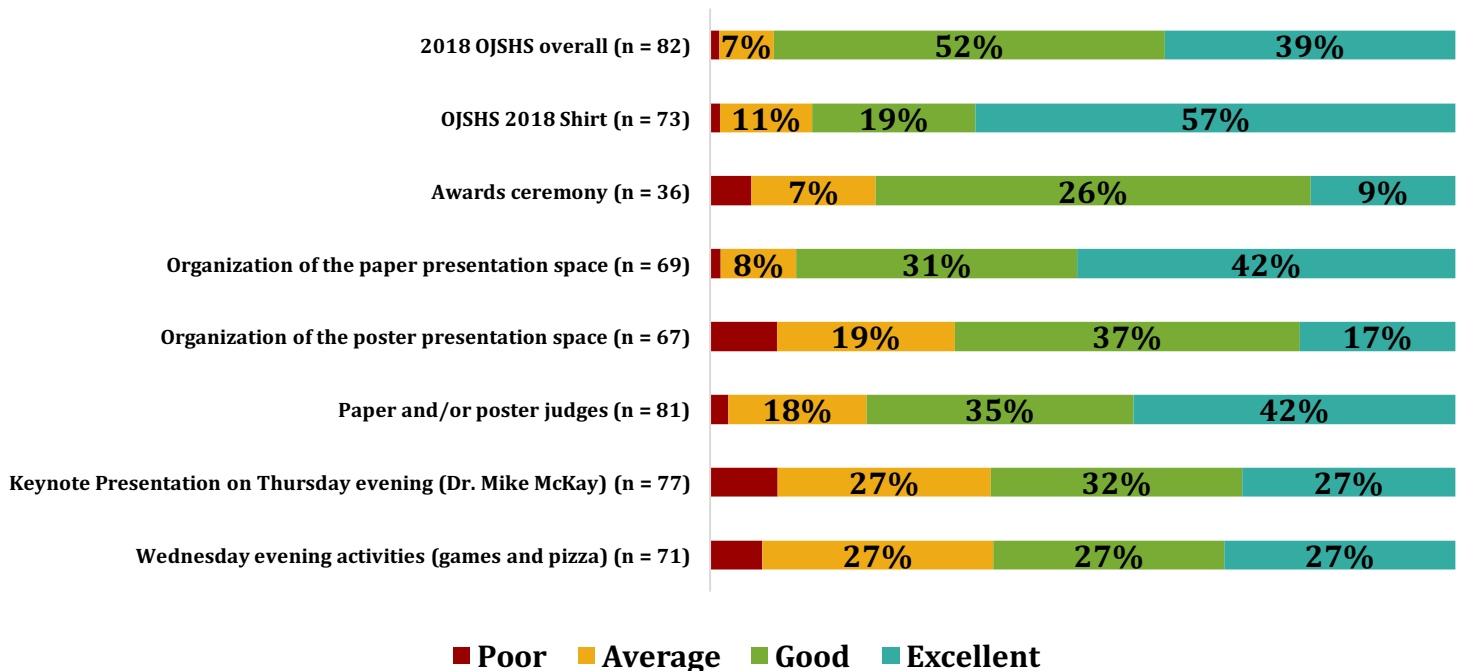
Student Perceptions

A total of 91 students completed the evaluation survey. The overall response rate to the evaluation survey was 36%. This is much lower than last year and is likely due to the survey not being completed by the students in the AEOP program as they were not present when the survey was administered on Friday.

The students were asked to rate the quality of several components of the 2018 OJSHS. The 2018 OJSHS included several daytime and evening events throughout its three-day duration. However, some of the participating students only attended the first and/or second day of the OJSHS, which was the day on which the students presented their poster. For this reason, a “this does not apply to me” option was included on the evaluation survey. Therefore, the number of responses (n) for each item reflects only those students who actually participated in or interacted with the OJSHS component in question. The figure below illustrates the distribution of the students’ responses.

Students’ overall ratings of the 2018 OJSHS were positive

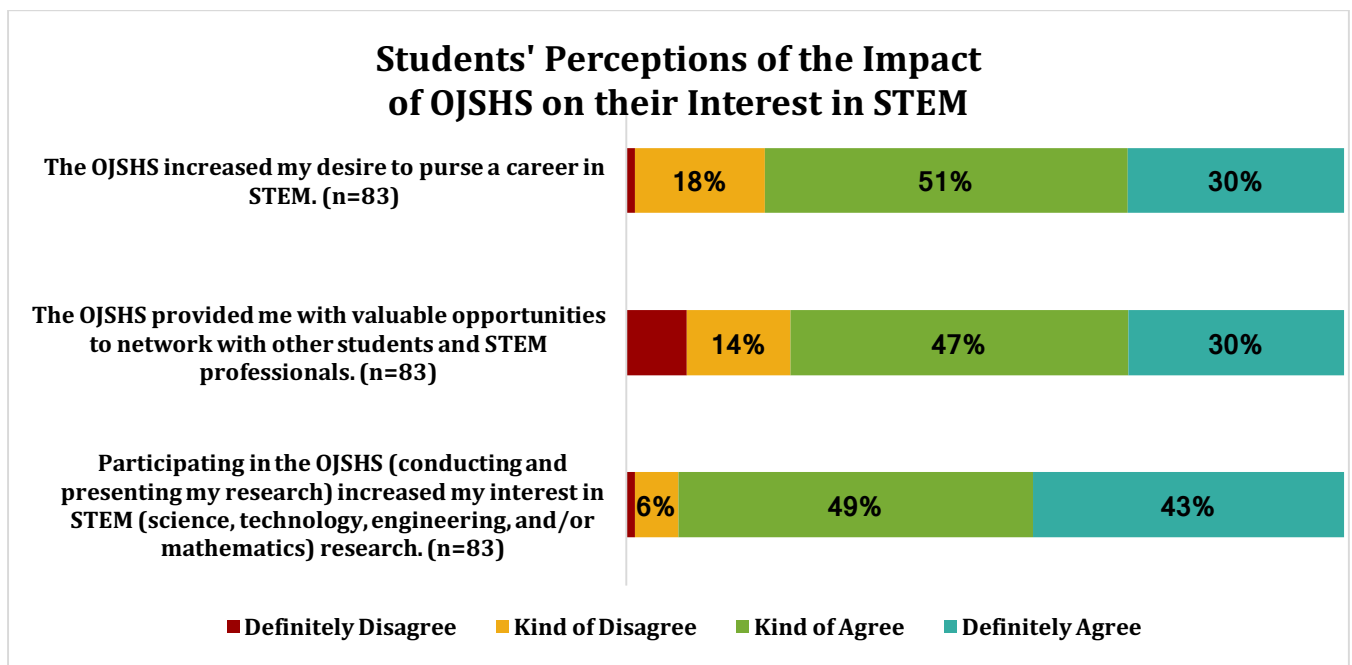
Students' Overall Ratings of Several Components of OJSHS 2018



Students were asked to write comments to explain their responses to the previous questions. The majority of the students' comments were positive, indicating that the students had a positive experience at the 2018 OJSHS. However, most of the negative comments focused on the fact that we didn't do ice skating on Wednesday night. Some of the constructive criticism comments from the students are below.

- *Ice skating was missed. Also, some sturdier backboards for poster presenters would be appreciated to eliminate the worry of messing up someone's display on the other side.*
- *The t- shirt this year was the best I have ever been given since I've been here. On Wednesday I wish we could ice skate, and that there would have been a larger meal that day.*
- *I would enjoy if Ice skating was brought back. Also, if the games were brought back to the hotel that would be good interaction. The lab tours were good.*
- *Sometimes the judges weren't very clear with their questions during paper presentations. I had an amazing judge for my poster but a friend had a very poor one.*

In addition to rating the quality of the 2018 OJSHS, students were also asked to rate the impact of the 2018 OJSHS on their interest in STEM (science, technology, engineering, and mathematics) research careers. The figure below illustrates the distribution of responses for each item.

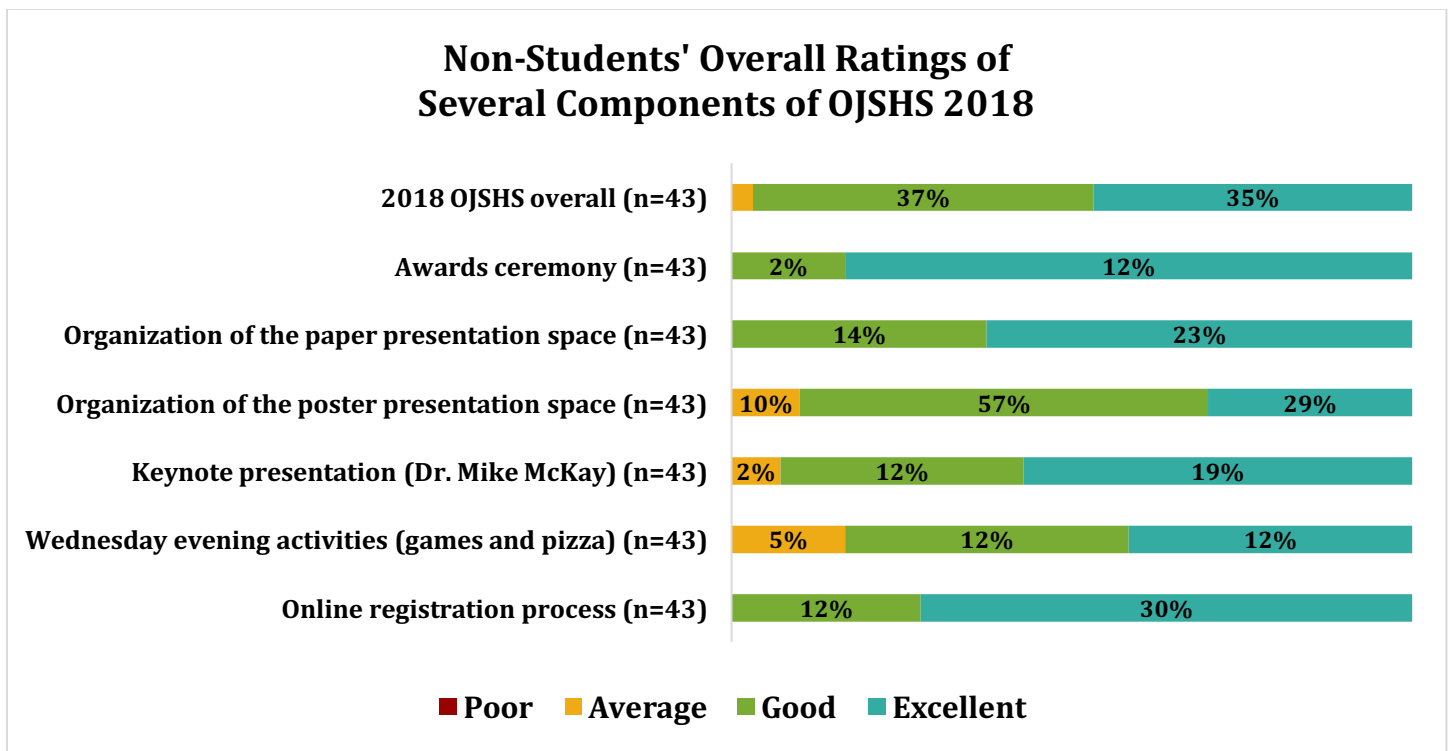


Non-Student Perceptions

A total of 42 non-students completed the evaluation survey. The overall response rate to the evaluation survey was 40%, which is much higher than previous years.

Like the students, the non-student participants were asked to rate several components of the 2018 OJSHS. Some of the non-student participants (e.g., poster and paper judges) only participated in the second day of OJSHS. Therefore, the responses to “online registration process,” “Wednesday and Thursday evening activities,” “keynote presentation,” and “awards ceremony” mostly represent teachers and parents of participating students. The figure on the next page illustrates the non-students’ distribution of responses for each item.

Non-students’ overall ratings of the 2017 OJSHS were positive



In addition to rating the quality of the 2018 OJSHS, the non-student participants were also asked to describe the impact of OJSHS on students' interest in and understanding of STEM. Although it is likely that most of the participating students were already interested in STEM, many non-student participants suggested that the OJSHS provided students with motivation to continue learning and conducting research about STEM. Some of the participants wrote:

- *Our students became much more interested in science and the fields of science as a result. They are already talking about participating again next year and how to improve.*
- *I think the students learned a lot by doing their projects, but also by learning about others' projects when they attended the conference. I definitely think their understanding of STEM was increased.*
- *Hugely valuable! These student conduct investigations that would have seemed impossible to them without this opportunity and guidance.*

The non-student participants' comments about their experience at the OJSHS were positive. Many specifically commented about the high level of organization, and others echoed the comments of the students, emphasizing the role of OJSHS in fostering positive student-student interactions. The majority of non-student participants stated that they were "very likely" or "moderately likely" to participate in OJSHS next year.

SUGGESTIONS FOR FUTURE OJSHS

The findings from the 2018 OJSHS evaluation survey indicate that the 2018 OJSHS was perceived to be a high-quality and impactful event by student and non-student participants alike. The findings demonstrate that the 2018 OJSHS provided many opportunities for students to interact with and learn from other students and STEM professionals, and helped stimulate more interest in students to learn about and conduct STEM research.

The following suggestions should be considered in the planning of future events:

- Several students expressed a desire for more time to interact with students from other schools. The organizers should think about specific events that encourage/force cross school communication.
- Several students expressed a desire to bring back ice skating on Wednesday night and check in at the hotel before Wednesday night activities. This requires more bussing costs but could be arranged in the schedule. Additionally, several students commented on needing a full meal on Wednesday evening. Traditionally, we have done a pizza or sandwich snack that night but as students arrive early in the evening, during a traditional dinner time, it may be worth considering offering a full meal on this night if the budget allows for that expense.
- Several students and teachers requested that we bring back poster scores and awards. Perhaps a process could be created to allow poster presenters to choose between a scored poster judging option or a feedback only poster judging option.

APPENDIX A:

THE 2018 OJSHS EVALUATION SURVEY

We Hope You Enjoyed the 2018 Ohio Junior Science and Humanities Symposium!

Members of the Ohio Junior Science and Humanities Symposium Program Evaluation Committee are always seeking ways to improve future Symposia. The best way to do this is to find out what participants think of the Symposium, and use their comments and suggestions to make future Symposia better.

Please take a few minutes to complete the following evaluation survey and tell us what you thought about the 2018 Ohio Junior Science and Humanities Symposium. We appreciate your cooperation!

Thank you for your assistance in improving the Ohio JSHS.

Which of the following describes you and your participation at OJSHS?

- Student - presented a paper
- Student - presented a poster
- Student delegate - did not present a paper or poster
- Parent of a participating student
- Teacher of a participating student
- Paper judge
- Poster judge
- OJSHS staff member/volunteer
- Other (please specify)

Students, Tell Us What You Think!

How many years (counting this one) have you participated in the OJSHS?

- One (this is my first year)
- Two
- Three
- Four
- Five
- Six
- More than six

I identify my gender as...

- Man
- Woman
- Trans
- Other (please specify)

Which of following best describes the way you define your racial/ethnic background?

- American Indian or Alaskan Native
- Asian
- Black or African American
- Hispanic
- Middle Eastern
- Native Hawaiian or Other Pacific Islander
- White, non Hispanic
- Multiracial

Please rate the following aspects of the 2018 OJSHS.

	Poor	Average	Good	Excellent	This doesn't apply to me
Wednesday evening activities (games and pizza)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keynote Presentation on Thursday evening (Dr. Mike McKay)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Paper and/or poster judges	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organization of the poster presentation space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organization of the paper presentation space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Awards ceremony	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
OJSHS 2018 Shirt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2018 OJSHS overall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide some comments to further explain your above ratings.

Please rate your level of agreement/disagreement with the following statements.

Participating in the OJSHS (conducting and presenting my research) increased my interest in STEM (science, technology, engineering, and/or mathematics) research.

	Definitely Disagree	Kind of Disagree	Kind of Agree	Definitely Agree
Please select your choice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The OJSHS provided me with valuable opportunities to network with other students and STEM professionals.

	Definitely Disagree	Kind of Disagree	Kind of Agree	Definitely Agree
Please select your choice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The OJSHS increased my desire to pursue a career in STEM.

	Definitely Disagree	Kind of Disagree	Kind of Agree	Definitely Agree
Please select your choice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please Tell Us What You Think

How many years (counting this one) have you been involved with the OJSHS?

- One (this is my first year)
- Two
- Three
- Four
- Five
- Six or more

Please rate the following aspects of the 2018 OJSHS.

	Poor	Average	Good	Excellent	This doesn't apply to me
Online registration process	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wednesday evening activities (games and pizza)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keynote presentation (Dr. Mike McKay)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organization of the poster presentation space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Organization of the paper presentation space	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Awards ceremony	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2018 OJSHS overall	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Please provide some comments to further explain your above ratings.

As a [Q1], what is your perception of the 2018 OJSHS's impact on students' interest in and understanding of STEM (science, technology, engineering, and mathematics)?

We Want to Know About Your 2018 OJSHS Experience

Please describe your experience at the 2018 OJSHS in your own words. Include the aspects of your experience that you liked as well as those that you didn't like.

What suggestions do you have for next year's OJSHS? Is there is anything that you would want to see kept or removed? Is there anything you would change or add?

How likely is it that you will participate in/be involved with the OJSHS next year?
Students in the 12th grade, please select "This does not apply to me".

- Not at all likely
- Very slightly likely
- Moderately likely
- Very likely
- This does not apply to me

THANK YOU VERY MUCH FOR YOUR COOPERATION!