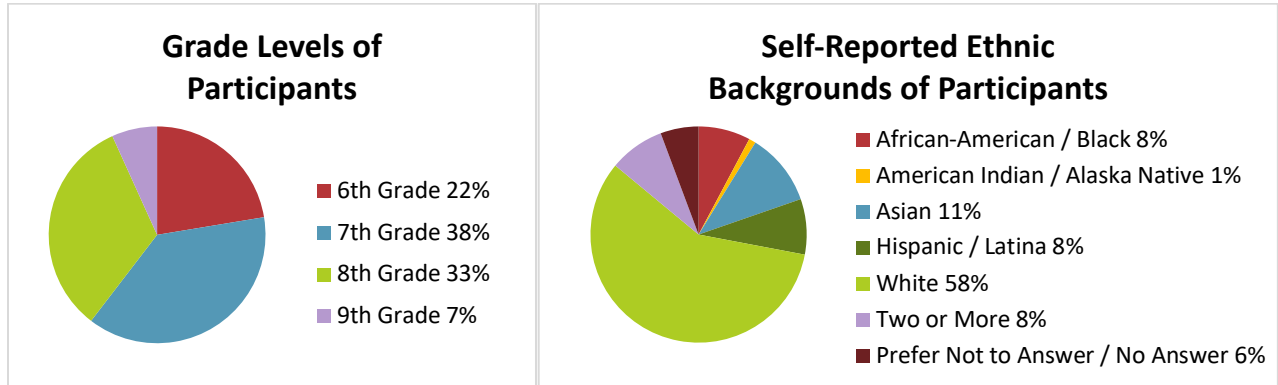


Evaluation Highlights for the 2018 Expanding Your Horizons (EYH) Conference at James Madison University

Demographics

Of the 217 student participants at the 2018 Expanding Your Horizons Conference, 193 participants completed the conference pre-survey. Demographic data is based on these 193 participants.



- **68% of participants** reported that they **were attending EYH for the first time** in 2018.
- **45% of first-time participants** and **53% of repeat participants** reported on the pre-survey that they are **very interested in a career that uses math or science**.
- **84% of participants** reported on the pre-survey that they **definitely plan to attend college**.
- **48% of EYH participants** reported that they **participate in math, science, or computer activities, other than EYH, outside of school** with 9% of EYH participants reporting that they participate in all three types of activities. 77% of the EYH participants who are not currently involved in all three types of activities reported that they are interested in participating in at least one category of activities (math, science, or computers) in which they are not currently participating.

Feedback on the Conference Experience

Post-surveys were completed by 190 student participants and 66 adult participants at the end of the conference.

- **95% of student participants and 94% of adult participants** reported that they **loved or liked the overall experience**.
- **84% of student participants** reported on the post-survey that they **are interested in attending EYH next year or would love to attend but will be too old**. EYH is designed for students in grades 6-9.

Selected Comments from Adults on the Post-Survey and One-Month Follow-up Survey

"The Workshops were excellent! We loved the student teachers in each workshop. It is very clear that JMU supports their STEM women. The passion that the students convey is great encouragement to our girls. The interactive/hands-on aspects of the workshops were great."

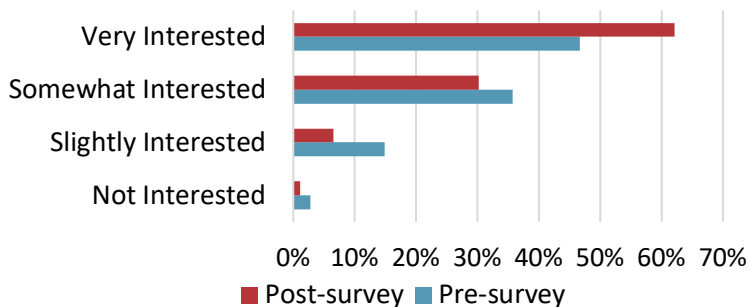
"Asking questions of a JMU student was very helpful! Having my daughter be exposed to aspects of STEM that she would not otherwise have had access to. Thank you so much!"

"The logistics of the conference and the communication with participants was EXCELLENT. Thank you for putting together such an outstanding event for the young women in our community!"

Changes in Interests and Perceptions

A total of 186 participants completed both the pre-survey and the post-survey at the conference. Participants were asked on both surveys to rate their interest in STEM careers and their confidence in their future success in a STEM career and to provide their perception of the proportion of girls who are interested in STEM. A chi-square test was completed for each of these questions to compare the distributions of the pre-survey and post-survey responses. For each test, less than 15 responses were removed due to low expected cell counts or missing answers. For all three of these questions, the chi-square tests indicated that the distribution of responses is significantly different for the pre-survey and the post-survey (all p-values < 0.005). All of the percentages below are based on the participants who answered the question on both surveys.

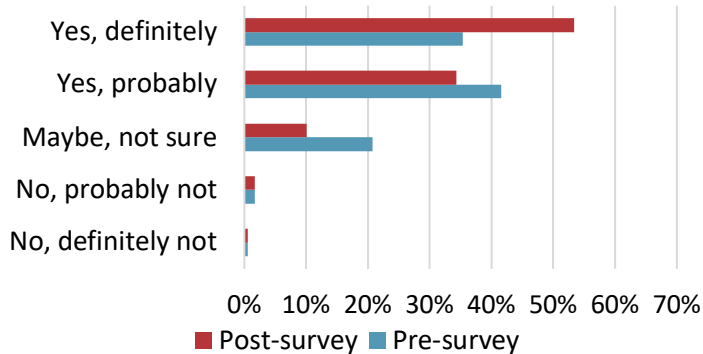
How interested are you in a career that uses math or science?



After attending EYH, **29% of participants reported increased interest in a career that uses math or science.**

54% of the participants who reported a level of interest below “Very Interested” on the pre-survey reported a higher level of interest on the post-survey.

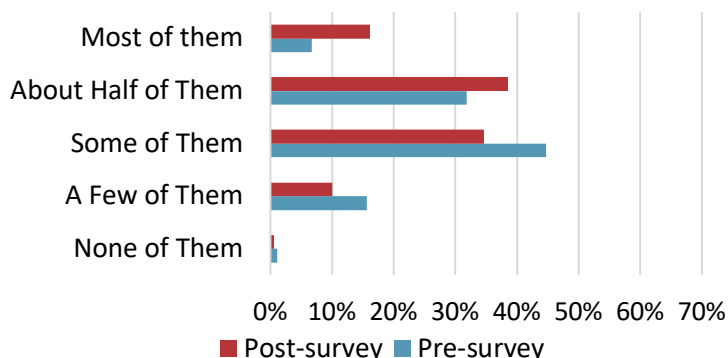
Do you feel that you would be successful in a career that uses math or science?



After attending EYH, **32% of participants reported increased confidence that they would be successful in a career that uses math or science.**

50% of the participants who reported a level of confidence below “Yes, definitely” on the pre-survey reported a higher level of confidence on the post-survey.

What portion of girls your age do you think are interested in math, science or computers?

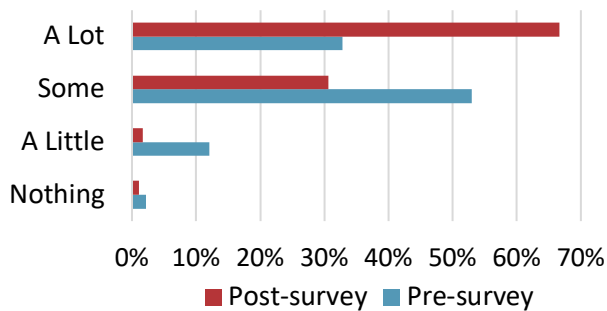


After attending EYH, **31% of participants reported thinking that a larger portion of girls their age are interested in math, science, or computers.**

Changes in Knowledge about STEM Careers

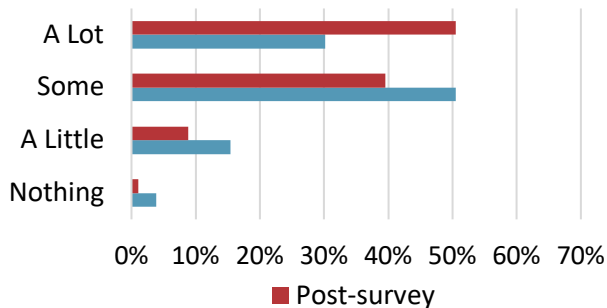
On both the pre-survey and post-survey, participants were asked to rate their knowledge about careers that use each of the following areas: science, math, engineering, and technology. A chi-square test was completed for each of these areas to compare the distributions of the pre-survey and post-survey responses. In each test, no more than 16 responses were removed due to low expected cell counts or missing responses. For three of the areas (science, math, and engineering), the chi-square tests indicated that the distribution of responses is significantly different for the pre-survey and the post-survey (p-values for these three areas < 0.0005). All of the percentages below are based on the participants who answered the question on both surveys.

How much do you know about careers that use science?



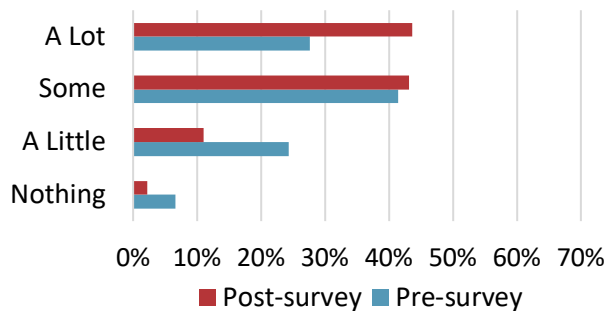
45% of participants reported a higher level of knowledge about careers using science after attending EYH.

How much do you know about careers that use math?



37% of participants reported a higher level of knowledge about careers using math after attending EYH.

How much do you know about careers that use engineering?



39% of participants reported a higher level of knowledge about careers using engineering after attending EYH.

Follow-up Actions and Changes in Perceptions and Interest One Month after EYH

Adults who registered student participants for EYH received an online survey invitation approximately one month after the conference. Forty-nine parents and guardians responded and provided information about 51 of the 217 student participants.

Since attending EYH,

- **96%** of these students had **talked with their parent/guardian about what they had learned** at EYH,
- **80%** of these students had **expressed increased confidence with regard to their potential for success in a career in math or science**,
- **78%** of these students had **expressed increased interest in a career that uses math or science**, and
- **65%** of these students had **expressed interest in taking additional math or science classes** in the future.

In addition, parents reported that, according to their knowledge,

- **75%** of these students **had recently done research to learn more about science, technology, engineering, or mathematics or about careers in these fields**.

Selected Responses about Other Changes Parents Had Noticed in Their Children's Perceptions or Interests since Attending EYH

"All of the children had a positive experience attending EYH (despite prior hesitation) and shared experiences from different courses attended with one another - Areas of biology and chemistry (food and reactions) in particular sparked interest"

"Positive outlook on technology careers and not feeling like they are just for boys. Increased interest in learning about girls that break barriers and move into male dominated career fields"

"My daughter was already interested in science, but EYH opened her eyes to fields of science that she had not been exposed to before."

About the Conference

The Expanding Your Horizons (EYH) Conference at James Madison University is an annual STEM (science, technology, engineering, and mathematics) conference for young women in grades 6-9. The 2018 EYH conference involved 217 student participants in grades 6-9, approximately 80 accompanying parents and teachers, more than 120 JMU student volunteers, and 50 JMU faculty and staff volunteers. Each year, the conference program includes two keynote addresses, more than 20 hands-on student workshops on a wide variety of STEM topics, two workshops for accompanying adults, a science demonstration, and lunch with JMU students from STEM majors. The purpose of EYH is to foster and support young women's interest in STEM fields, to increase their awareness of STEM career opportunities, and to empower them to see themselves as future participants in these fields and careers.

More information about the Expanding Your Horizons Conference at James Madison University can be obtained by visiting the conference's website <http://www.jmu.edu/mathstat/eyh> or emailing the conference directors, Drs. Elizabeth Arnold and Katie Quertermous, at eyh@jmu.edu.

Acknowledgement: The conference organizers thank Tracy Sprolden for conducting the statistical analysis that forms the basis of this report.