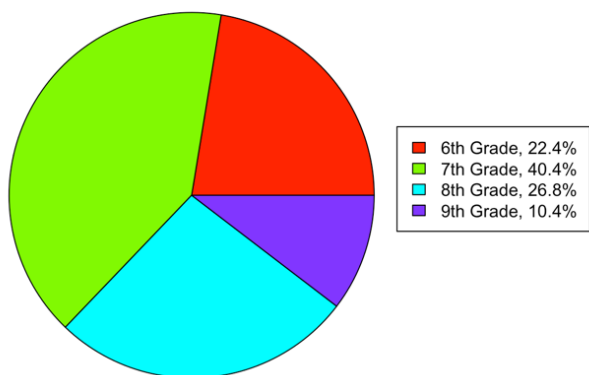


EVALUATION HIGHLIGHTS FOR THE 2019 EXPANDING YOUR HORIZONS (EYH) CONFERENCE AT JAMES MADISON UNIVERSITY

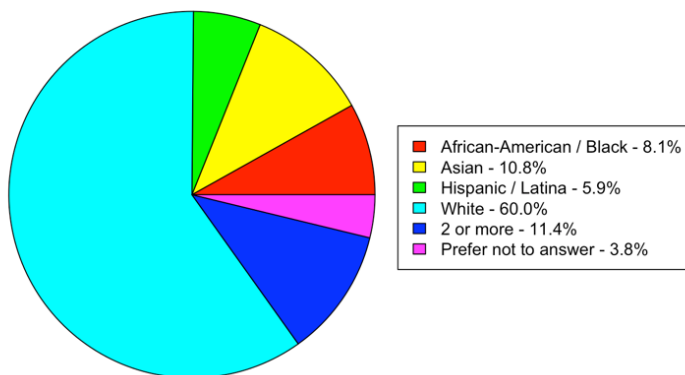
DEMOGRAPHICS

Of the 223 student participants at the 2019 Expanding Your Horizons Conference, 185 turned in consent forms and completed the conference pre-survey. Demographic data is based on these 185 participants.

Grade Level of Participants



Ethnic Background of Participants



- **59% of student participants** reported that they were **attending EYH for the first time** in 2019.
- **48% of student participants** reported that they **participate in science, math, or computer activities (other than EYH) outside of school** with 8% of student participants reporting that they participate in all three types of activities. 41% of the student participants reported they are not currently involved in science activities, but they are interested in doing so. 36% of the student participants reported they are not currently involved in math activities, but they are interested in doing so. 35% of the student participants reported they are not currently involved in computer activities, but they are interested in doing so.

FEEDBACK ON THE CONFERENCE EXPERIENCE

Post-surveys were completed by 180 student participants and 61 adult participants at the end of the conference.

- **96% of the students** and **100% of the adults** who rated their overall EYH experience reported that they **liked or loved the overall EYH experience**.
- **80% of the students** and **80% of the adults** reported that they are **definitely interested in attending EYH next year**. 3% of the students and 5% of the adults reported that they would love to, but they (or their children) are going to exceed the age limit; EYH is designed for students in grades 6-9.

Selected Comments from Adults on the Post-Survey

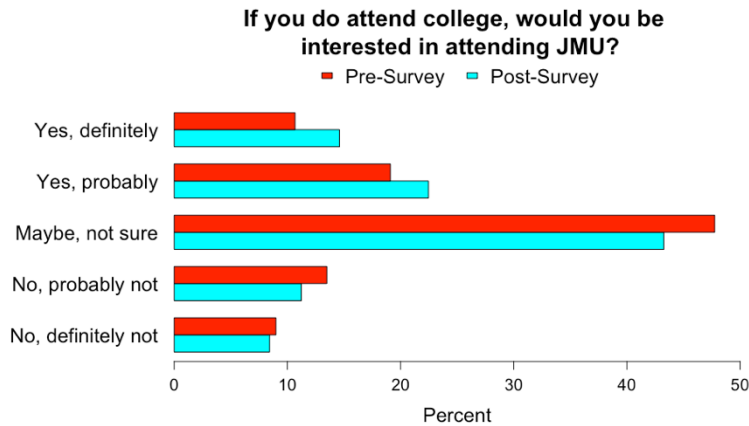
Adults reported what they enjoyed most about the conference.

- “The opportunity to spend the day watching my daughter enjoy learning. She struggles with math so to see her having fun applying math and science and see the application of what she’s learning is awesome!”
- “As usual, this day was a wonderful opportunity for my students to see real-life examples of women role-models and processes in STEM careers. Thank you!”
- “I think it was great introducing the girls to students and women in STEM fields. That’s not done enough!”
- “My daughter enjoyed it. I learned some practical info about how to help keep my daughter interested in STEM.”
- “I liked that the workshops were very hands-on and interactive for the students.”

CHANGES IN INTERESTS AND PERCEPTIONS

On both the pre- and post-surveys, student participants were asked to rate their interest in attending James Madison University, their interest in a career that uses math or science, their confidence in their future success in a career that uses math or science, and their interest in learning more about each of a list of topics (science, math, computers/technology, and engineering). All of the percentages below are based on the student participants who turned in consent forms and answered these questions on both surveys.

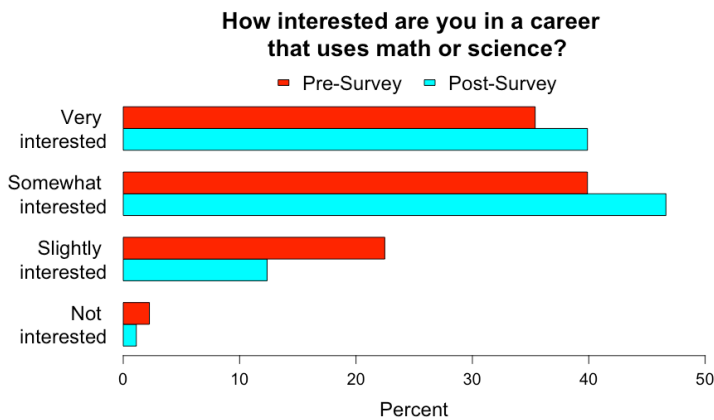
Interest in Attending JMU



After attending EYH, **16% of the student participants** reported **increased interest in attending JMU**.

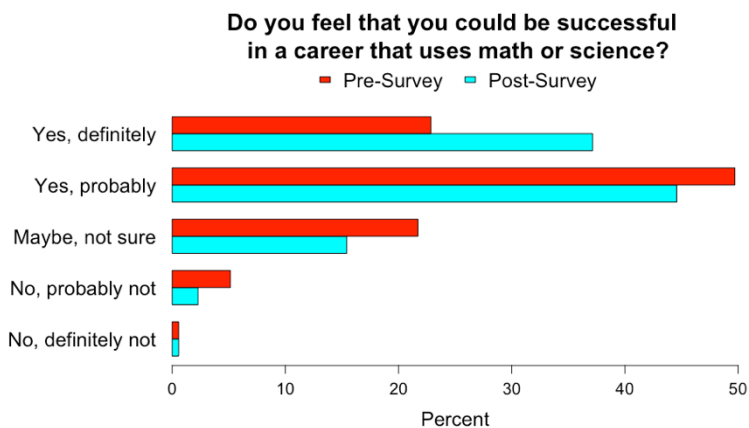
18% of the participants who reported a level of interest below “Yes, definitely” on the pre-survey reported a higher level of interest on the post-survey.

Interest and Confidence in STEM Career



After attending EYH, **21% of the student participants** reported **increased interest in a career that uses math or science**.

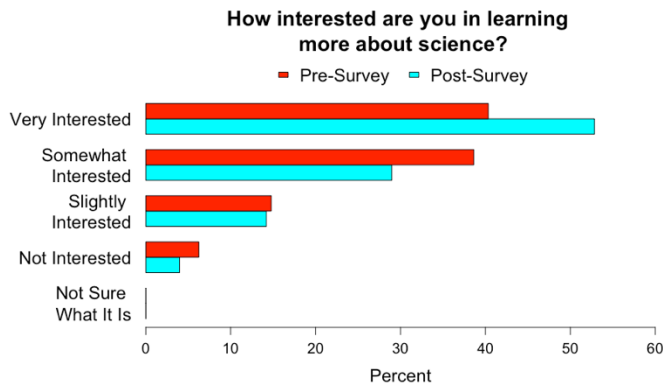
33% of the participants who reported a level of interest below “Very interested” on the pre-survey reported a higher level of interest on the post-survey.



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

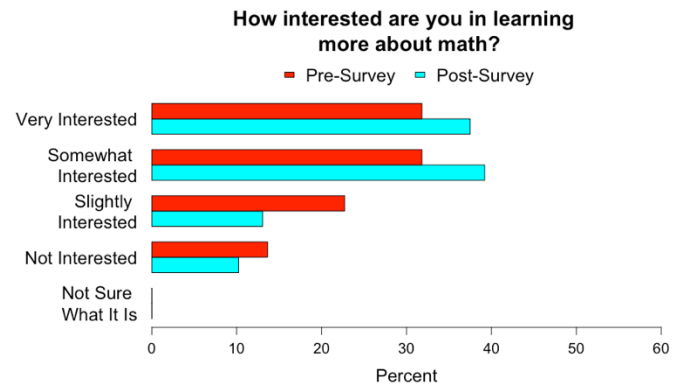
42% of the participants who reported a level of confidence below “Yes, definitely” on the pre-survey reported a higher level of confidence on the post-survey.

Interest in Learning More about STEM Topics



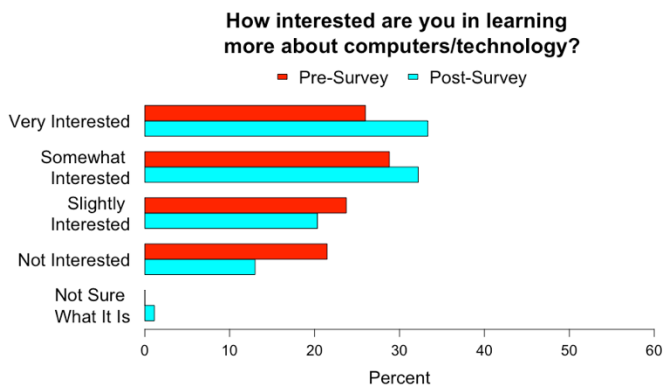
After attending EYH, **29% of the student participants** reported a **higher level of interest in learning more about science.**

49% 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.



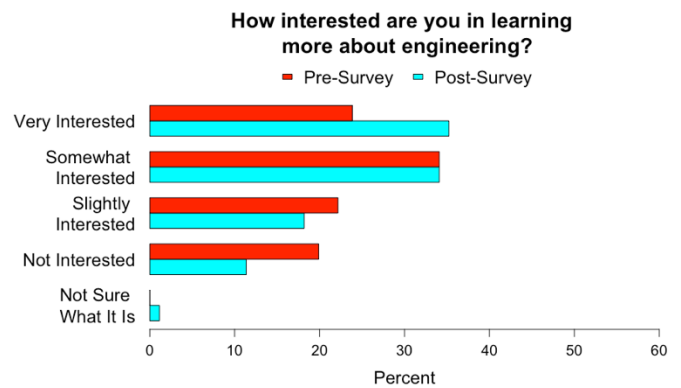
After attending EYH, **28% of the student participants** reported a **higher level of interest in learning more about math.**

41% 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.



After attending EYH, **31% of the student participants** reported a **higher level of interest in learning more about computers/technology.**

42% 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.

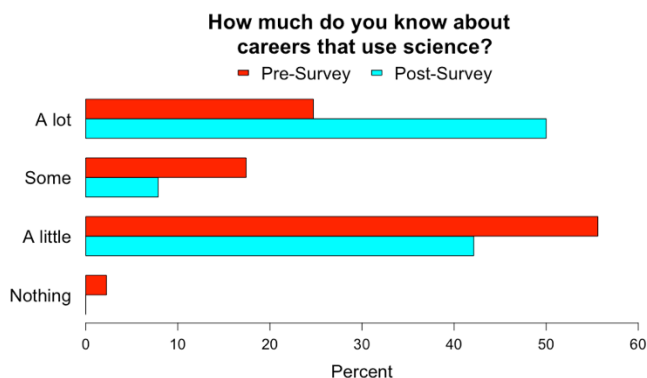


After attending EYH, **33% of the student participants** reported a **higher level of interest in learning more about engineering.**

43% 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.

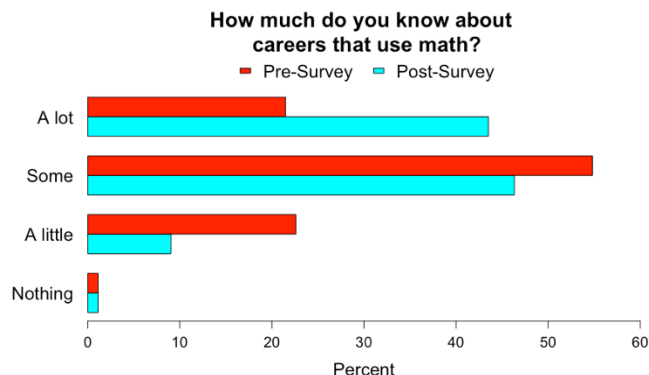
CHANGES IN KNOWLEDGE ABOUT STEM CAREERS

On both the pre- and post-surveys, student participants were asked to rate their knowledge about careers that use each of the following areas: science, math, computers/technology, and engineering. All of the percentages below are based on the student participants who turned in consent forms and answered these questions on both surveys.



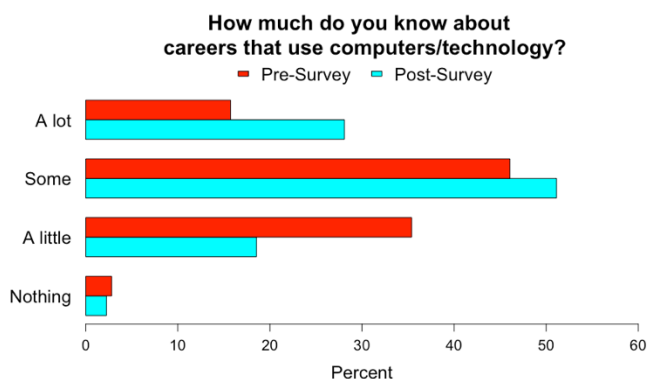
After attending EYH, **39% of the student participants** reported a **higher level of knowledge** about **careers using science**.

52% of the participants who reported a level of knowledge below “A lot” on the pre-survey reported a higher level of knowledge on the post-survey.



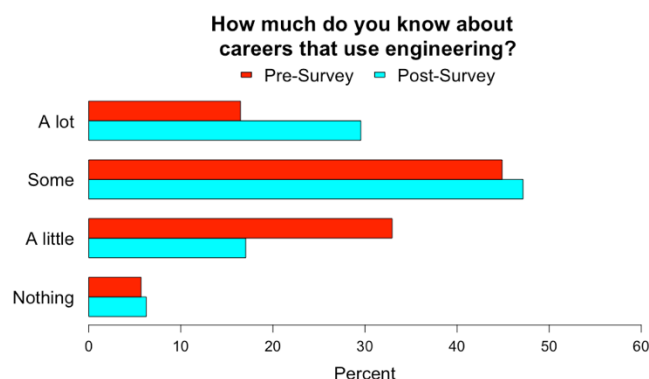
After attending EYH, **39% of the student participants** reported a **higher level of knowledge** about **careers using math**.

50% of the participants who reported a level of knowledge below “A lot” on the pre-survey reported a higher level of knowledge on the post-survey.



After attending EYH, **37% of the student participants** reported a **higher level of knowledge** about **careers using computers/technology**.

43% of the participants who reported a level of knowledge below “A lot” on the pre-survey reported a higher level of knowledge on the post-survey.



After attending EYH, **34% of the student participants** reported a **higher level of knowledge** about **careers using engineering**.

41% of the participants who reported a level of knowledge below “A lot” on the pre-survey reported a higher level of knowledge on the post-survey.

FOLLOW-UP ACTIONS AND CHANGES IN PERCEPTIONS AND INTEREST ONE MONTH AFTER EYH

Adults who attended EYH or registered student participants for the conference received an online survey invitation approximately one month after the conference. 57 adults whose children attended EYH and 6 teachers whose students attended EYH responded to the survey. Overall, the adults provided detailed information about 59 of the students who attended EYH.

Since attending EYH,

- **98%** of these students had **talked with their parent/guardian about what they had learned** at EYH.
- **75%** of these students expressed **increased interest in a career that uses math or science**.
- **68%** of these students expressed **increased confidence with regard to their potential for success in a career that uses math or science**.
- **65%** of these students expressed an **interest in taking additional math or science classes** in the future.

In addition, parents reported the degree to which their children had recently done any research to learn more about STEM topics or careers.

- **54%** of these students researched topics/careers in **science**;
- **36%** of these students researched topics/careers in **mathematics**;
- **41%** of these students researched topics/careers in **computers or technology**; and
- **24%** of these students researched topics/careers in **engineering**.

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

Parents and teachers reported any changes in their children's/students' perceptions or interests in math or science since attending EYH.

- “She is saying things like, ‘I can do math!’, ‘I’ve got a mind for science.’ Those are new phrases coming from her.”
- “Her science teacher shared with me that she seems more motivated and excited to share her ideas with the class even though they may seem outside the context of what they are learning.”
- “I have noticed that my child has felt more confident in math and science.”
- “After attending EYH my daughter applied for STEM Academy. She loved the hands on approach to learning.”

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 2019 EYH conference involved 223 student participants in grades 6-9, approximately 85 parents and teachers, 155 JMU student volunteers, and more than 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 Dr. Liz Arnold for conducting the statistical analysis that forms the basis of this report.