

**SCIENCE OLYMPIAD  
URBAN SCIENCE INITIATIVE**

**EVALUATION REPORT  
SPRING 2009**

**Lizanne DeStefano  
Principal Investigator**

**Renee Lemons  
Project Evaluator**

**University of Illinois at Urbana-Champaign  
College of Education**

## CONTENTS

Program Description .....	1
Evaluation Context.....	1
Evaluation Purpose, Audience, and Key Evaluation Questions .....	1
Evaluation Design and Methods .....	2
Program Participants .....	3
Findings.....	4
Appendix A: Science Olympiad Regional Competition Participant Survey	
Appendix B: Responses to Regional Competition Survey Questions	
Appendix C: Responses to Regional Competition Survey Open-Ended Questions	
Appendix D: Disaggregated Responses to Science Olympiad Regional Competition Participant Survey	
Appendix E: Science Olympiad State Competition Participant Survey	
Appendix F: Responses to State Competition Survey	
Appendix G: Science Olympiad Coach Interview Responses	
Appendix H: Survey Result Tables	

## Tables and Figures

Table 1. Key Evaluation Questions and Methodology .....	2
Table 2. Race/Ethnicity of Students by Gender.....	3
Table 3. Grade Level of Students by Gender.....	3
Table 5. Survey Results for All Science Olympiad Participants .....	6
Table 5. Survey Results for All Science Olympiad Participants .....	10
Table 6. Ratings for Illinois Visit .....	10
Figure B1. Responses to Survey Question 5.....	B-1
Figure B2. Responses to Survey Question 6.....	B-1
Figure B3. Responses to Survey Question 7.....	B-2
Figure B4. Responses to Survey Question 8.....	B-2
Figure B5. Responses to Survey Question 9.....	B-3
Figure B6. Responses to Survey Question 10.....	B-3
Figure B7. Responses to Survey Question 11.....	B-4
Figure B8. Responses to Survey Question 12.....	B-4
Figure B9. Responses to Survey Question 13.....	B-5
Figure B10. Responses to Survey Question 14.....	B-5
Figure B11. Responses to Survey Question 15.....	B-6
Figure B12. Responses to Survey Question 16.....	B-6
Figure B13. Responses to Survey Question 17.....	B-7
Figure B14. Responses to Survey Question 18.....	B-7
Figure B15. Responses to Survey Question 19.....	B-8
Figure B16. Responses to Survey Question 20.....	B-8
Figure B17. Responses to Survey Question 21.....	B-9
Figure B18. Responses to Survey Question 22.....	B-9
Figure B19. Responses to Survey Question 23.....	B-10
Figure B20. Responses to Survey Question 24.....	B-10
Figure D1. Responses to Survey Question 5, Disaggregated by Race/Ethnicity.....	D-1
Figure D2. Responses to Survey Question 5, Disaggregated by Gender.....	D-1
Figure D3. Responses to Survey Question 6, Disaggregated by Race/Ethnicity.....	D-2
Figure D4. Responses to Survey Question 6, Disaggregated by Gender.....	D-3

**Science Olympiad Urban Science Initiative Evaluation**

Figure D5. Responses to Survey Question 7, Disaggregated by Race/Ethnicity..... D-9

Figure D6. Responses to Survey Question 7, Disaggregated by Gender..... D-9

Figure D7. Responses to Survey Question 8, Disaggregated by Race/Ethnicity..... D-4

Figure D8. Responses to Survey Question 8, Disaggregated by Gender..... D-4

Figure D9. Responses to Survey Question 9, Disaggregated by Race/Ethnicity..... D-5

Figure D10. Responses to Survey Question 9, Disaggregated by Gender..... D-5

Figure D11. Responses to Survey Question 10, Disaggregated by Race/Ethnicity..... D-6

Figure D12. Responses to Survey Question 10, Disaggregated by Gender..... D-6

Figure D13. Responses to Survey Question 11, Disaggregated by Race/Ethnicity..... D-7

Figure D14. Responses to Survey Question 11, Disaggregated by Gender..... D-7

Figure D15. Responses to Survey Question 12, Disaggregated by Race/Ethnicity..... D-8

Figure D16. Responses to Survey Question 12, Disaggregated by Gender..... D-8

Figure D17. Responses to Survey Question 13, Disaggregated by Race/Ethnicity..... D-9

Figure D18. Responses to Survey Question 13, Disaggregated by Race/Ethnicity..... D-9

Figure D19. Responses to Survey Question 14, Disaggregated by Race/Ethnicity..... D-11

Figure D20. Responses to Survey Question 14, Disaggregated by Race/Ethnicity..... D-11

Figure D21. Responses to Survey Question 15, Disaggregated by Race/Ethnicity..... D-11

Figure D22. Responses to Survey Question 15, Disaggregated by Gender..... D-11

Figure D22. Responses to Survey Question 16, Disaggregated by Race/Ethnicity..... D-12

Figure D23. Responses to Survey Question 16, Disaggregated by Gender..... D-13

Figure D24. Responses to Survey Question 17, Disaggregated by Race/Ethnicity..... D-14

Figure D25. Responses to Survey Question 17, Disaggregated by Gender..... D-14

Figure D26. Responses to Survey Question 18, Disaggregated by Race/Ethnicity..... D-15

Figure D27. Responses to Survey Question 18, Disaggregated by Gender..... D-15

Figure D28. Responses to Survey Question 19, Disaggregated by Race/Ethnicity..... D-16

Figure D29. Responses to Survey Question 19, Disaggregated by Gender..... D-16

Figure D30. Responses to Survey Question 20, Disaggregated by Race/Ethnicity..... D-17

Figure D31. Responses to Survey Question 20, Disaggregated by Gender..... D-17

Figure D32. Responses to Survey Question 21, Disaggregated by Race/Ethnicity..... D-18

Figure D33. Responses to Survey Question 21, Disaggregated by Gender..... D-18

Figure D34. Responses to Survey Question 22, Disaggregated by Race/Ethnicity..... D-19

Figure D35. Responses to Survey Question 22, Disaggregated by Gender..... D-19

Figure D36. Responses to Survey Question 23, Disaggregated by Race/Ethnicity..... D-20

Figure D37. Responses to Survey Question 23, Disaggregated by Race/Ethnicity..... D–20

Figure D38. Responses to Survey Question 24, Disaggregated by Race/Ethnicity..... D–21

Figure D39. Responses to Survey Question 24, Disaggregated by Gender..... D–21

Figure F1. Responses to State Competition Survey Question 1 ..... F–1

Figure F2. Responses to State Competition Survey Question 2 ..... F–2

Figure F3. Responses to State Competition Survey Question 3 ..... F–3

Figure F4. Responses to State Competition Survey Question 4 ..... F–4

Figure F5. Responses to State Competition Survey Question 5 ..... F–5

Figure F6. Responses to State Competition Survey Question 6 ..... F–6

Figure F7. Responses to State Competition Survey Question 7 ..... F–7

Figure F8. Responses to State Competition Survey Question 8 ..... F–8

Figure F9. Responses to State Competition Survey Question 9 ..... F–9

Figure F10a. Responses to State Competition Survey Question 10a..... F–10

Figure F10b. Responses to State Competition Survey Question 10b ..... F–11

Figure F10c. Responses to State Competition Survey Question 10c..... F–12

Figure F10d. Responses to State Competition Survey Question 10d ..... F–13

Figure F10e. Responses to State Competition Survey Question 10e..... F–13

Figure F10f. Responses to State Competition Survey Question 10f ..... F–14

Table H1. Survey Results for all Science Olympiad Participants ..... H–1

Table H2. Disaggregated Survey Results by Gender..... H–2

Table H3. Disaggregated Survey Results by Gender..... H–3

Table H4. Disaggregated Survey Results by Race/Ethnicity..... H–4



**SCIENCE OLYMPIAD  
URBAN SCIENCE INITIATIVE  
UNIVERSITY OF ILLINOIS, URBANA-CHAMPAIGN**

**EVALUATION REPORT  
Spring 2009**

**Program Description**

Science Olympiad (SO) is a national, non-profit organization dedicated to improving the quality of K–12 science education; increasing male, female, and minority interest in science; creating a technologically literate workforce; and providing recognition for outstanding achievement by both students and teachers. Science Olympiad hopes to achieve these goals by fostering student participation in Science Olympiad tournaments and non-competitive events and by encouraging educators to incorporate Science Olympiad into classroom curriculum and to attend teacher training institutes.

In 2006, the Science Olympiad Executive Board determined that increasing minority participation in Science Olympiad was the number one goal of the organization. With a generous grant from the Abbott Fund, the Urban Schools Initiative supported six Chicago Public High Schools in 2007, providing each team with membership, materials, and extensive training workshops for each of the school coaches. In addition, school coaches/teachers received stipends from CPS. In 2007, USI was funded in part by the Science Olympiad, Chicago Public Schools, Abbott Fund, and the University of Illinois.

**Evaluation Context**

This is the first external evaluation of the Science Olympiad Urban Science Initiative. This evaluation is not required. However, Science Olympiad administrators expressed an interest in formally evaluating the program for the purposes of learning about the program participants and addressing issues of program design, context, implementation, and outcomes for reflection and critique.

**Evaluation Purpose, Audience, and Key Evaluation Questions**

The purpose of the evaluation is to provide evaluative feedback to program administrators and staff regarding (a) the characteristics of the program participants; (b) the experience of the Science Olympiad coaches; and (c) the quality and meaningfulness of the program experience for its participants. This feedback is intended to enhance educators' understanding of the particular characteristics and features of the program as designed and as implemented at the school and to provide information useful for program implementation and expansion.

Given these purposes, the key evaluation questions to be addressed in this evaluation are the following:

**Science Olympiad Urban Science Initiative Evaluation**

1. What are the participants’ attitudes toward STEM and Science Olympiad as perceived by the coaches and the student participants themselves?
2. In what ways and to what extent did Science Olympiad and Chicago Public Schools support the coaches program? What types of support do the coaches need for Science Olympiad to be successful?
3. How did Science Olympiad participants experience the visit to University of Illinois at Urbana-Champaign for the state competition?

Table 1 presents the intended linkages between key evaluation questions, the information required from the evaluation questions, and planned methods of data gathering.

**Table 1. Key Evaluation Questions and Methodology**

<b>Key Evaluation Question</b>	<b>Information Required</b>	<b>Method</b>	<b>Sample</b>
1. What are the participants’ attitudes toward STEM and Science Olympiad as perceived by the coaches and the student participants themselves?	1a. Participant attitudes about STEM 1b. Participant experience of Science Olympiad	1a. Participant surveys 1b. Observation of Science Olympiad events	1a–b. All students
2. In what ways and to what extent did Science Olympiad and Chicago Public Schools support the coaches program? What types of support do the coaches need for Science Olympiad to be successful?	2. Participant experience of Science Olympiad	2a. Interview 2b. Questionnaire 2c. Observation of Science Olympiad Events	2a–c. All Science Olympiad coaches
3. How did Science Olympiad participants experience the visit to University of Illinois at Urbana-Champaign for the state competition?	3. Participant experience of Illinois visit and state competition	3a. Participant surveys 3b. Observation of Science Olympiad events	3a–b. All Urban Science Initiative state competitors

**Evaluation Design and Methods**

This evaluation used a mixed-methods design in order to generate a comprehensive, in-depth understanding of the phenomena of interest. Methods used included questionnaires, interviews, and observations.

*Unstructured Observations.* The primary purpose of these observations was to capture a descriptive record of the structure, content, and activities of the program and the character of the students’ participation in them. For observations of students’ participation, 2–3 program

participants were randomly selected for each session for close observation so that a large sample of participants would have been observed after multiple observations.

*Participant Surveys.* All program participants who attended the regional and the state competitions completed surveys after the competition while waiting for the awards ceremony. The surveys focused on participants’ attitudes towards STEM and experiences with the Science Olympiad. Each survey took approximately 20 minutes to complete. Surveys were not collected from the three schools who did not attend the regional competition.

*Interviews/Questionnaires.* All of the Science Olympiad coaches were invited to participate in an interview or to fill out a questionnaire during the regional competition. Three coaches were interviewed, and 13 filled out questionnaires. The interviews and questionnaires took about 20 minutes to complete. Two of the three coaches who did not attend the regional competition were interviewed by telephone or in person.

### Program Participants

During the 2008–2009 school year, nine high schools and eight elementary/middle schools participated in the Science Olympiad Urban Science Initiative. By the regional competition in March, eight high schools and six elementary schools still had teams who met regularly and competed. Tables 2 and 3 present demographic information about the student participants.

**Table 2. Race/Ethnicity of Students by Gender**

Race/Ethnicity	Female	Male
African American	34	24
Asian	2	3
Caucasian	7	5
Hispanic/Latina	25	13
Native American	3	2
Not given	1	2

**Table 3. Grade Level of Students by Gender**

Grade Level	Female	Male
5th	3	1
6th	18	8
7th	6	10
8th	9	4
9th	2	0
10th	7	2
11th	9	10
12th	17	13

## Findings

**Evaluation Question #1:** *What are the participants' attitudes toward engineering and STEM, as perceived by the coaches and the student participants themselves?*

A key aspect of the evaluation was to note the students' attitudes towards STEM and Science Olympiad. To address this question, evaluators obtained data via a post-competition survey completed by the students. A copy of the Science Olympiad Regional Competition Survey is presented in Appendix A. Results for all students are presented in Appendix B, results to the open-ended survey items are presented in Appendix C, and disaggregated results are presented in Appendix D.

**Most of the students were interested in science and pursuing a career in science.** The survey contained two items related to student interest in science. The vast majority of students expressed an interest in science while slightly more than half indicated an interest in pursuing a career in engineering.

- **Survey Question #5** asked students if they were interested in science. Their responses ranged from *Strongly Agree* to *Disagree*, with 86% of the students indicating that they were interested in science.
- **Survey Question #6** asked students if they were interested in pursuing a career in science. Their responses ranged from *Strongly Agree* to *Disagree*, with 57% indicating that they were interested in a career in science, while 29% were not sure.

**Many students held positive perceptions about themselves in science.** Many students were confident about their ability to become scientists. Many could picture themselves as scientists.

- **Survey Question #14** asked students if they were confident that they could become scientists. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 68% of the students indicating that they were confident about becoming scientists, while 25% were not sure.
- **Survey Question #15** asked students if they could see themselves working in science. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 58% of the students indicating that they could picture themselves working in science while 31% were not sure.

**Students' perceptions about people interested in STEM were positive.** Five survey questions were related to students' perceptions about people and STEM. Most students did not see scientists as nerds or think scientists work more with equipment than with people. Many understood what scientists and engineers actually do.

- **Survey Question #7** asked students if people who enter math and science careers tend to be "nerds" who lack social skills. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 85% of the students disagreeing with the belief that scientists are nerds.

- **Survey Question #8** asked students if scientists and engineers work longer hours than most other professionals. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 51% of the students indicating that they were not sure about the hours that scientists work.
- **Survey Question #10** asked students if becoming a scientist or engineer is a good way to serve humanity. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 76% of the students indicating that they saw science as a way to serve humanity.
- **Survey Question #11** asked students if they have a good understanding of what scientists and engineers actually do. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 70% of the students reporting that they understood what engineers actually do.
- **Survey Question #12** asked students if scientists and engineers mainly work alone, with equipment instead of people. Their responses ranged from *Strongly Agree* to *Strongly Disagree*. Fifty-eight percent of the students did not see scientists as people who work more with equipment than with people.

**Students might hold attitudes that may serve as potential barriers to STEM.** Only a third of the students were comfortable with the amount of education needed to become a scientist. Less than half of the students surveyed agreed with the notion that girls who were interested in science were as popular with boys as other girls are.

- **Survey Question #9** asked students if having a career in engineering or science requires too many years of education. Their responses ranged from *Strongly Agree* to *Strongly Disagree*. Twenty-nine percent of students agreed with the statement; 35% were not sure; and 36% of the students did not agree.
- **Survey Question #13** asked students if girls who are good in math and/or science are as popular with boys as other girls are. Their responses ranged from *Strongly Agree* to *Disagree*. Forty-six percent of students agreed with the statement; 32% were not sure; and 23% of the students did not agree.

**Students had many positive experiences participating in Science Olympiad.** Three survey questions were related to student experiences with Science Olympiad. The vast majority of the students reported having fun in Science Olympiad and making new friends who shared their interest in science. Most intended to participate next year.

- **Survey Question #19** asked students if they had fun in Science Olympiad. Their responses ranged from *Strongly Agree* to *Disagree*, with 92% of the students reporting that they had fun in Science Olympiad.
- **Survey Question #21** asked students if they had made new friends who shared their interest in science. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 68% of the students responding that they had made new friends.

**Table 4. Survey Results for All Science Olympiad Participants**

Questions	N	M	SD
5. I am interested in science.	120	1.73	0.847
6. I am interested in pursuing a career in science.	120	2.38	1.078
7. People who enter math and science careers tend to be “nerds” who lack social skills.	116	4.30	0.897
8. Scientists and engineers work longer hours than most other professionals.	119	2.76	0.945
9. You have to go to school for too many years to have a career in science.	120	3.10	1.048
10. Becoming a scientist or engineer is a good way to serve humanity.	119	2.04	0.960
11. I have a good understanding of what scientists and engineers actually do.	119	2.14	0.886
12. Scientists and engineers mainly work alone, with equipment instead of people.	119	3.60	0.942
14. I am confident I can be a scientist.	119	2.13	0.935
15. I can see myself working in science someday.	119	2.29	1.052
16. Working in a science laboratory would not be an interesting way to earn a living.	118	3.91	1.054
17. Do you know anyone who has a job in science, technology, engineering, or mathematics?	115	1.21	0.408
18. Science Olympiad has helped increase my interest in science.	118	1.70	0.720
19. I had fun in Science Olympiad this year.	119	1.37	0.623
20. I’ve learned a lot about science by participating in Science Olympiad.	119	1.62	0.651
21. Science Olympiad has helped increase my interest in science and technology careers.	119	1.87	0.953
22. Science Olympiad has increased my confidence in my ability to do science well.	119	1.73	0.685
23. I’ve been able to make new friends in Science Olympiad who share my interest in math and/or science.	119	2.29	1.203
24. I intend to participate in Science Olympiad next year.	87	1.72	0.845

1 – Responses 1 through 5 range from Strongly Agree to Strongly Disagree, respectively.

2 – Only respondents with both pre- and post-surveys were included in this analysis.

- **Survey Question #24** asked students if they intended to participate in Science Olympiad next year. Their responses ranged from *Strongly Agree* to *Disagree*. Eighty-one percent of the students planned to join Science Olympiad next year.

**Science Olympiad may have had a positive impact on students’ experience with science.**

Four survey questions asked students about their perceptions of Science Olympiad’s impact on their experiences with science. The vast majority of the students reported that Science Olympiad increased their interest, confidence, and knowledge about science. Many said that Science Olympiad has increased their interest in STEM careers.

- **Survey Question #18** asked students if they agreed with the statement, “Science Olympiad has helped increase my interest in science.” Their responses ranged from *Strongly Agree* to *Disagree*. Ninety-two percent of the students agreed that it had.

- **Survey Question #20** asked students if they agreed with the statement, “I’ve learned a lot about science by participating in Science Olympiad.” Their responses ranged from *Strongly Agree* to *Disagree*, with 92% of the students agreeing.
- **Survey Question #21** asked students if they agreed with the statement, “Science Olympiad increased my interest in STEM careers.” Their responses ranged from *Strongly Agree* to *Disagree*. Eighty-one percent of the students responded that they planned to join Science Olympiad next year.
- **Survey Question #22** asked students if they agreed with the statement, “Science Olympiad has increased my confidence in my ability to do science well.” Their responses ranged from *Strongly Agree* to *Disagree*, and 90% of the students agreed.

**There were no statistically significant differences in survey results among gender and race/ethnicity groups.** There were very slight differences in the average male and female responses. Among race/ethnicity groups, the Caucasian students expressed slightly more positive attitudes than the other racial/ethnic groups. None of the variation among the disaggregated groups was statistically significant.

**Evaluation Question #2:** *In what ways and to what extent did Science Olympiad and Chicago Public Schools support the coaches program? What types of support do the coaches need for Science Olympiad to be successful?*

Seven coaches were interviewed individually, and fifteen filled out a questionnaire. Both the interview and the questionnaire focused on gathering data about the coaches’ experiences and their perceptions about the impact of Science Olympiad. The counselors’ responses are summarized thematically.

**Most of the coaches decided to participate in Science Olympiad to expose their students to engaging science activities.** Many of the coaches wanted to help their students by exposing them to fun and interesting science activities. Some were already familiar with Science Olympiad and were excited about the opportunity to get involved in a science competition. A few coaches wanted to share their love of science with their students and enhance the science curriculum.

- *“I believe that the hands-on activities (focus of SO) help the students learn science. Young students rarely engage in activities that take time, analysis, and reflection.”*
- *“I decided to coach the SO because it is another way to involve my students in a content competition and to continue developing love towards science.”*

**The coaches felt like they were adequately supported by Science Olympiad, CPS, and their administration, but would welcome more funds, materials, and training.** Coaches reported satisfaction with the level of support they are receiving. They also felt like they could use more support in all areas. There was great appreciation for the training workshop and the Build-It Day.

## Science Olympiad Urban Science Initiative Evaluation

Those events gave coaches a good idea of what to expect. Because there are so many subject areas, few coaches felt strong enough to support their team members in all of the events.

Most of the coaches spent their own money to purchase materials for the team. They expected these expenses to be reimbursed by the Science Olympiad stipend. Seven of the schools were able to get funds and/or supplies from their schools, and one school reported getting materials from students. A few schools were able to get support from local businesses who donated materials. The internet also served as a resource for a few coaches.

**Most of the coaches thought that the Science Olympiad events correlated with their curriculum.** The elementary schools found a lot of correlation between their curriculum and the events. Many thought that the events covered the material in more depth. In the high schools, there was more variation about the degree of correlation between science content and the events, but most thought that the critical thinking involved was important for the students.

- *“The curriculum is excellent, allowing students to take knowledge to higher (Bloom’s) levels.”*
- *“The SO correlates with the state standards because it stresses scientific inquiry as well as the various content areas.”*

**Most of the coaches experienced challenges in maintaining high student participation and finding the time to meet with students and help them individually.** At the beginning of the year, most of the coaches had high participation which tapered off as time progressed. This was the major challenge of the coaches interviewed who did not attend the regional competition. Two coaches worked on Science Olympiad projects during a class period to recruit and maintain team members. Not all of the schools had problems with attrition. Amelia Earhart Elementary maintained high participation by picking students who “won” the opportunity to join Science Olympiad. Decatur Classical only allowed teachers to have after-school clubs for ten weeks. Science Olympiad was one of the few after-school clubs approved at Decatur. After-school clubs at Decatur were sponsored by Target, which provided transportation and snacks for the students. Initially, students had to qualify to compete in the regional competition. However, the team lost many competitors and alternates to spring break trips due to timing of the regional competition.

Coaches struggled to find the time to prep as much as they wanted for each event. It was also difficult to schedule meeting times for active students. Many of the teams had only one or two coaches. Decatur Classical was the only school that reported having several coaches. Two of the coaches were two teachers and several more were parent volunteers who came in to help coach particular events.

**Most of the coaches expect their schools to continue to support Science Olympiad.** Coaches had varying levels of support from their schools. A few schools offered moral support, but did not provide materials or funds. Many coaches were able to get additional support when needed from their administration and were confident that this support will continue when external funding from Science Olympiad expires.

**Evaluation Question #3:** *How did Science Olympiad participants experience the visit to University of Illinois at Urbana-Champaign for the state competition?*

To address this question, data were obtained from a state competition post-survey (see Appendix E) completed by the students. Results for all students are presented in Appendix F and Tables 5 and 6.

**The visit to Illinois successfully piqued the students' interest in attending UIUC.** This was the first visit for most of the students. More students were interested in attending Illinois after this visit. Most of the students did not believe that Illinois is too big for them and were interested in learning more about the university. Most of the students were also satisfied with the logistical aspects of the trip, such as bus accommodations, lab visits, and meals. One student remarked about the Friday activities, "They really enriched my knowledge about UIUC."

- **Survey Question #1** asked students if they had visited Illinois before. Seventy-five percent of the students had not visited Illinois before. Most of those who had come to Illinois before did so during last year's state competition.
- **Survey Question #2** asked students if they agreed with the following statement, "Before this visit, I would have not thought about attending the UIUC." Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 43% of the students agreeing with the statement, while 35% disagreed.
- **Survey Question #3** asked students if they agreed with the statement, "After this visit, I am interested in attending UIUC." Their responses ranged from *Strongly Agree* to *Strongly Disagree*; 75% of students agreed with the statement, while 8% disagreed.
- **Survey Question #5** asked students if they thought that Illinois was too large to for them to attend. Their responses ranged from *Strongly Agree* to *Strongly Disagree*. Sixty-seven percent did not think that Illinois is too large.
- **Survey Question #6** asked students if they pictured themselves attending Illinois. Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 63% of the students indicating that they could see themselves attending Illinois.
- **Survey Question #7** asked students if they wanted to learn more about Illinois. Their responses ranged from *Strongly Agree* to *Strongly Disagree*. Seventy-seven percent of the students reported that they would like to learn more about attending Illinois.

**The Illinois visit may have helped the students learn more about the STEM field.** Students reported learning more about what it might be like to study science/engineering at Illinois and about various STEM career opportunities. Students made comments below:

- *"I learned new stuff about the field I want to go into."*

## Science Olympiad Urban Science Initiative Evaluation

- “The Friday activities were valuable because it gets you interested in a career and it helps you choose a career in life.”
- “It helped me be interest[ed] in other career paths.”
- **Survey Question #4** asked students if they agreed with the following statement, “The campus tour helped me to learn what it might be like to study science/engineering at UIUC.” Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 86% of the students agreeing with the statement.
- **Survey Question #8** asked students if they agreed with the following statement, “This trip has increased my interest in science/engineering.” Their responses ranged from *Strongly Agree* to *Strongly Disagree*, with 67% of the students agreeing with the statement.

**Table 5. Survey Results for All Science Olympiad Participants**

Questions	N	M	SD
Is this your first visit to UIUC?	51	1.25	0.440
Before this visit, I would have not thought about attending the UIUC.	51	2.98	1.157
After this visit, I am interested in attending UIUC.	51	2.31	1.029
The campus tour helped me learn what it might be like to study science/engineering at UIUC.	51	1.86	0.825
UIUC is too large for me to attend.	51	3.70	0.789
I can see myself attending UIUC.	51	2.20	0.980
I want to learn more about UIUC.	51	2.16	0.809
This trip has increased my interest in science/engineering.	51	2.25	0.913
University students and staff were helpful and friendly.	51	1.69	0.616

1 – Responses 1 through 5 range from Strongly Agree to Strongly Disagree, respectively.

**Table 6. Ratings for Illinois Visit**


Activity	N	M	SD
Bus accommodations and trip	51	1.78	0.901
Meals	51	2.24	0.992
Laboratory visits	51	1.94	0.944
Event clinics (rate only if you participated.)	51	1.90	0.912
Hotel stay and accommodations	51	2.78	1.604
Science Olympiad Awards Ceremony	51	2.20	0.957

1 – Responses 1 through 5 range from Excellent to Poor, respectively.

**APPENDIX A**  
**SCIENCE OLYMPIAD REGIONAL COMPETITION**  
**PARTICIPANT SURVEY**



UNIVERSITY OF ILLINOIS  
AT URBANA - CHAMPAIGN

<p>Bureau of Educational Research College of Education 38 Education Building 1310 South Sixth Street Champaign, IL 61820</p>		<p>Women in Engineering College of Engineering 306 Engineering Hall 1308 West Green Street, MC-266 Urbana, IL 61801</p>
--	---	---

**SCIENCE OLYMPIAD REGIONAL COMPETITION  
PARTICIPANT SURVEY**

Printed Name: \_\_\_\_\_

**Section I: Demographics**

Race/Ethnicity (Check all that apply):

- American Indian/Alaskan Native
- Asian
- White
- Black/African American
- Native Hawaiians or Pacific Islanders
- Hispanic/Latina(o)
- Mixed race/ethnicity or other

(Please specify): \_\_\_\_\_

Age: \_\_\_\_\_

Grade: \_\_\_\_\_

School \_\_\_\_\_

**Science Olympiad Urban Science Initiative Evaluation**

**Section I:**

1) List three career fields that you are thinking about pursuing and describe why they interest you.

Career #1

---

---

---

---

Career #2

---

---

---

---

Career #3

---

---

---

---

2) How did you learn about Science Olympiad?

---

---

---

---

3) Why did you decide to participate in Science Olympiad?

---

---

---

---

4) Describe your experiences with science. (Has it been fun? Has it been stressful? How do you feel about science?)

---

---

---

---

**Please Check One:**

- 5) I am interested in science.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 6) I am interested in pursuing a career in science.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 7) People who enter math and science careers tend to be the “nerds” who lack social skills.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 8) Scientists and engineers work longer hours than most other professionals.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 9) You have to go to school for too many years to have a career in science.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 10) Becoming a scientist or an engineer is a good way to serve humanity.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 11) I have a good understanding of what scientists actually do.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 12) Scientists and engineers mainly work alone, with equipment instead of people.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 13) Girls who are good in math and/or science are just as popular with boys as other girls are.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 14) I am confident that I can be a scientist.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 15) I can picture myself working in science someday.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 16) Working in a science laboratory **would not** be an interesting way to earn a living.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 17) Do you know anyone that has a job in science, technology, engineering or mathematics?  
 Yes    No
- 18) Science Olympiad has helped increase my interest in science.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly
- 19) I had fun in Science Olympiad this year.  
 Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly

**Science Olympiad Urban Science Initiative Evaluation**

20) I've learned a lot about science by participating Science Olympiad.

- Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly

21) I've learned a lot about science by participating Science Olympiad.

- Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly

22) I've been able to make new friends in Science Olympiad who share my interest in math and/or science.

- Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly

23) I've been able to make new friends in Science Olympiad who share my interest in math and/or science.

- Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly

24) I intend to participate in Science Olympiad next year.

- Strongly Agree    Agree    Not Sure    Disagree    Disagree Strongly

25) If you could continue with your schooling as far as you wanted, what is the highest level of education that you would want to complete? Check one.

- High School
- Community College (two-year college program) or Vocational School
- College (four or five year college program)
- Graduate School - Master's Degree
- Graduate School - Doctoral Degree (Ph.D.)
- Medical, Dental, or Veterinary School
- Law School
- Other (specify \_\_\_\_\_)

26) What is the highest level of education you really think you will complete? Check one.

- High School
- Community College (two-year college program) or Vocational School
- College (four or five year college program)
- Graduate School - Master's Degree
- Graduate School - Doctoral Degree (Ph.D.)

- Medical, Dental, or Veterinary School
- Law School
- Other (specify \_\_\_\_\_)

27) How encouraging or discouraging would you say each of the following have been of your interests in science, math and/or technology? Circle one answer for each of the others.

**Science Olympiad Urban Science Initiative Evaluation**

	Very Encouraging	Somewhat Encouraging	Neutral	Somewhat Discouraging	Very Discouraging
a) Parents/Caregiver	5	4	3	2	1
b) Math Teacher	5	4	3	2	1
c) Science Teacher	5	4	3	2	1
d) Computer Teacher	5	4	3	2	1
e) Other Teacher	5	4	3	2	1
f) Science Olympiad Coach	5	4	3	2	1
g) Friends	5	4	3	2	1
h) Other family member	5	4	3	2	1

28) Did Science Olympiad inspire you to take any the following courses?

	Very Unlikely	Somewhat Likely	Somewhat Unlikely	Very Unlikely	Already Taken
a) Algebra:	1	2	3	4	5
b) Geometry:	1	2	3	4	5
c) Trigonometry:	1	2	3	4	5
d) Pre-Calculus:	1	2	3	4	5
e) Calculus:	1	2	3	4	5
f) AP Calculus:	1	2	3	4	5
g) Biology:	1	2	3	4	5
h) AP Biology:	1	2	3	4	5
i) Chemistry:	1	2	3	4	5
j) AP Chemistry:	1	2	3	4	5
k) Physics:	1	2	3	4	5
l) AP Physics:	1	2	3	4	5
M) Other	1	2	3	4	5

29) Do you have any recommendations for future Science Olympiads? \_\_\_\_\_

---



---



---



---

Thank you for your input!

**APPENDIX B**  
**RESPONSES TO SCIENCE OLYMPIAD REGIONAL COMPETITION**  
**PARTICIPANT SURVEY QUESTIONS**



## Appendix B

### Responses to Science Olympiad Regional Competition Survey Questions

Figure B1. Responses to Survey Question 5

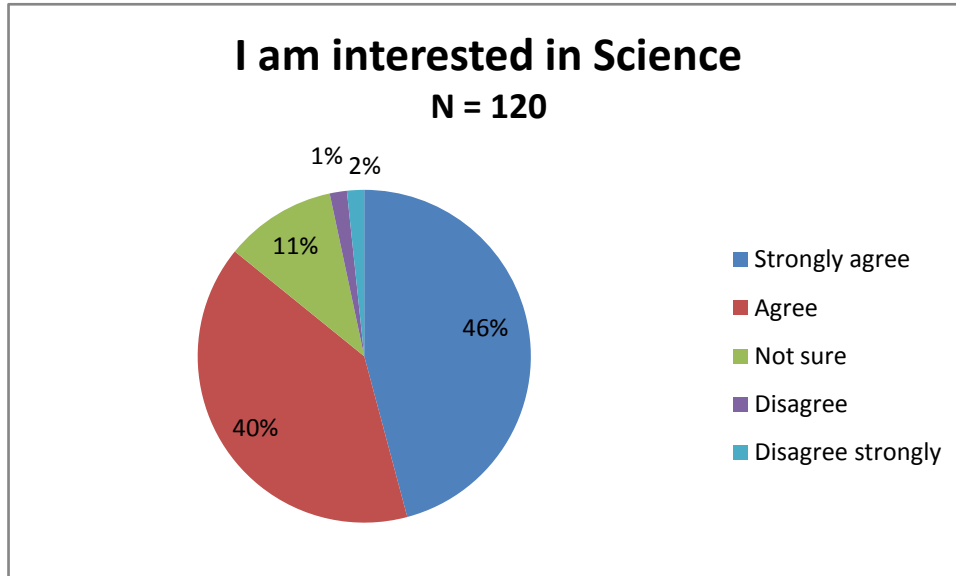


Figure B2. Responses to Survey Question 6

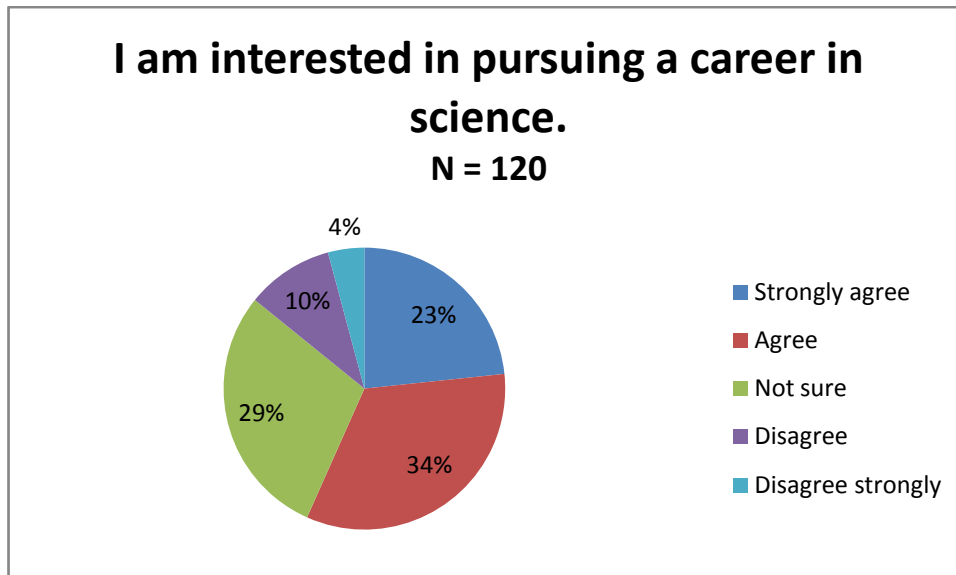


Figure B3. Responses to Survey Question 7

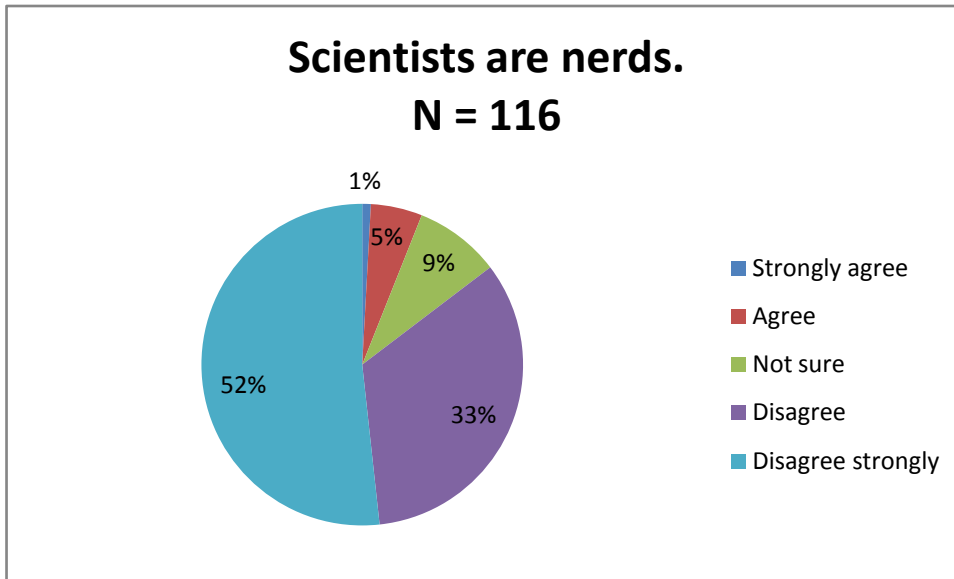


Figure B4. Responses to Survey Question 8

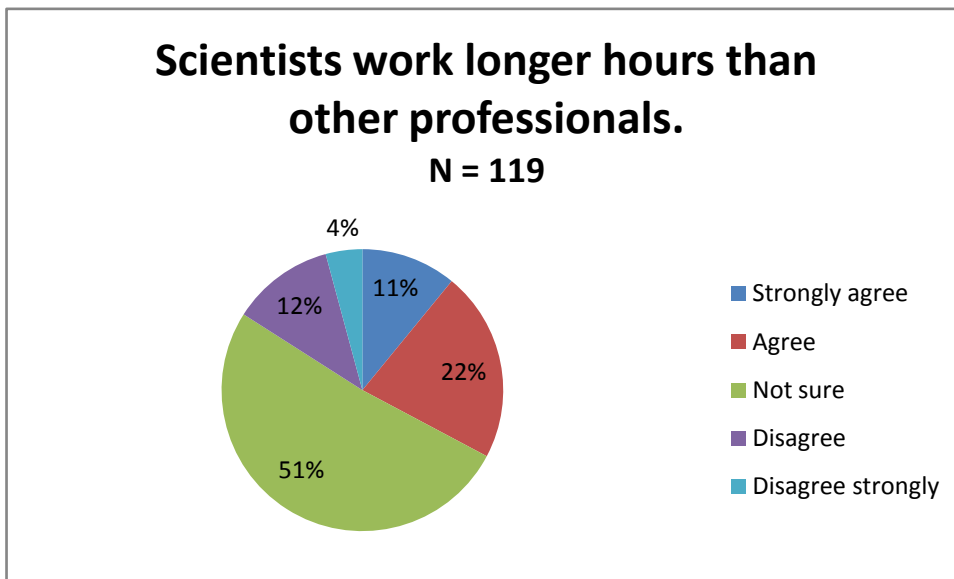


Figure B5. Responses to Survey Question 9

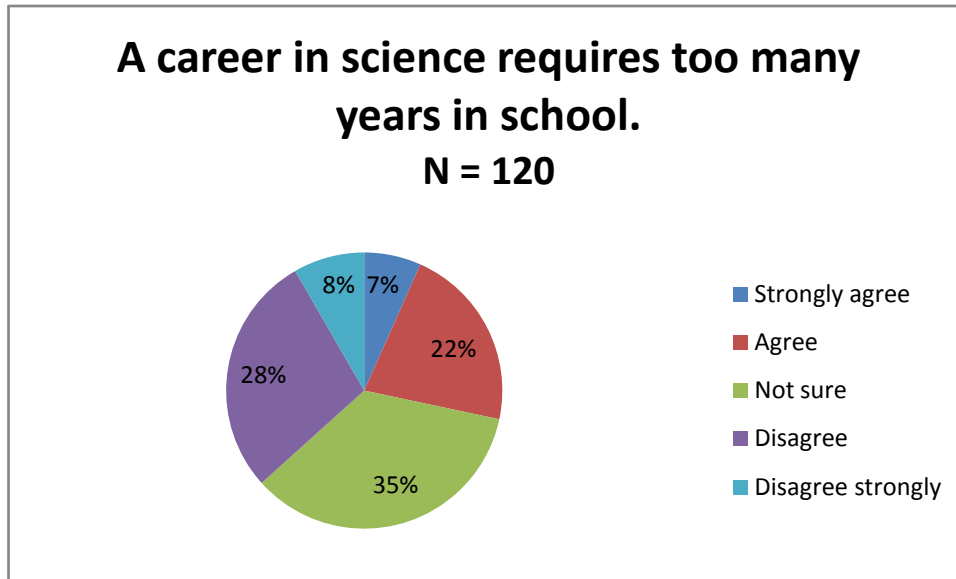


Figure B6. Responses to Survey Question 10

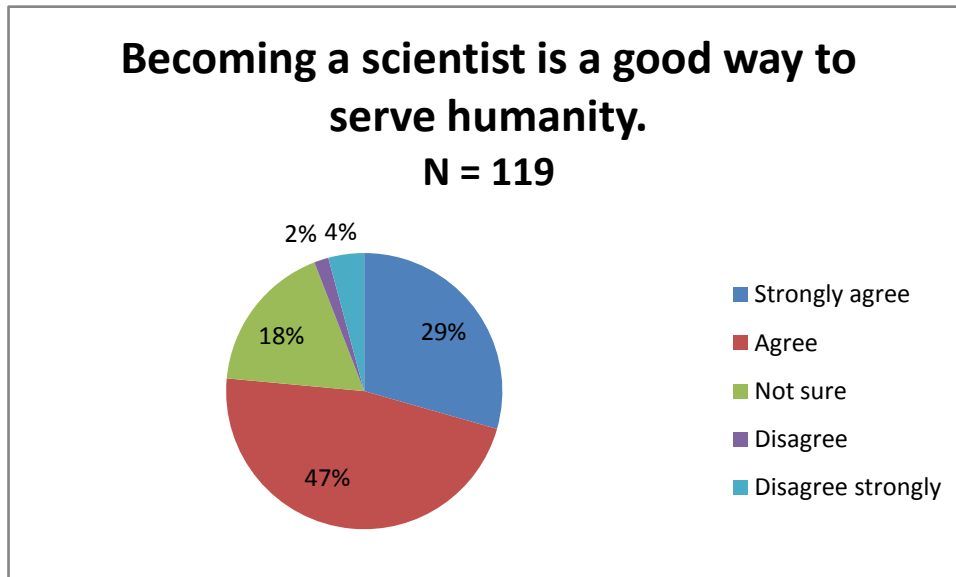


Figure B7. Responses to Survey Question 11

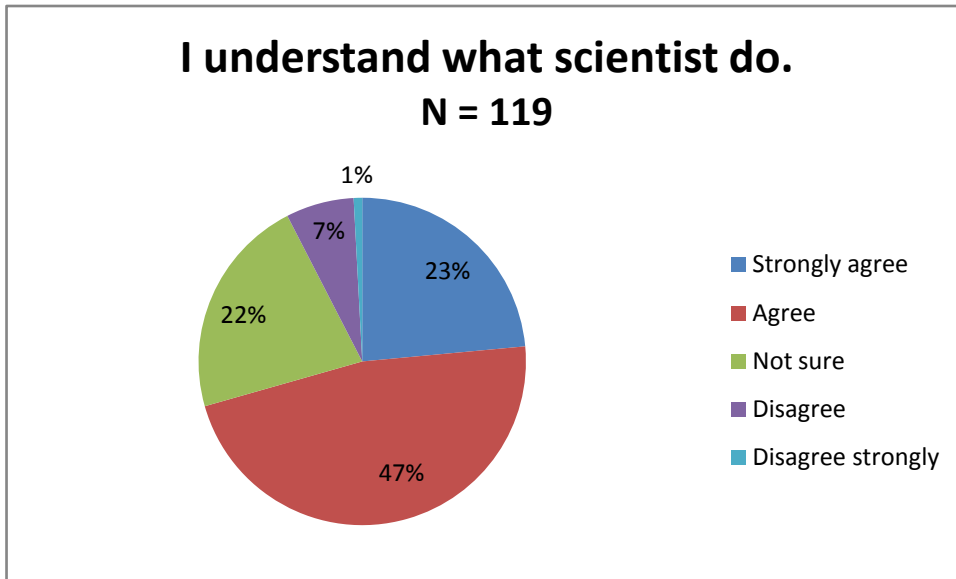


Figure B8. Responses to Survey Question 12

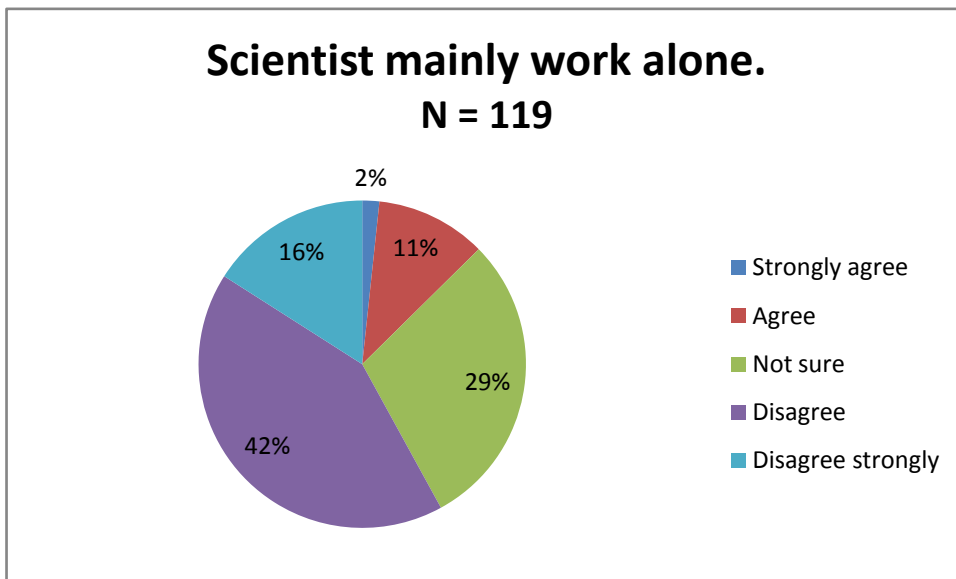


Figure B9. Responses to Survey Question 13

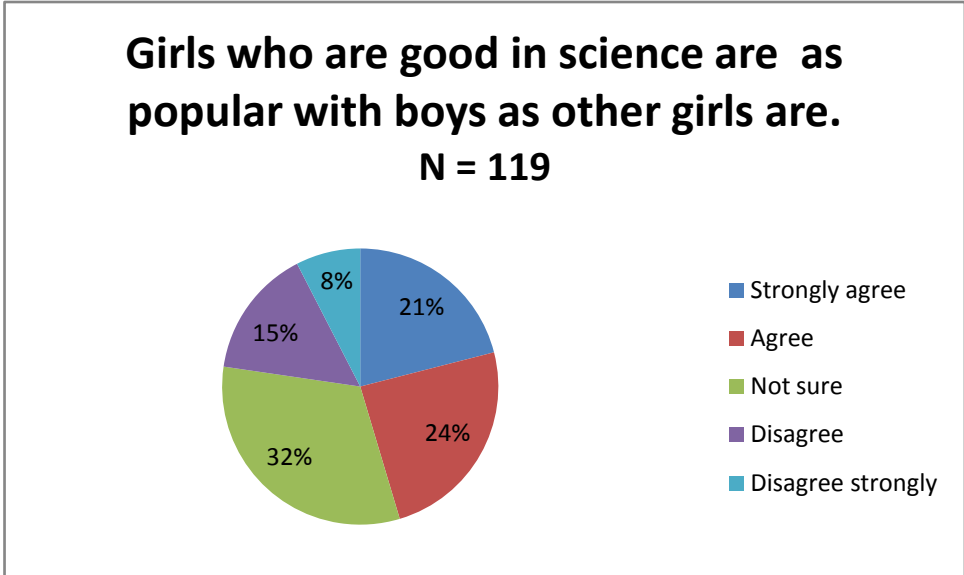


Figure B10. Responses to Survey Question 14

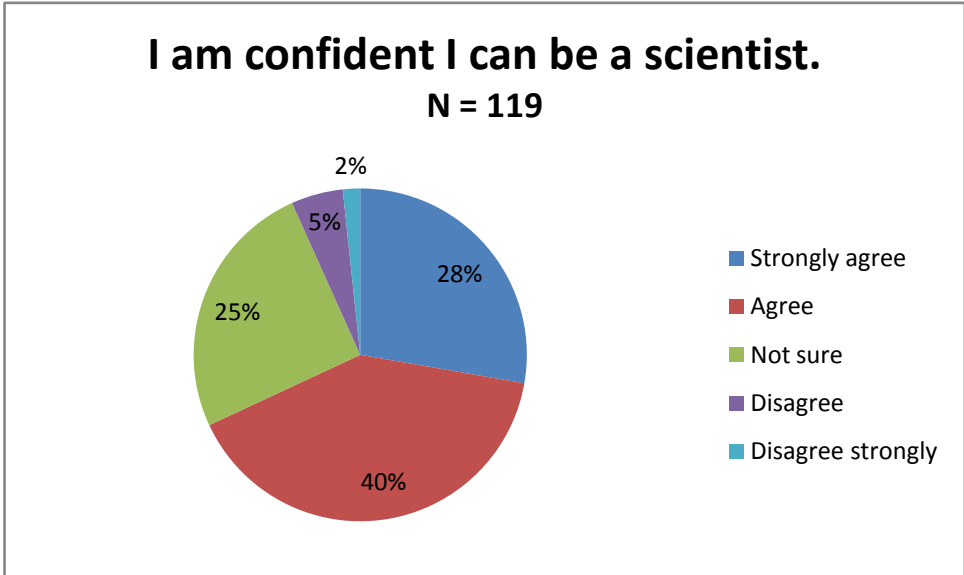


Figure B11. Responses to Survey Question 15

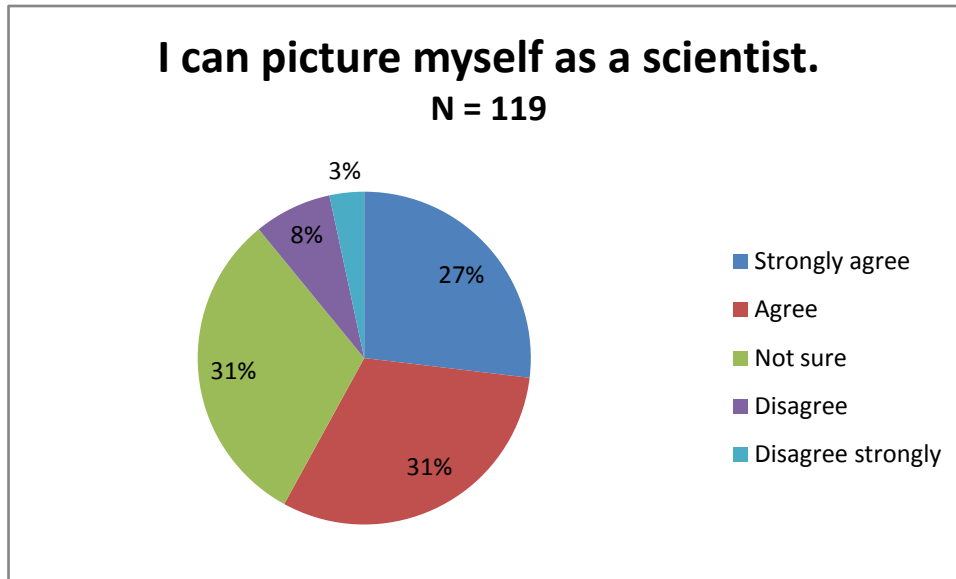


Figure B12. Responses to Survey Question 16

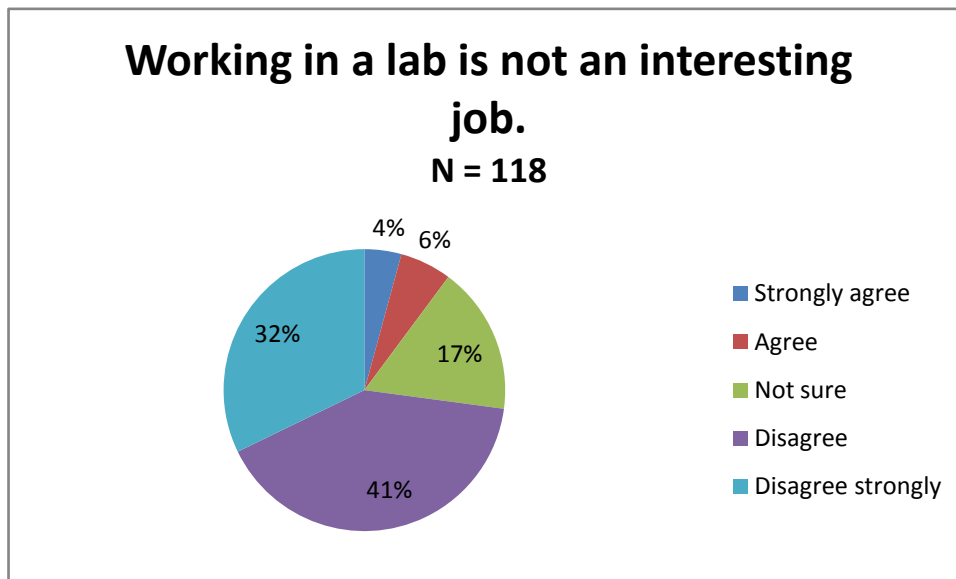


Figure B13. Responses to Survey Question 17

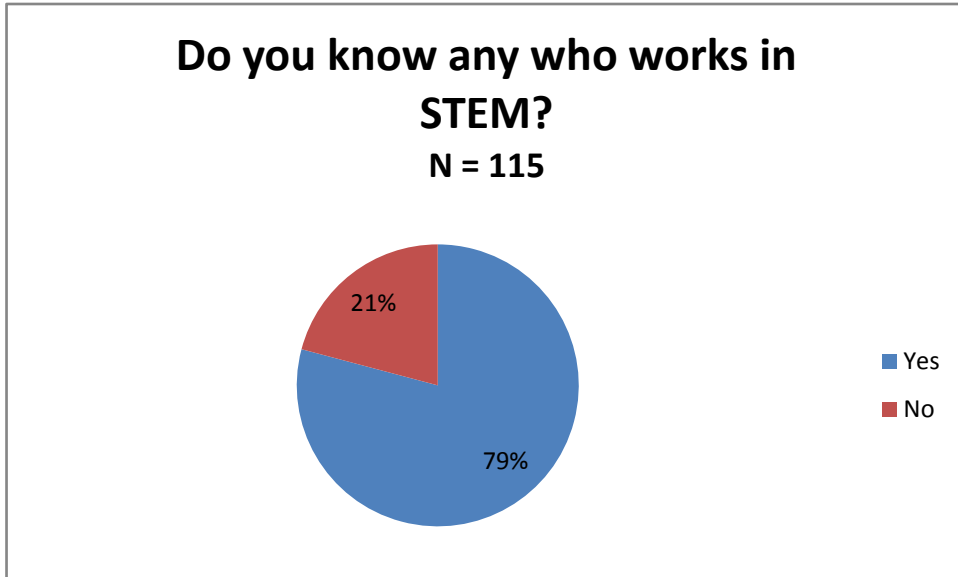


Figure B14. Responses to Survey Question 18

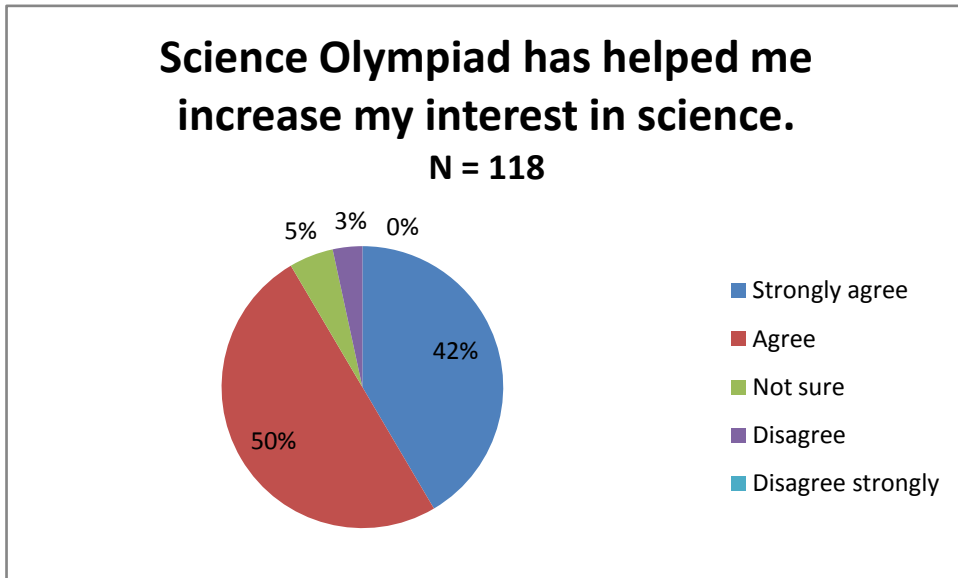


Figure B15. Responses to Survey Question 19

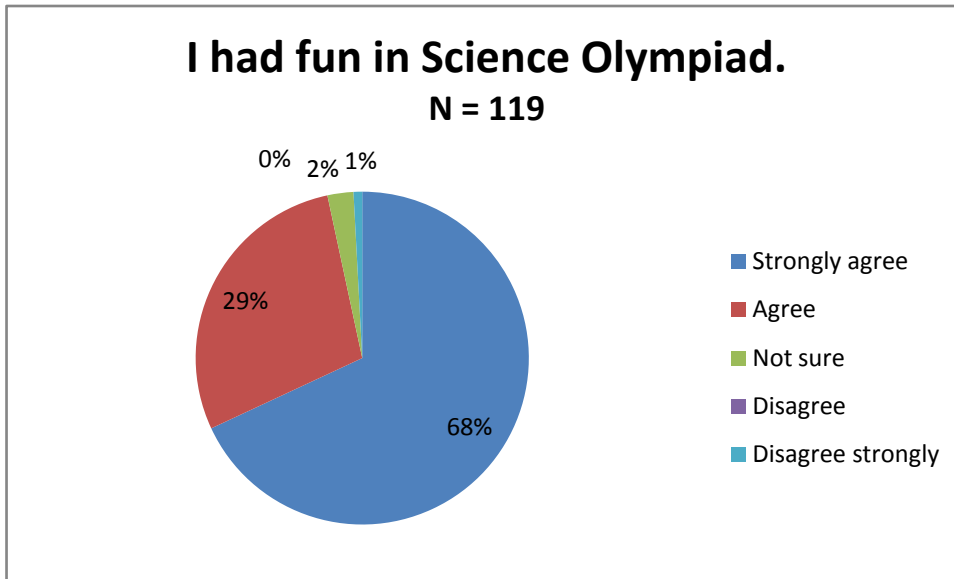


Figure B16. Responses to Survey Question 20

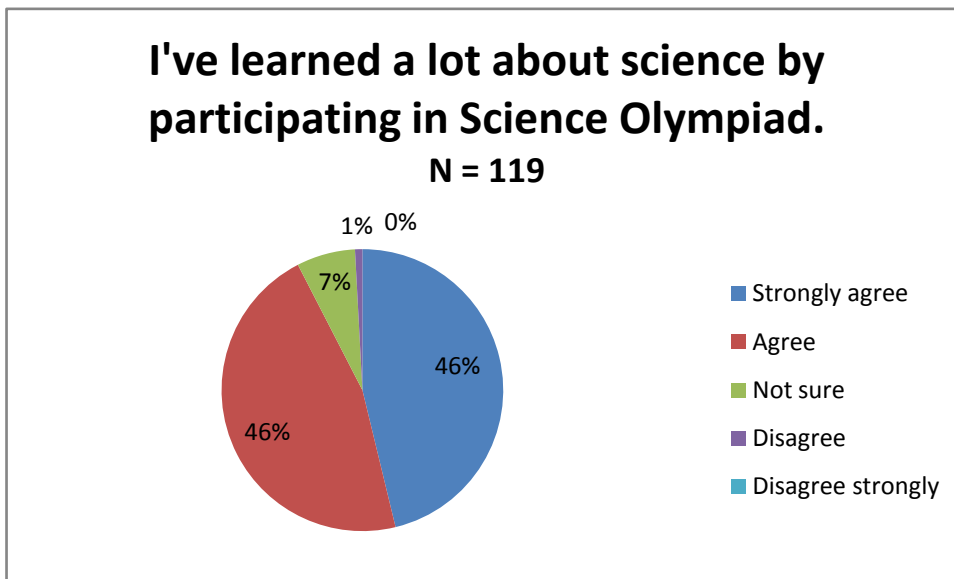


Figure B17. Responses to Survey Question 21

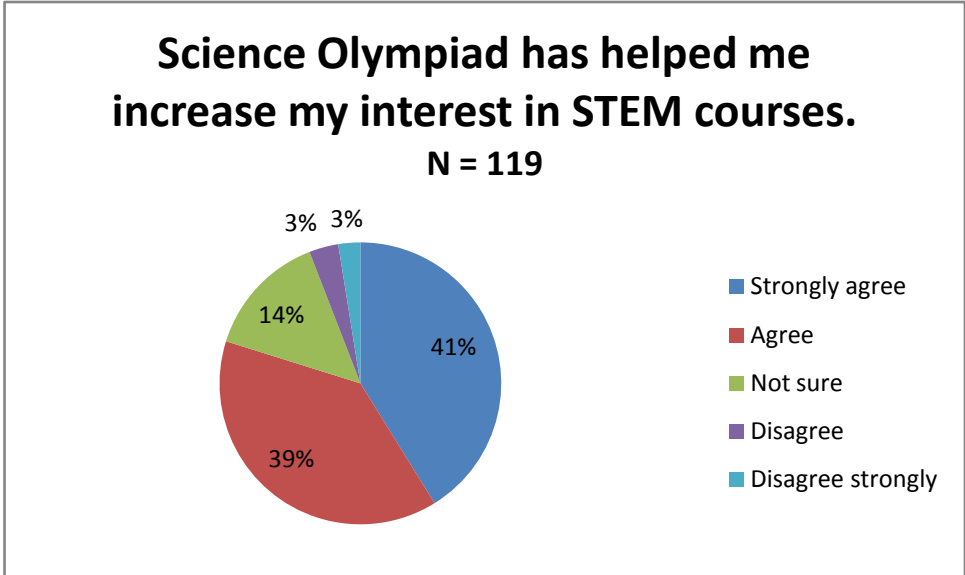


Figure B18. Responses to Survey Question 22

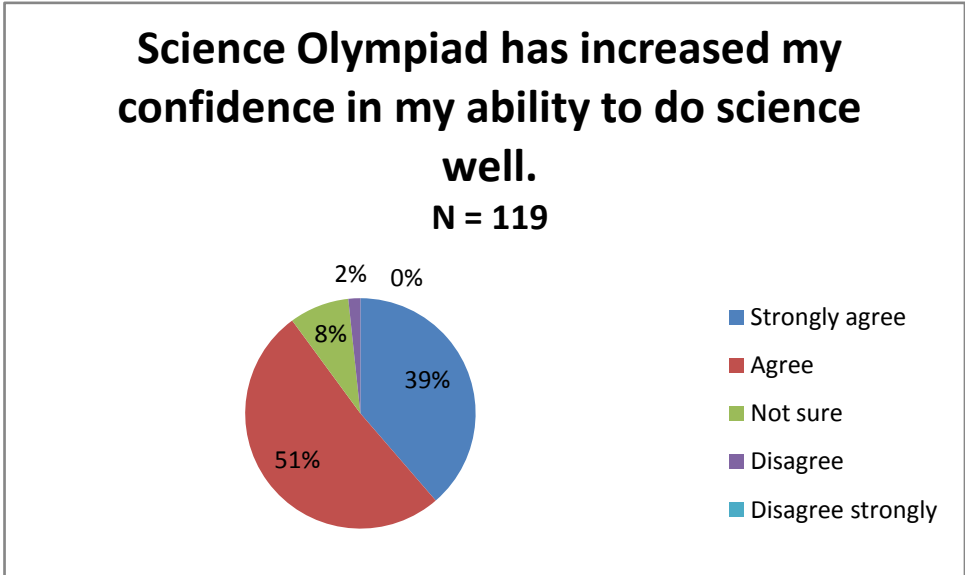


Figure B19. Responses to Survey Question 23

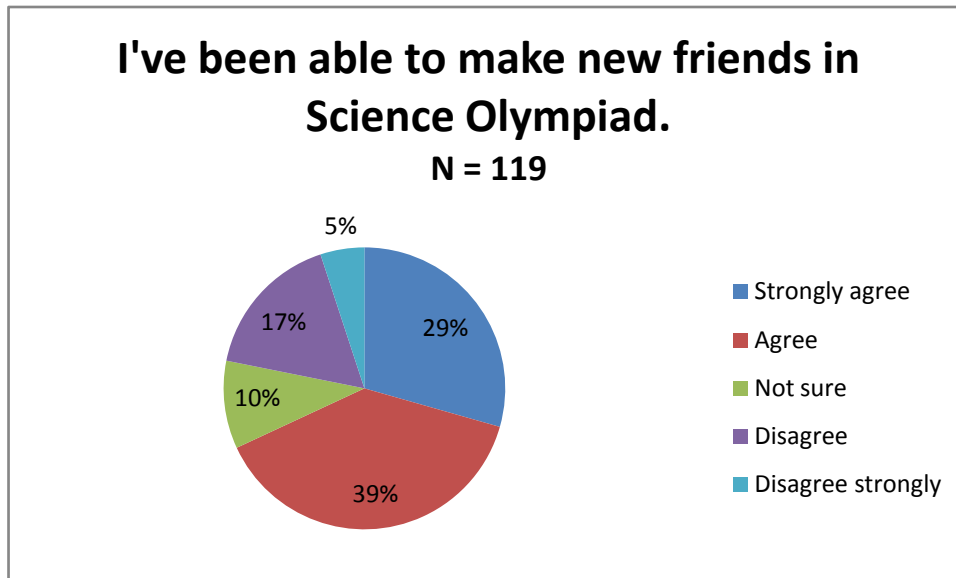
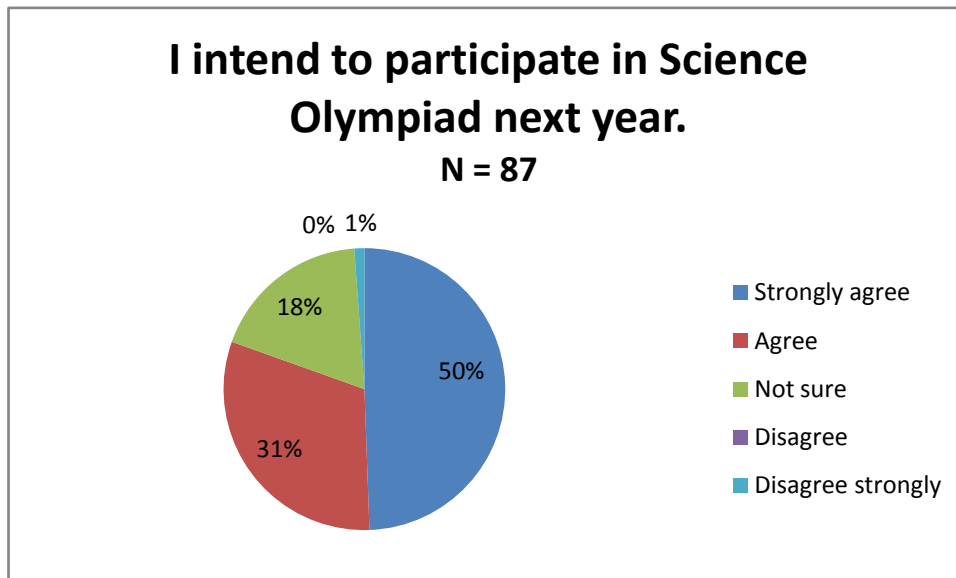


Figure B20. Responses to Survey Question 24



**APPENDIX C**

**RESPONSES TO SCIENCE OLYMPIAD REGIONAL COMPETITION  
PARTICIPANT SURVEY OPEN-ENDED QUESTIONS**



## Appendix C

### Responses to Science Olympiad Regional Competition Participant Survey Open-Ended Questions

**1. List three career fields that you are thinking about pursuing and describe why they interest you.**

- Publisher, because I love to read, and I read fast, and because I love telling people what I think about books.
- Heart surgeon—The heart interests me. #2 Brain surgeon—The brain interests me. #3 Crime scene investigator—crime scene interests me
- Biologist so I can be able to work with animals. #2 Vet so I can save animals
- Aeronautical engineering #2 Special Forces soldier
- Tennis player, #2 Basketball player, #3 Real Estate agent
- A chef because I love to cook; #2 a pediatrician because I love to help people and children; #3 Police because I would like to serve my city.
- Comedian on a TV show. I am very funny. #2 Baseball player. It is my favorite sport. #3 Business man. I like money.
- Medicine; #2 firefighter; #3 construction
- CIA; #2 Therapy; #3 Police
- Scientist: #3 As of being in Science Olympiad, I am very interested in science. Science has helped the world so much, and I would like to give help to the world using science and make life easier with my school. #2 Mathematician: I have a huge interest in math. I always have fun in math class because I like learning new things. Also, as I like the most, Math is the language of science. #1 Marine Biologist: I've had an interest in Marine Biology ever since 1<sup>st</sup> grade. It's just fascinating to me and gives me
- Dentist; #2 Optometrist; #3 detective
- Pediatrician—I like helping babies; #2 investigator—I like investigating; #3 President—I want to rule the country
- A doctor because I love to do surgery; #2 A nurse because I love taking care people giving them
- Air force to get around and explore; #2 Fire fighter to help others; #3 Mechanic
- Lawyer because I like to argue, so why not get paid for it; #2 Teacher I want to share my knowledge with kids, #3 Dancer because I want to see how good I am
- Health Science; #2 It's about time
- Forensics because I like [to] solve crime; #2 Police officer because I like to help people out when they are in need of justice; #3 Firefighter because I like save people
- Law—Investigator, I always wanted to find out information and time myself on how well I've done; #2 Business: I always liked to own my own business because I would like for other people to show their great work of the information I gave them; #3 Real estate: I enjoy real estate because I [would] like to help people move into their dream

## Science Olympiad Urban Science Initiative Evaluation

home they always dreamed of and wanted. My aunt is also a real estate agent and gives me advice.

- Computer Engineering because I like to work with computer[s] and want a career doing something I like today; #2 Graphic design I have been; #3 Computer science
- Forensic science because I love to solve mysteries, and I love the different ways to determine; #2 computer tech because I love computer[s] and took a preview course or computer tech through the Dell program; #3 graphic design because I can draw, and I would like to have a different experience.
- Law because I'm very interested in helping people. #2 Computer technology because I feel that I very good at using computers. #3 Engineering because I have so many ideas.
- Actress because I love to act every day, and it is something I enjoy very much. #2 singer—I love to sing; I am in the Chicago Children's choir; and no matter what I will always sing. #3 Scientist—I think science is my strong suit. And I find chemicals interesting in their reactions and why.
- I'm thinking about pursuing a career in animal care and watch. I watch Animal Cops everyday and see all of those helpless cats, dogs, etc. I feel that it's our responsibility to care for any animal in need.
- I would like to pursue a career in criminal justice. After seeing deaths of family members, I wondered why and how and who would do this to someone so innocent. I want to find the answer now.
- CEO—I love making money and I always wanted to run a big company
- Writing—Because I enjoy this, and I'm good at it.
- Acting—I've been acting in school plays since I was a little kid, and this is also something I'm good at.
- 1) My first career I WANT to pursue is a musician (not a singer or a rapper). One of those musicians who plays music with the instruments. This is because I [have loved] music ever since I was two. I enjoy playing the trombone and trumpet.  
2) My second career I would want to pursue is to be a zoologist or biologist. I love watching Animal Planet and learning different things about how their body functions or their behavior. It amazes me a lot!!!  
3) My third career is to [be] a writer because I like to write poems and see them into my computer. I write poems for my family and their reunions. Also, I am one of the winners for Young Authors (classroom winner). Many of my family members say I have talent.
- I would like to be a veterinarian because I love animals and want to help them.
- I would somewhat like to become a lawyer because I love to talk and disagree and also argue a case.
- I would somewhat like to become a police officer because I want to help make the world a better place.
- I would like to be a pediatrician because I enjoyed learning how the human body works, and I like younger children.
- I want to become a lawyer because I feel bad when innocent people go to jail.
- My last choice of a career would be to be a teacher because I like to be in charge and teach and influence people.

- Earth Scientist: I would like to be an earth scientist because there are more things about the earth that we don't know of; Marine Biologist: Being a marine biologist will make me discover about fish and study their habitats and how to make it safer
- Ballet because dancing is awesome; Scientist—I want to discover new things; Crafting—nice way to be creative on display
- Neurosurgeon, NFL player, teacher
- One of my careers that I'd like to pursue is becoming a pilot. I'd like this because I've always been fascinated with flying. As a child, I always dreamt of flying like a bird; I would want to be a chemist; I like to observe how actions and reactions occur. I like to see how the reaction can do amazing things; overall, I'd like to be a scientist. I like to learn new things that I sometimes ponder about. I like to know what makes the universe the universe.

## 2. How did you learn about Science Olympiad?

- My Science teacher started a club for it at my school
- Mr. Taff
- Through our great science teacher
- My science teacher
- My science teacher
- By our teacher, Mr. Taft
- My sisters, science teachers
- My science teacher told me about the team, and I agreed to participate.
- My science teacher
- I saw a poster in my school hallway which told me about the Olympiad.
- My school teacher (coach)
- My teacher brought it up.
- Umm well don't know... I love science.
- My teacher
- Science club teacher
- My teacher
- I learned about SO from my physics teacher.
- I learned about it from my favorite Physics teacher, Mr. Vessales...also my old class Chemistry teacher Ms. Terry
- I learned through my teacher.
- When I was entered into my school science fair
- My coach
- I learned about Science Olympiad by my science teacher.
- When my homeroom teacher called my classmates and me into the vice principal's office, she showed us videos of programs and events they attend.
- The teachers chose us, and they told us about it.
- My school introduced the program to us.
- I learned about Science Olympiad because in school, a voice from the intercom called my name and a few others to go to a classroom for Science Olympiad.
- I decided to participate because I thought it would be an excellent experience for me.

## Science Olympiad Urban Science Initiative Evaluation

- My teacher showed me a video of last year's competition and told us all about it.
- My teacher told us what it was at our first meeting.
- From school
- School

### 3. Why did you decide to participate in Science Olympiad?

- It sounded fun, and I wanted science credit.
- It sounded like fun.
- I am interested in science.
- I thought the events sounded cool.
- Because it sounded really fun
- Because it sounds fun
- It was a nice after-school program.
- I thought it would be fun and something new to do.
- For extra credit and for the experience
- I have a large interest in science and thought it would be fun to compete against other schools with my classmates.
- I love science.
- It sounded like fun.
- It's cool; it's fun.
- To do something on a Saturday
- I wanted to try something new.
- To learn more things
- I decided to participate; I love to challenge myself and meet new people. Also, I love science.
- Because I want to make a good and positive impression on my school
- It was a great way to learn new things.
- I wanted to enter into the cell bio section of the competition
- I decided to participate because I thought it would be a fun and interesting challenge
- Because it was fun and interesting.
- I thought it would be fun and teach me more about Science what I'll learn in the future.
- I wanted to participate in a school competition.
- I was selected by my science teacher.
- I decided to participate because I like Science A LOT! Also, I believed I could learn more about this subject that I like.
- I think this experience was fun and exciting but stressful at times.
- I thought Science Olympiad would be fun and would help me to improve science.
- I wanted to be involved because it's a once-in-a-lifetime experience and most people don't get to do something like this.
- Because science is interesting

#### 4. Describe your experiences with Science Olympiad.

- I liked Science Olympiad. I had a lot of fun, and I am going to do it next year too.
- It's fun, difficult, and exciting.
- It has been fun yet challenging.
- Has been really fun
- I has been really fun, and I plan on doing this next year
- It's fun. Yes, because you're waiting for a long time.
- I love the airplane.
- It was fun, and I enjoyed building my catapult.
- It was really fun.
- My experience with Science Olympiad has been very exciting. Even though sometimes I was upset that I didn't study something well enough, I feel that Science Olympiad was a great experience.
- It was tons of fun, completely successful. I love[d it].
- This has been fun, and [although] it has been a little stressful waking up early, I like SO.
- It was fun but hard... I just need to study more.
- It was fun.
- It's been fun. I've learned some new thing[s].
- The SO has been fun and stressful because it [took] time...
- It was very fun, and people were showing positive attitudes. I could say that it made me become a better and positive person.
- It has been fun, but very stressful as well.
- It was hard, but I did have fun.
- It's been interesting, but at the same time, it's been fun.
- I loved it! I loved everything.

#### 29. Do you have any recommendations for SO?

- Yes
- No, thanks. It was a load of fun.
- I think that SO would be more fun if all schools (not just high schools) were able to compete in every event.
- Yes, it is very fun.
- You should be able to pick the team you want to be on—even in high school, you can pick an elementary school.
- No
- No
- No, their competitions are good.
- Much funner
- No
- No
- Keep up the good work

## Science Olympiad Urban Science Initiative Evaluation

- Keep up the good work
- No, I think that this [is] a good competition, and everything is just fine.
- Have fun
- Nope, I loved it!
- At Science Olympiad, it was very stressful but when I come to Pentathlon it was really fun. We got to jump rope, play soccer, hula-hula, and shoot free throws.
- It has been fun because I [get] time to spend with people in my school. I also feel that Science Olympiad is a good program because I learned different things.
- Science Olympiad was very fun and informational, and I made new friends.
- Science Olympiad was fun and exciting.
- It's been stressful; school is hard enough.
- Yes (fun), No (stressful), Gooooood and happy
- Nope, I loved it!

**APPENDIX D**

**DISAGGREGATED RESPONSES TO SCIENCE OLYMPIAD  
REGIONAL COMPETITION PARTICIPANT SURVEY**



## Appendix D

### Disaggregated Responses to Science Olympiad Regional Competition Participant Survey

Figure D1. Responses to Survey Question 5, Disaggregated by Race/Ethnicity

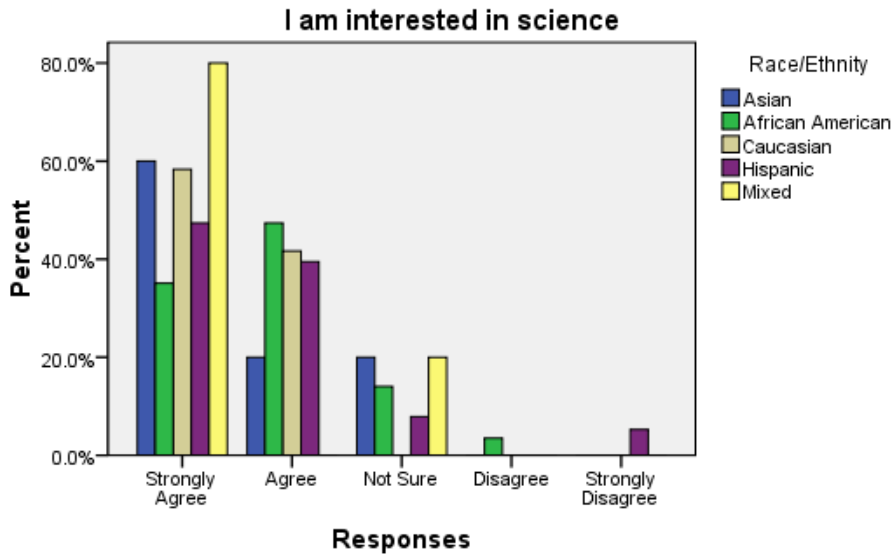


Figure D2. Responses to Survey Question 5, Disaggregated by Gender

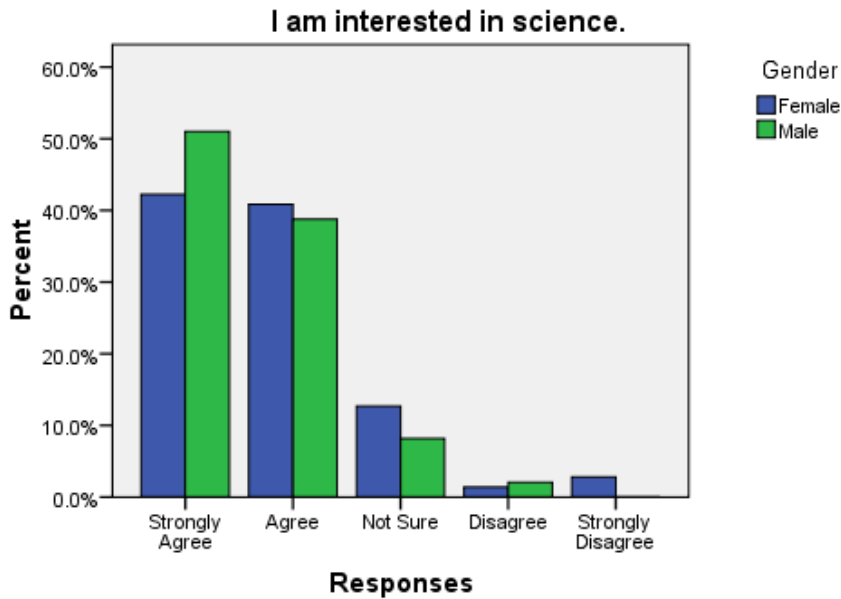


Figure D3. Responses to Survey Question 6, Disaggregated by Race/Ethnicity

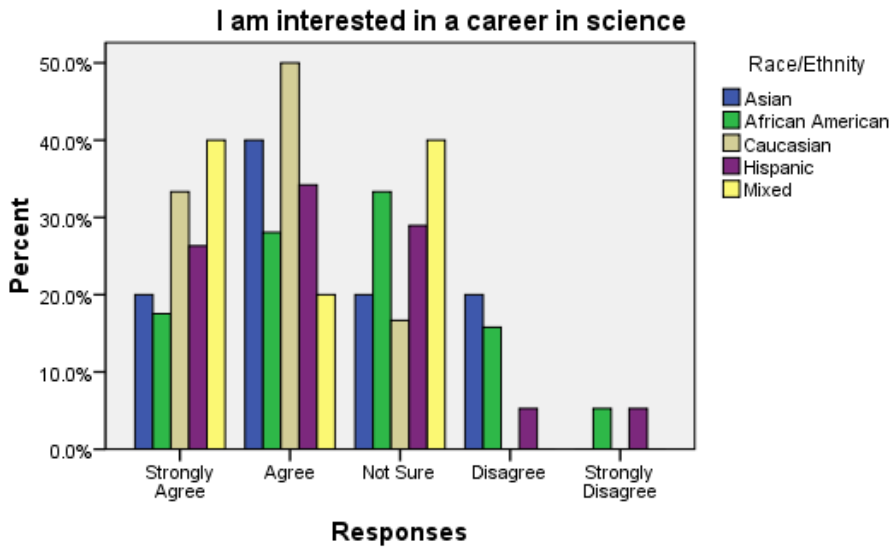
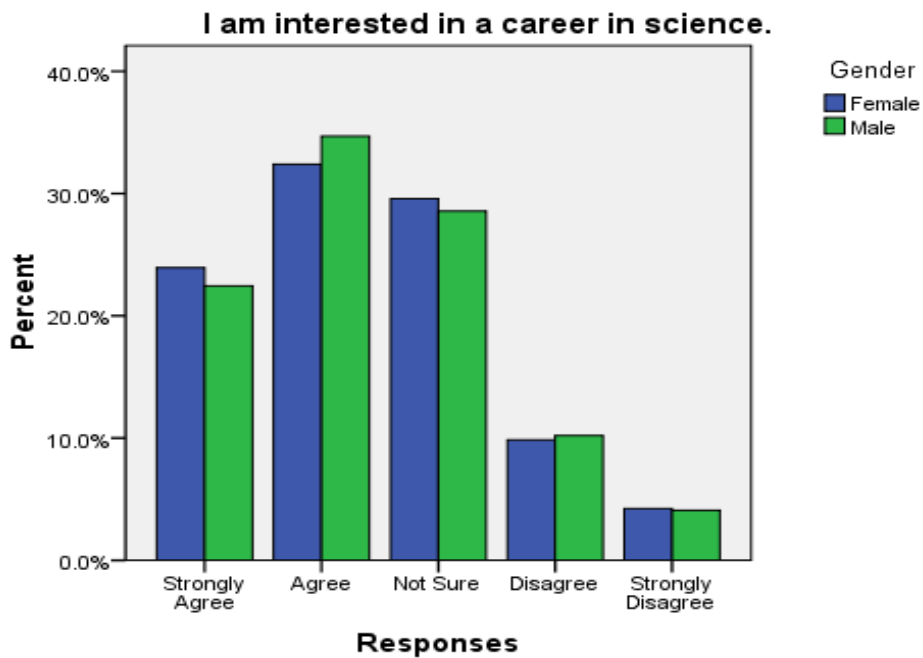
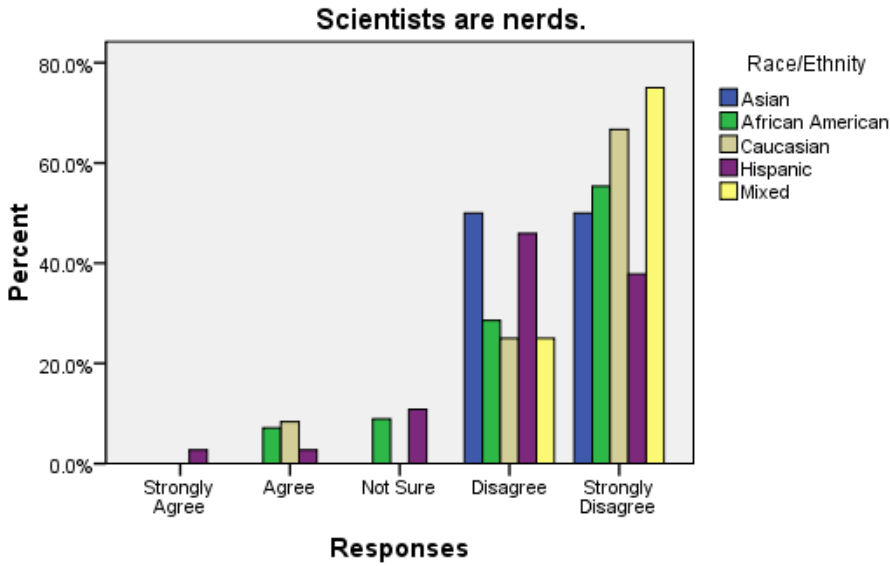


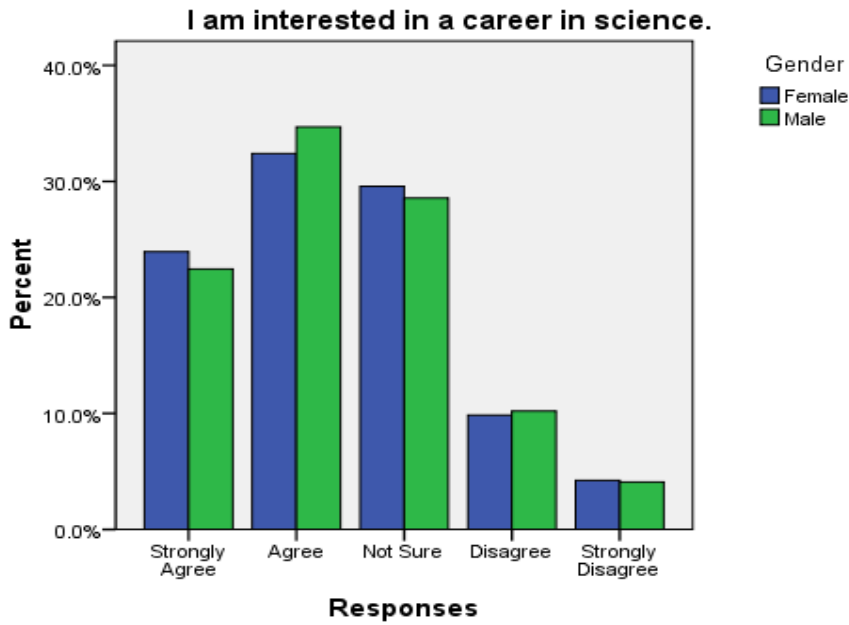
Figure D4. Responses to Survey Question 6, Disaggregated by Gender



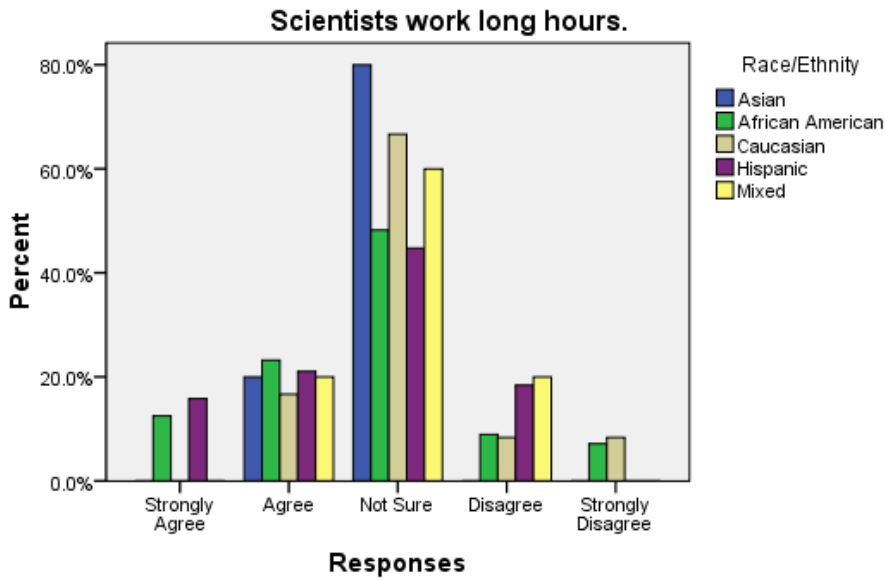
**Figure D5. Responses to Survey Question 7, Disaggregated by Race/Ethnicity**



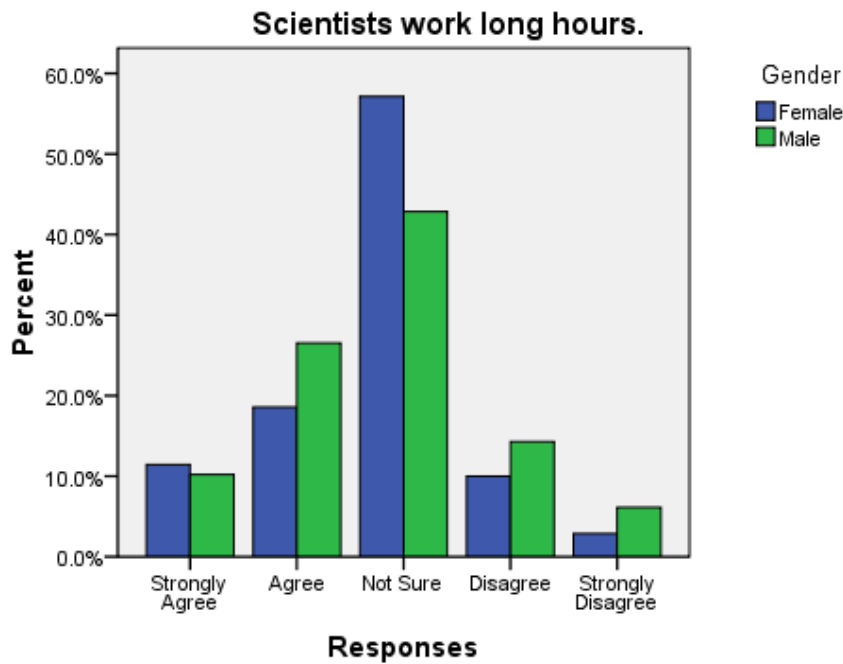
**Figure D6. Responses to Survey Question 7, Disaggregated by Gender**



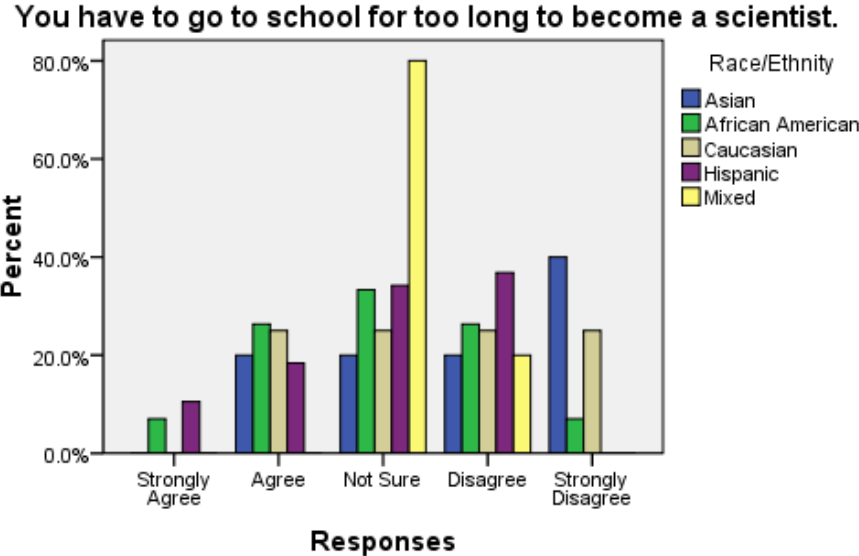
**Figure D7. Responses to Survey Question 8, Disaggregated by Race/Ethnicity**



**Figure D8. Responses to Survey Question 8, Disaggregated by Gender**



**Figure D9. Responses to Survey Question 9, Disaggregated by Race/Ethnicity**



**Figure D10. Responses to Survey Question 9, Disaggregated by Gender**

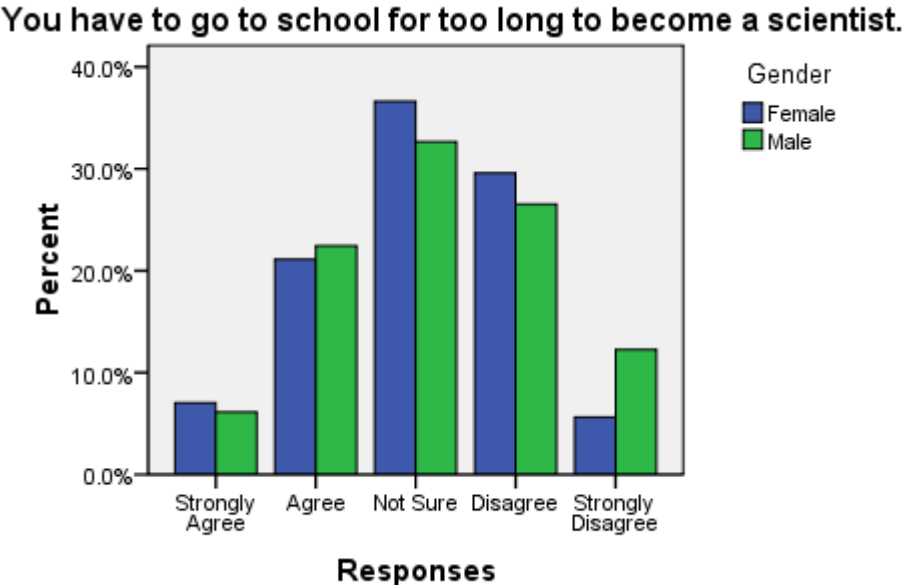


Figure D11. Responses to Survey Question 10, Disaggregated by Race/Ethnicity

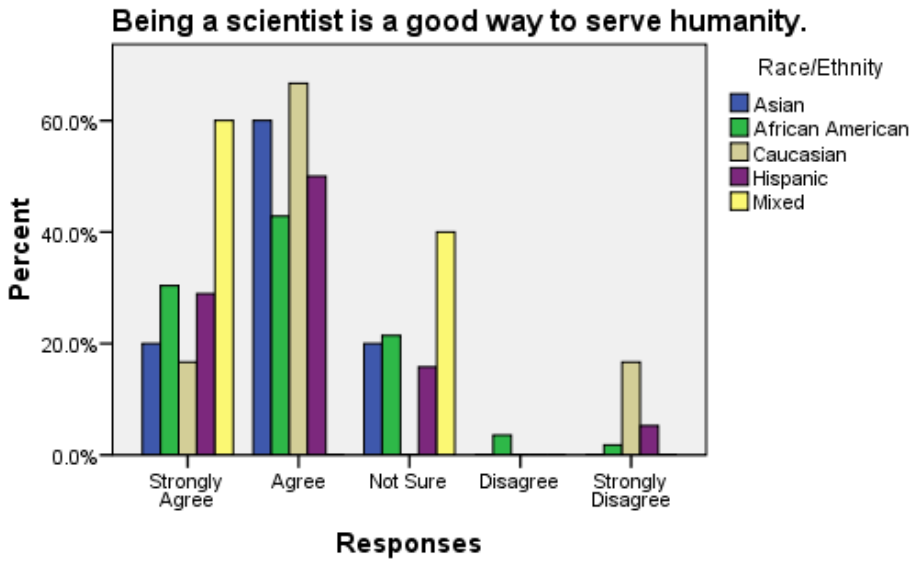
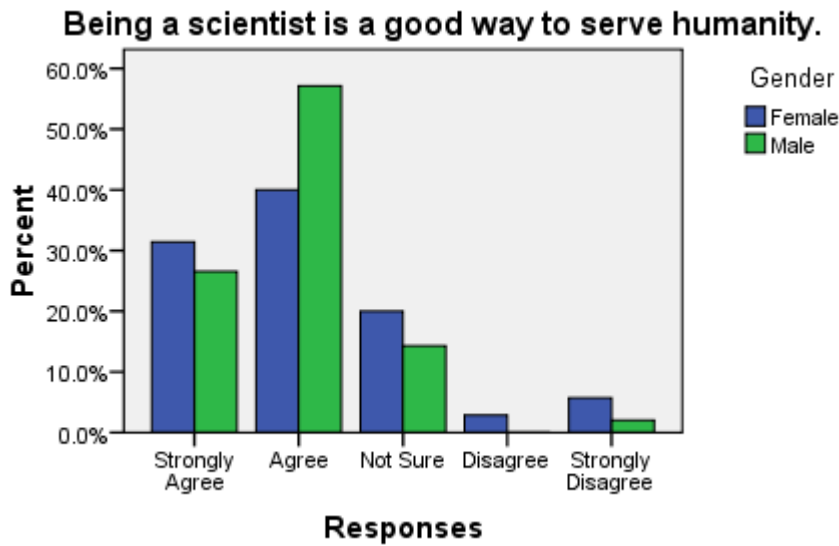
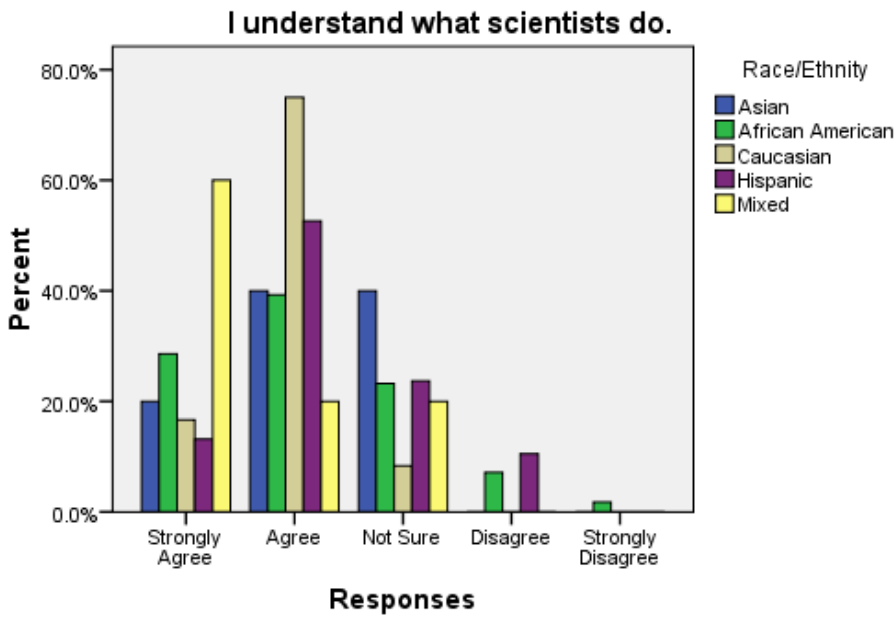


Figure D12. Responses to Survey Question 10, Disaggregated by Gender



**Figure D13. Responses to Survey Question 11, Disaggregated by Race/Ethnicity**



**Figure D14. Responses to Survey Question 11, Disaggregated by Gender**

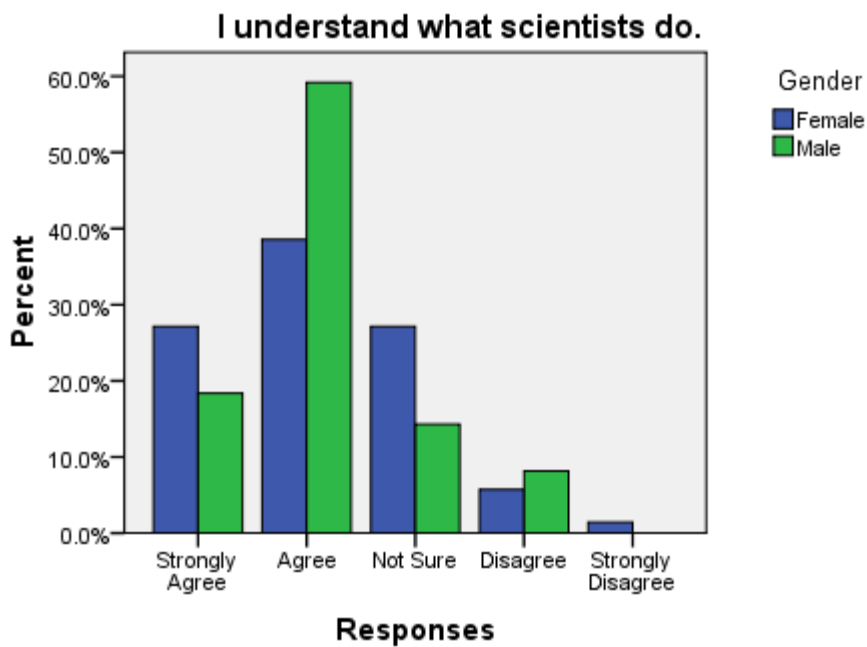


Figure D15. Responses to Survey Question 12, Disaggregated by Race/Ethnicity

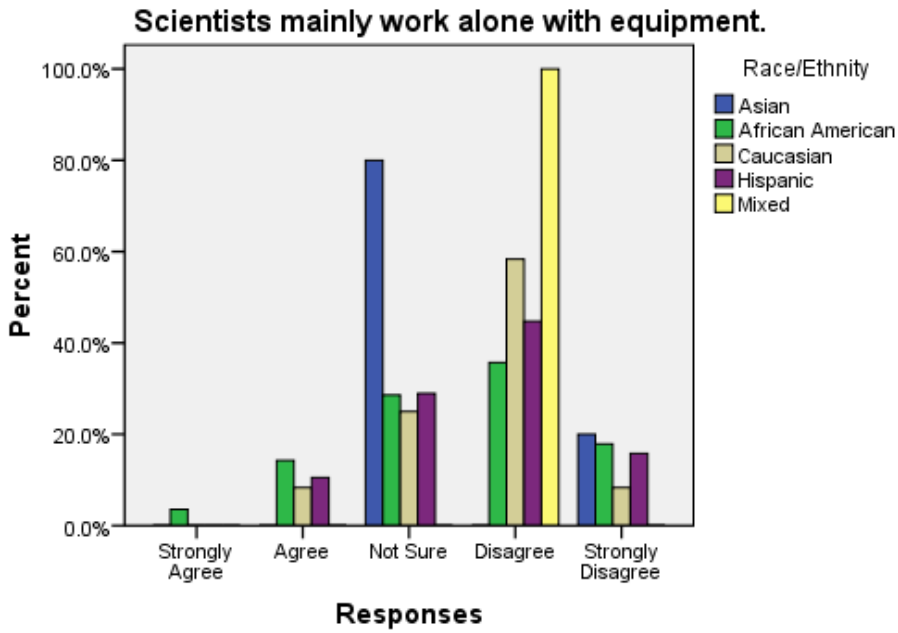


Figure D16. Responses to Survey Question 12, Disaggregated by Gender

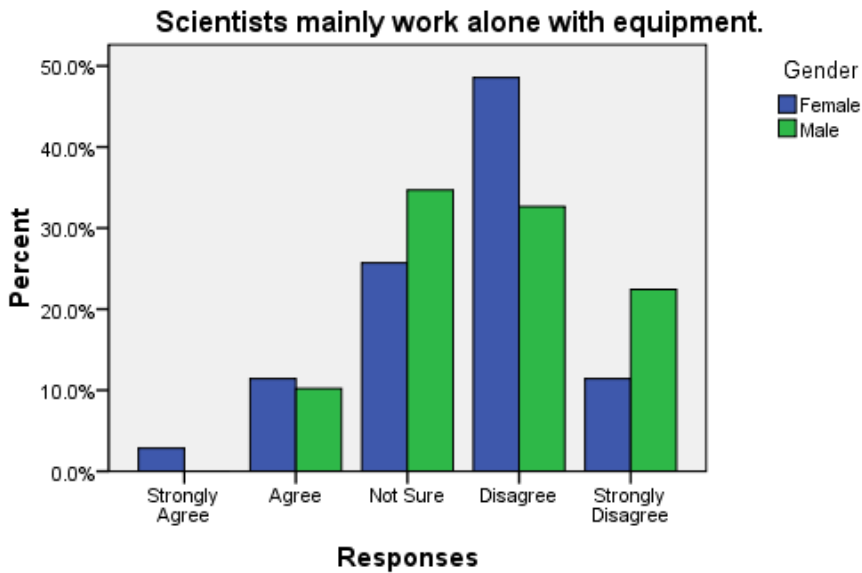


Figure D17. Responses to Survey Question 13, Disaggregated by Race/Ethnicity

Girls who are good in math and/or science are just as popular with boys as other girls are.

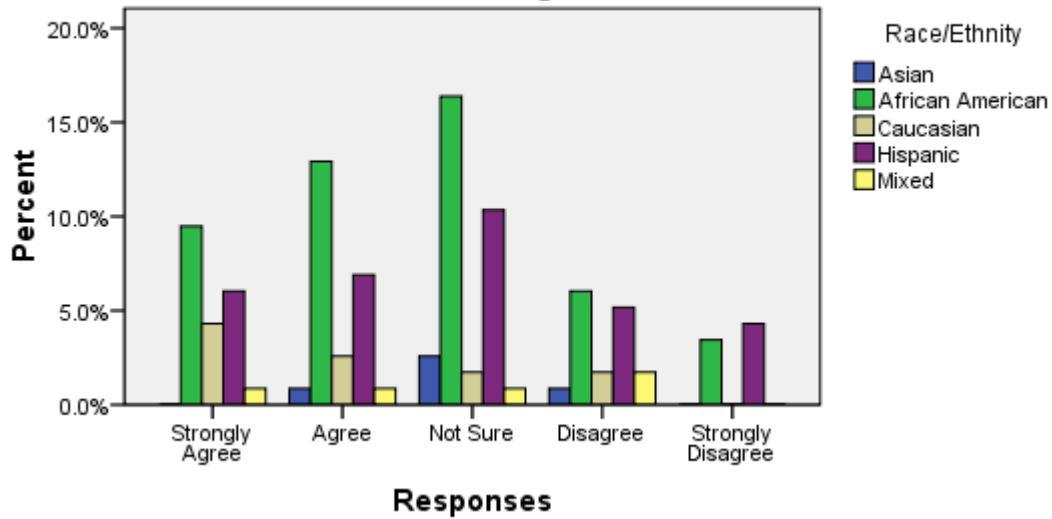


Figure D18. Responses to Survey Question 13, Disaggregated by Gender

Girls good in math and science are popular with boys.

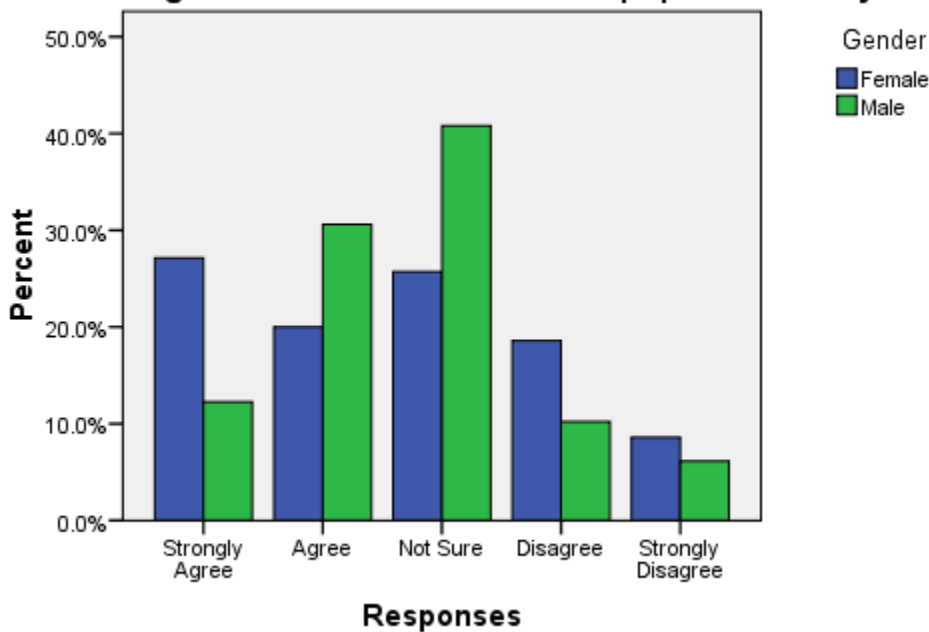


Figure D19. Responses to Survey Question 14, Disaggregated by Race/Ethnicity

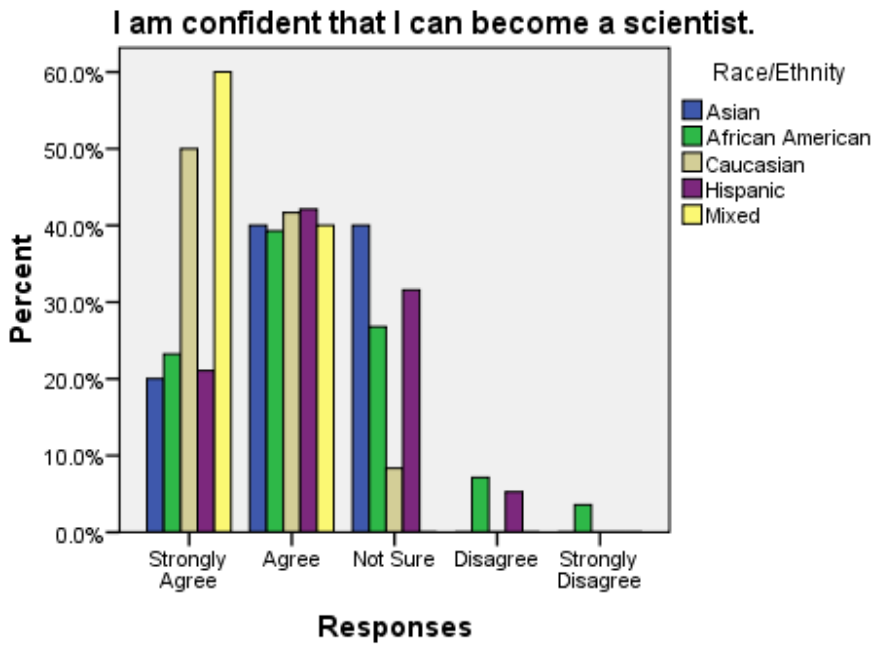


Figure D20. Responses to Survey Question 14, Disaggregated by Gender

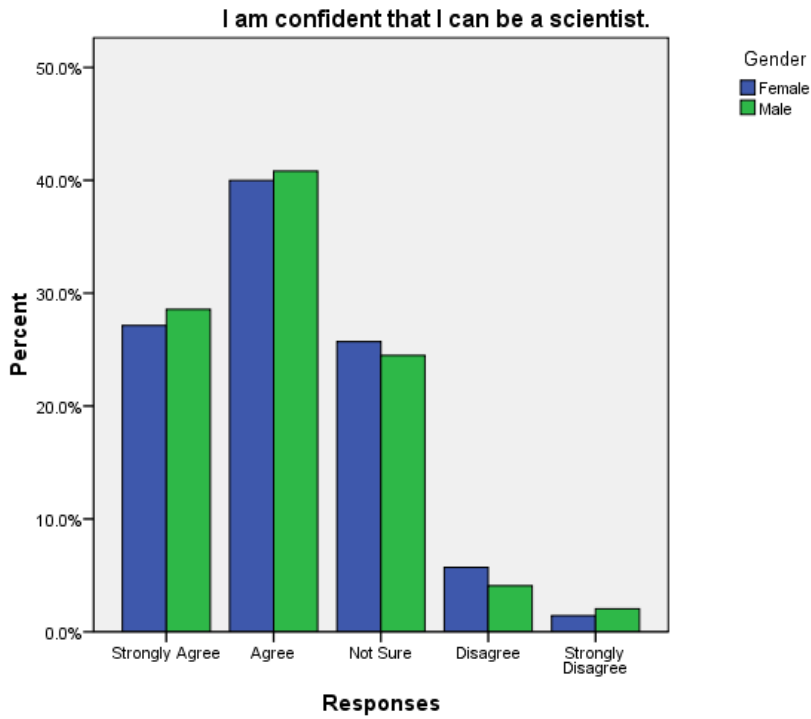


Figure D21. Responses to Survey Question 15, Disaggregated by Race/Ethnicity

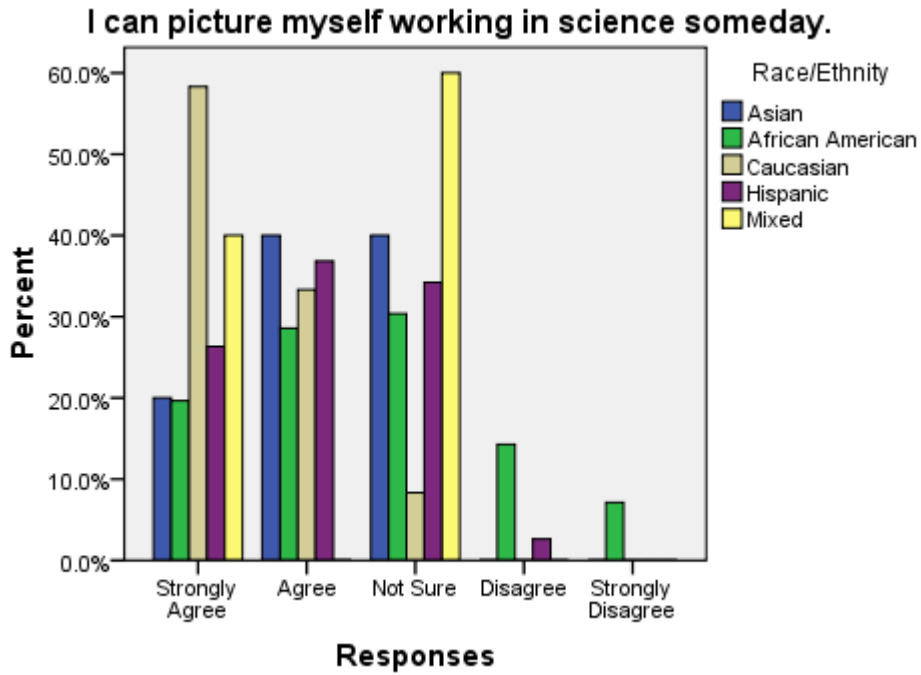


Figure D22. Responses to Survey Question 15, Disaggregated by Gender

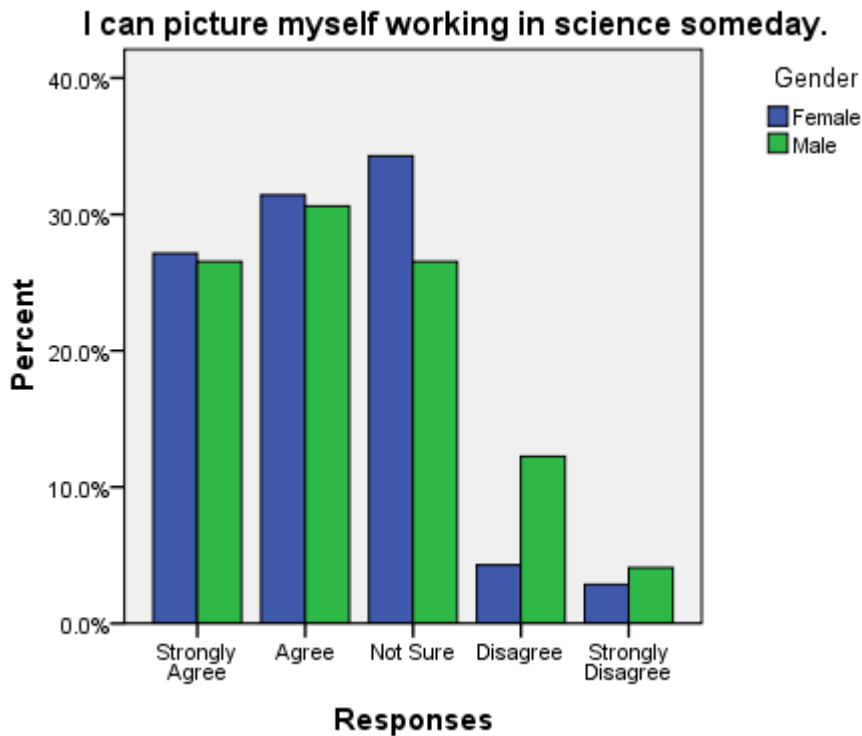


Figure D23. Responses to Survey Question 16, Disaggregated by Race/Ethnicity

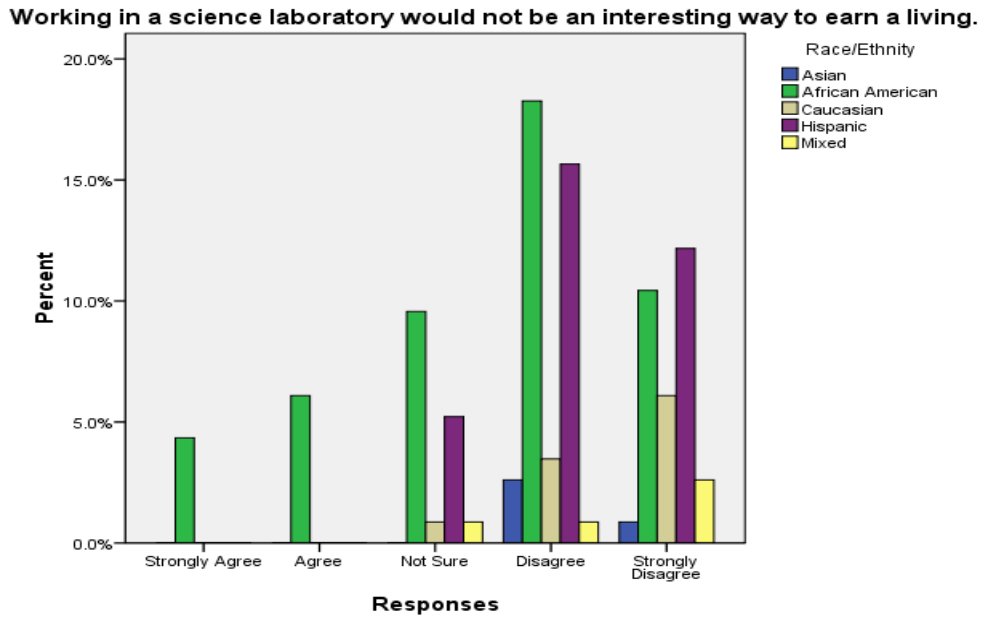
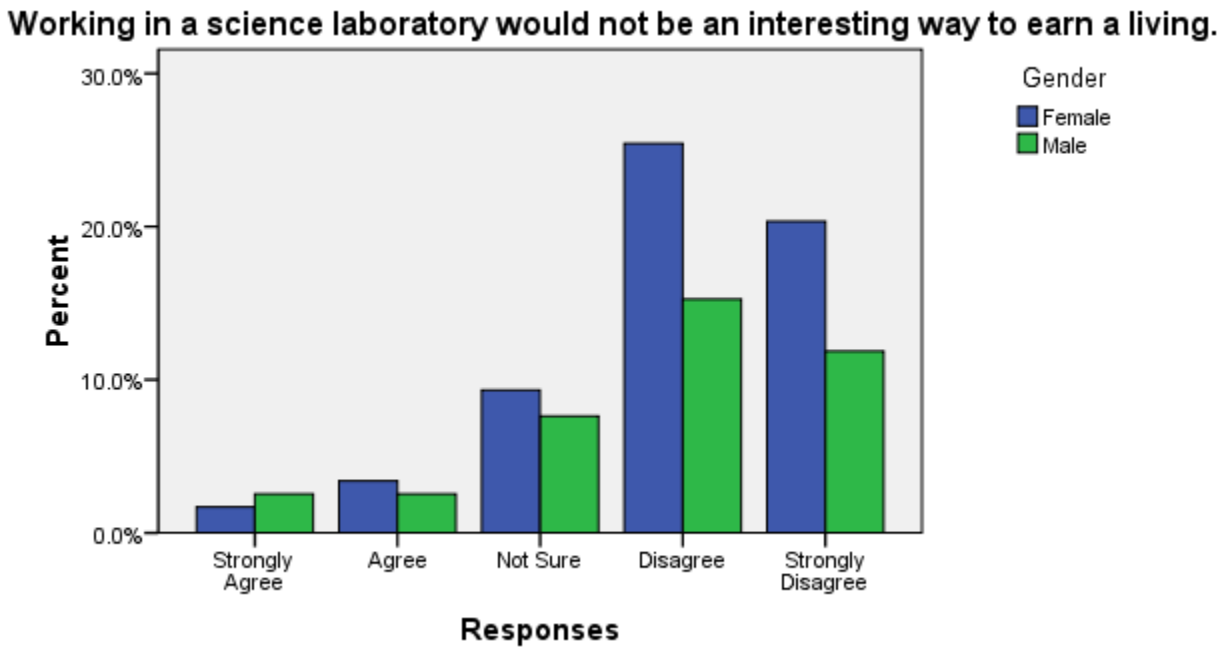
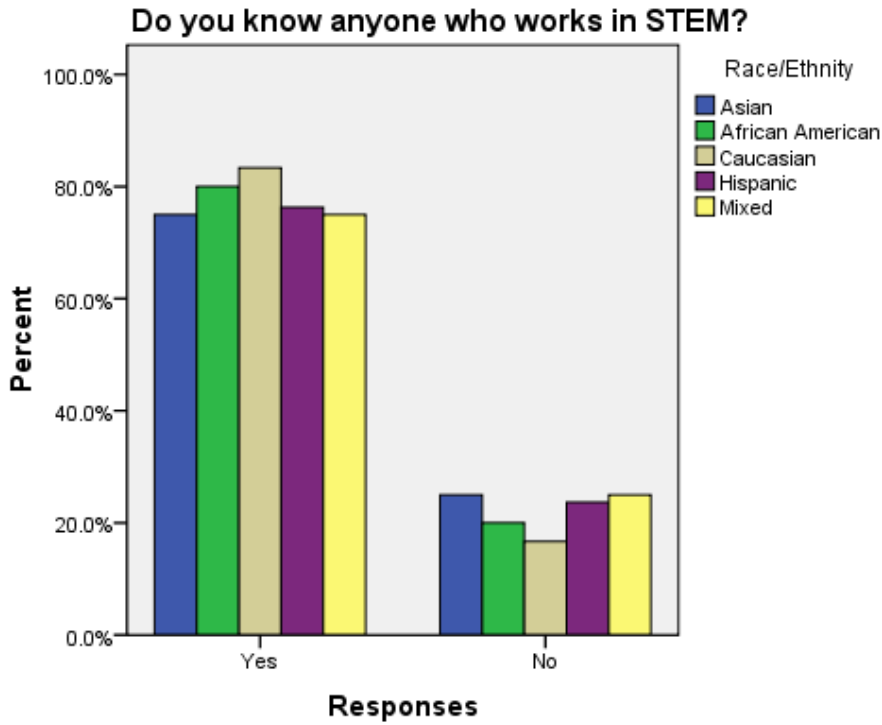


Figure D24. Responses to Survey Question 16, Disaggregated by Gender



**Figure D25. Responses to Survey Question 17, Disaggregated by Race/Ethnicity**



**Figure D26. Responses to Survey Question 17, Disaggregated by Gender**

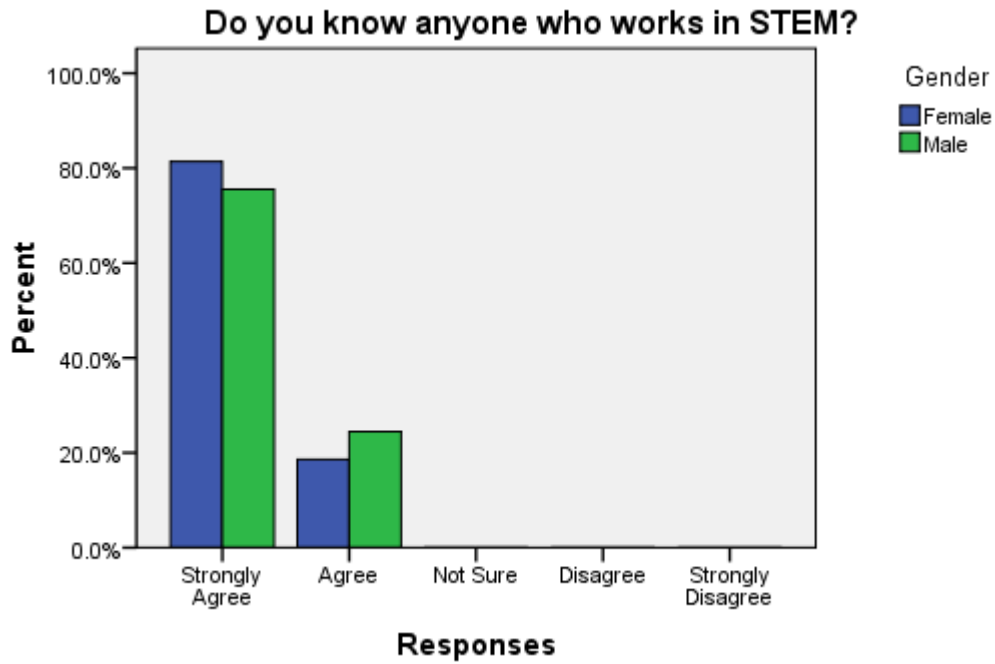


Figure D27. Responses to Survey Question 18, Disaggregated by Race/Ethnicity

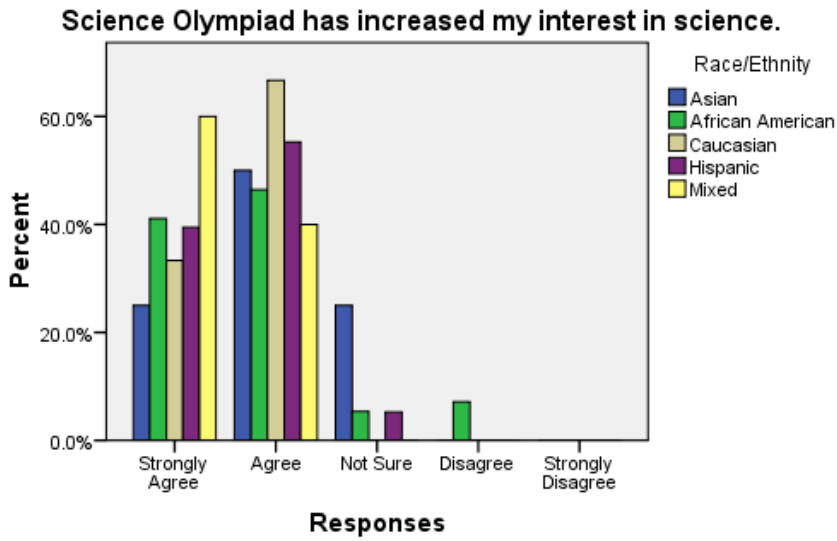


Figure D28. Responses to Survey Question 18, Disaggregated by Gender

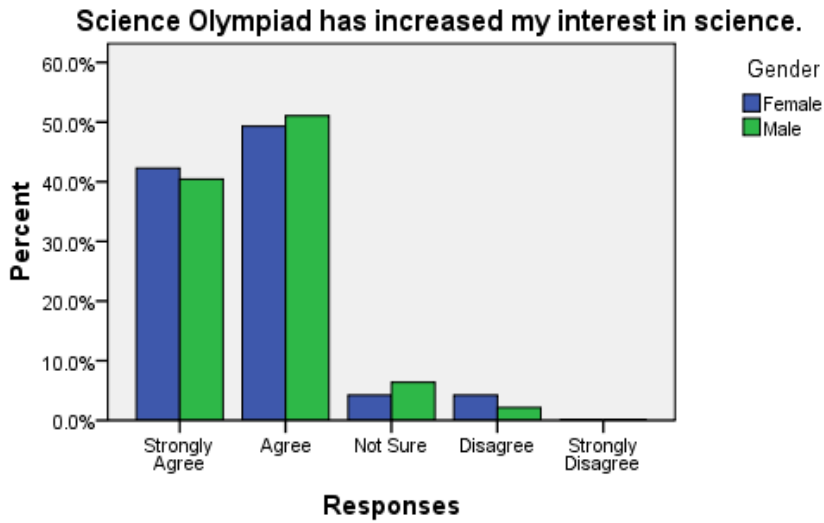


Figure D29. Responses to Survey Question 19, Disaggregated by Race/Ethnicity

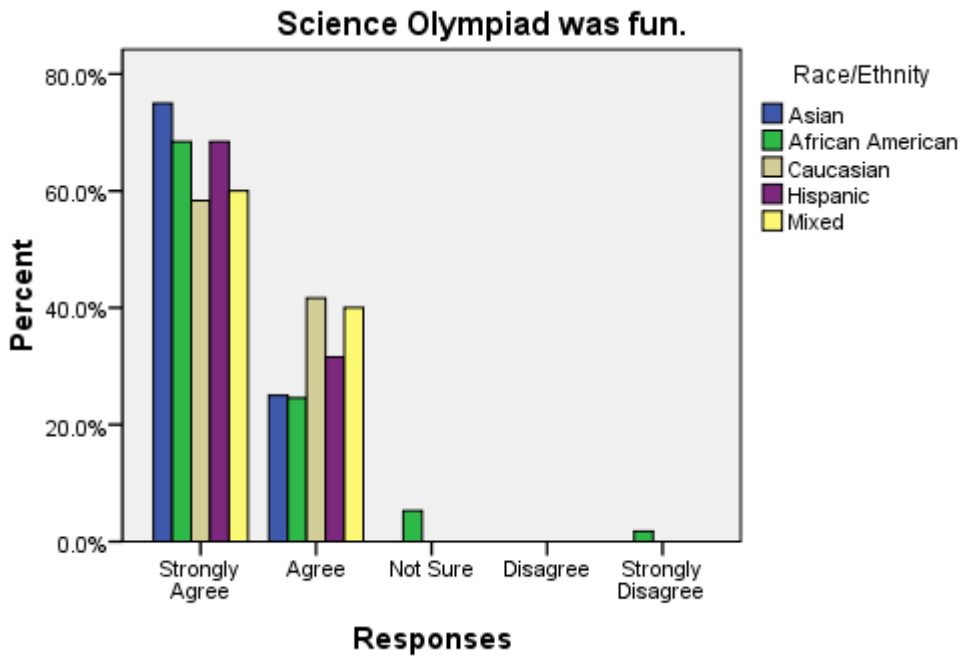


Figure D30. Responses to Survey Question 19, Disaggregated by Gender

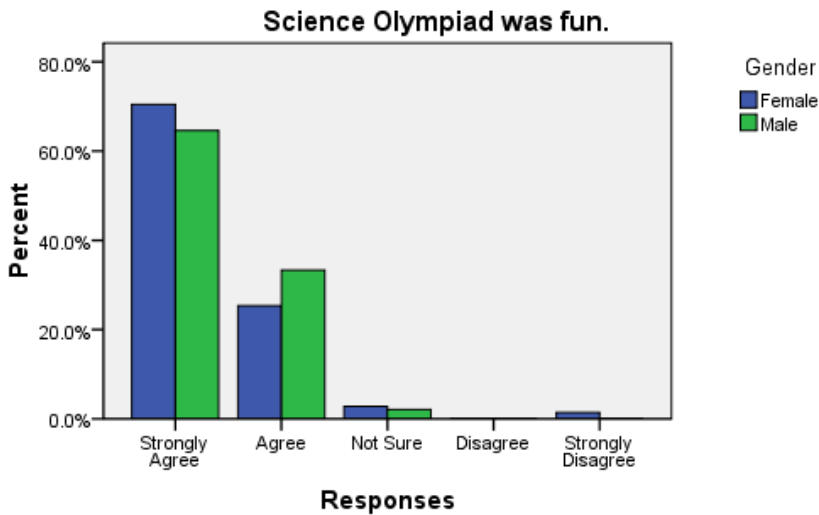


Figure D31. Responses to Survey Question 20, Disaggregated by Race/Ethnicity

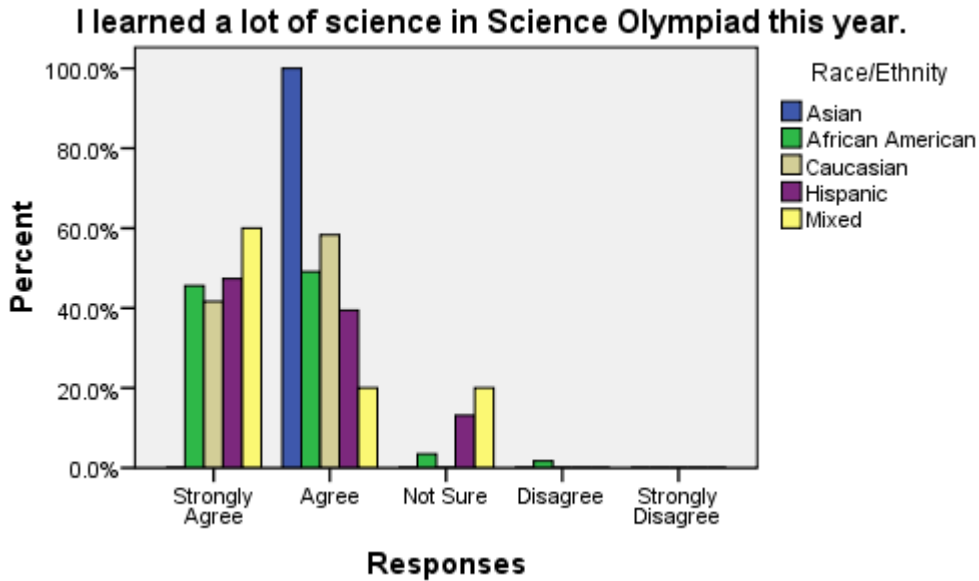
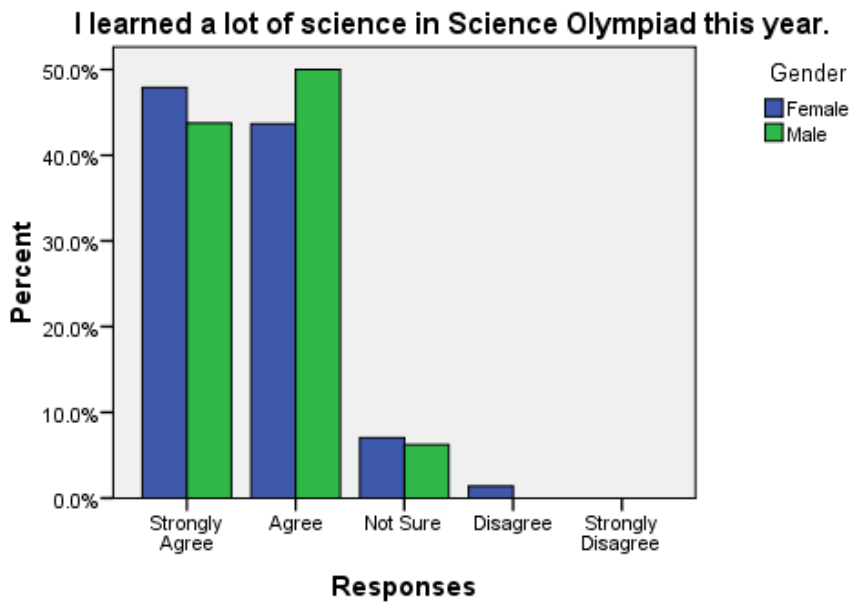
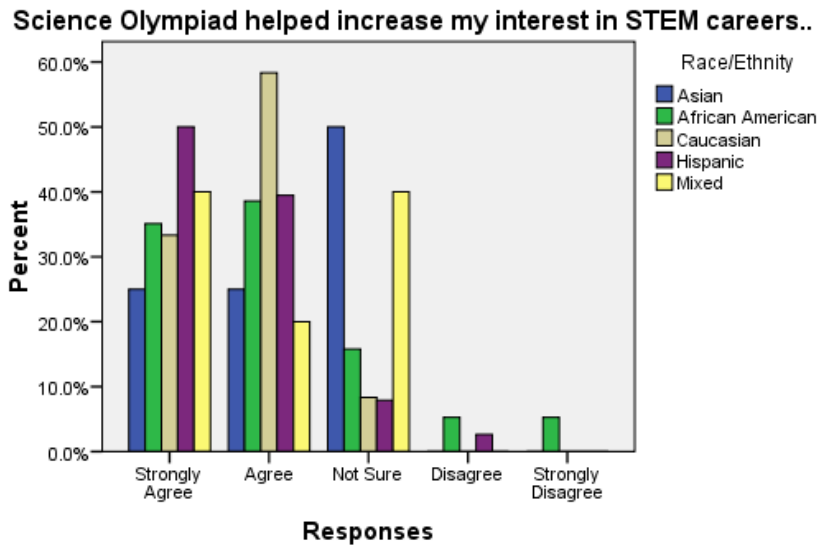


Figure D32. Responses to Survey Question 20, Disaggregated by Gender



**Figure D33. Responses to Survey Question 21, Disaggregated by Race/Ethnicity**



**Figure D34. Responses to Survey Question 21, Disaggregated by Gender**

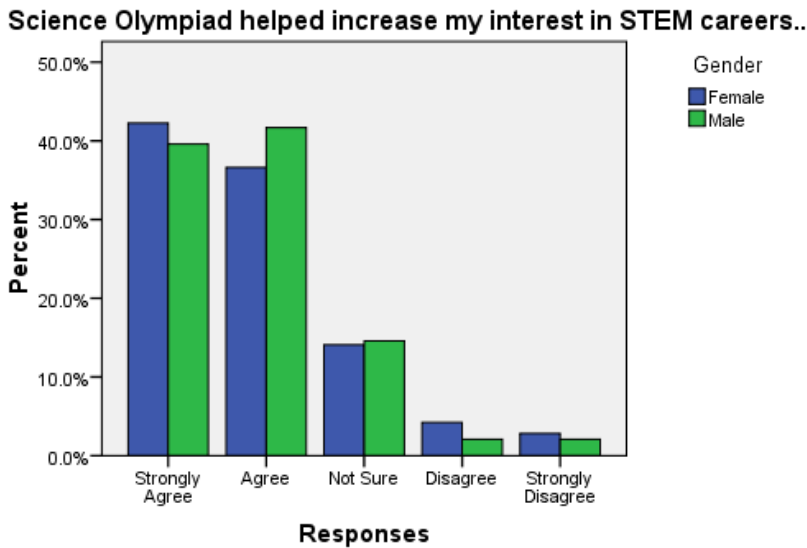


Figure D35. Responses to Survey Question 22, Disaggregated by Race/Ethnicity

Science Olympiad helped increase my confidence to do science well.

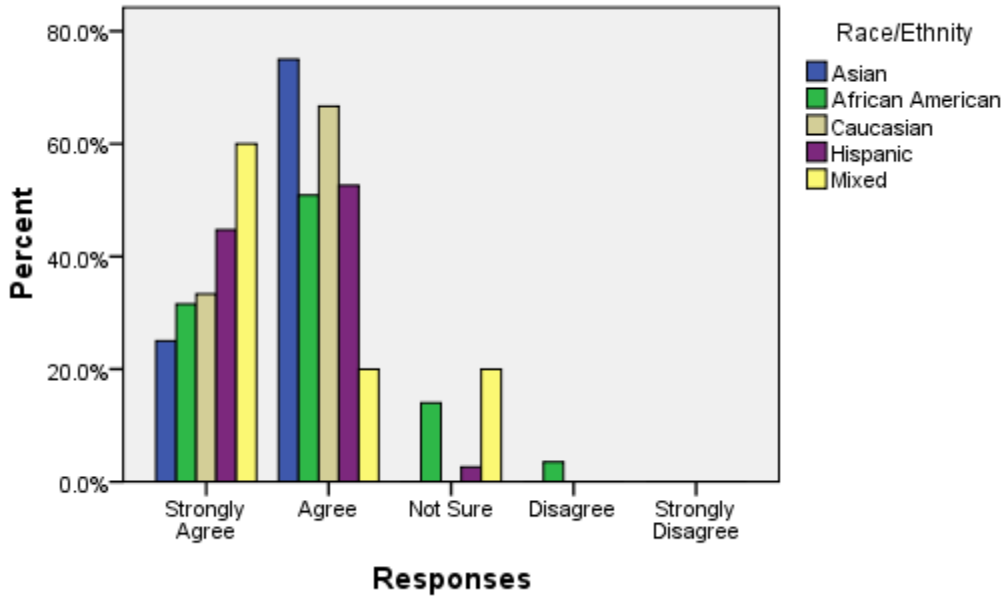
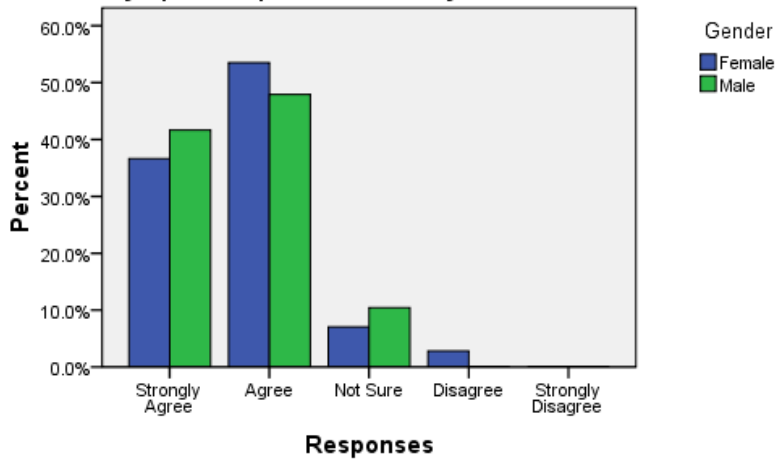
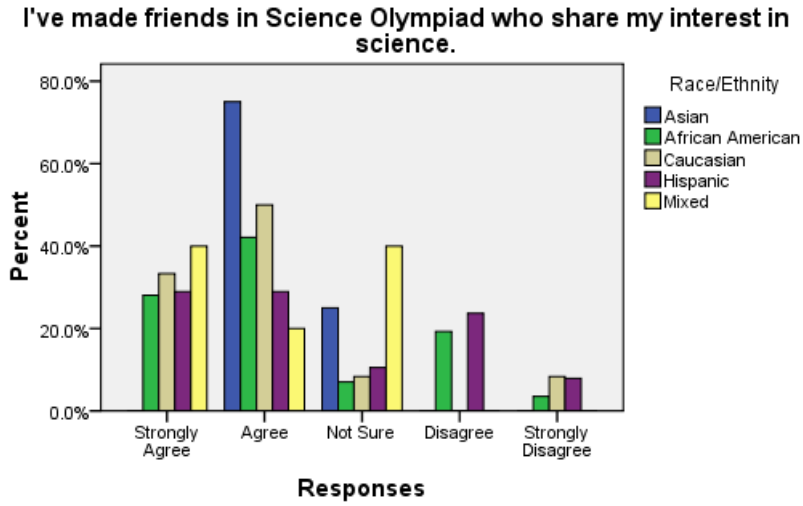


Figure D36. Responses to Survey Question 22, Disaggregated by Gender

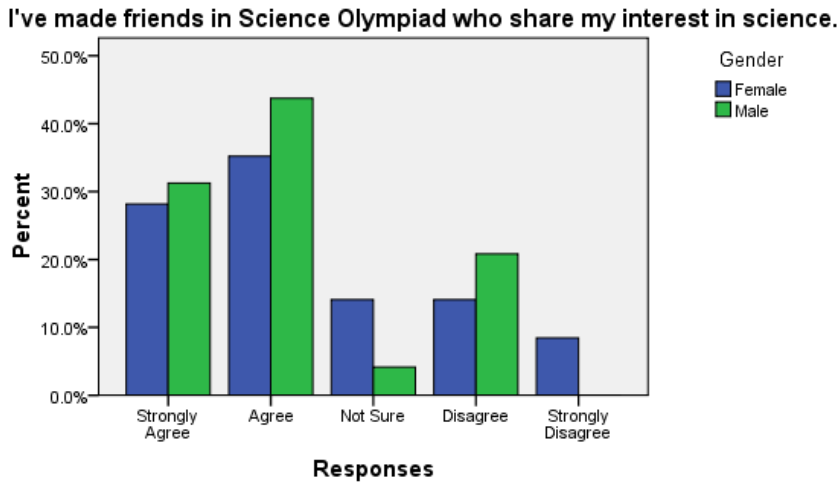
Science Olympiad helped increase my confidence to do science well.



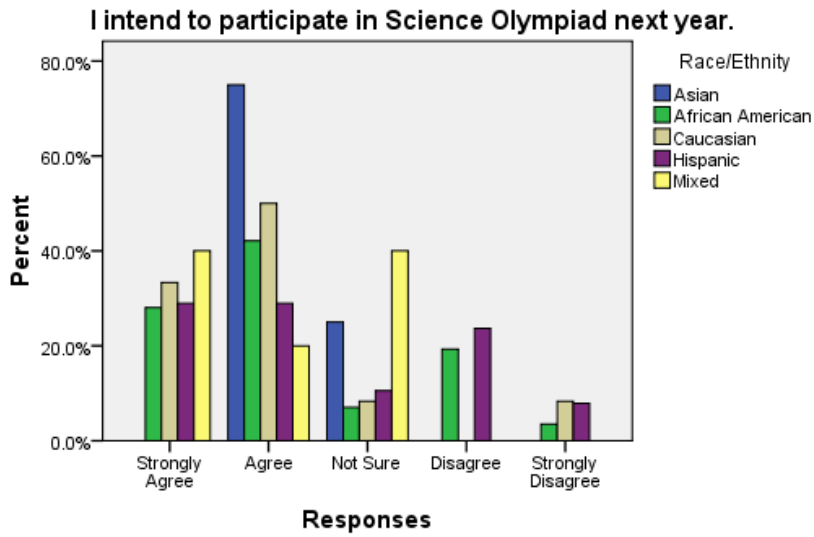
**Figure D37. Responses to Survey Question 23, Disaggregated by Race/Ethnicity**



**Figure D38. Responses to Survey Question 23, Disaggregated by Gender**



**Figure D39. Responses to Survey Question 24, Disaggregated by Race/Ethnicity**



**Figure D40. Responses to Survey Question 24, Disaggregated by Gender**

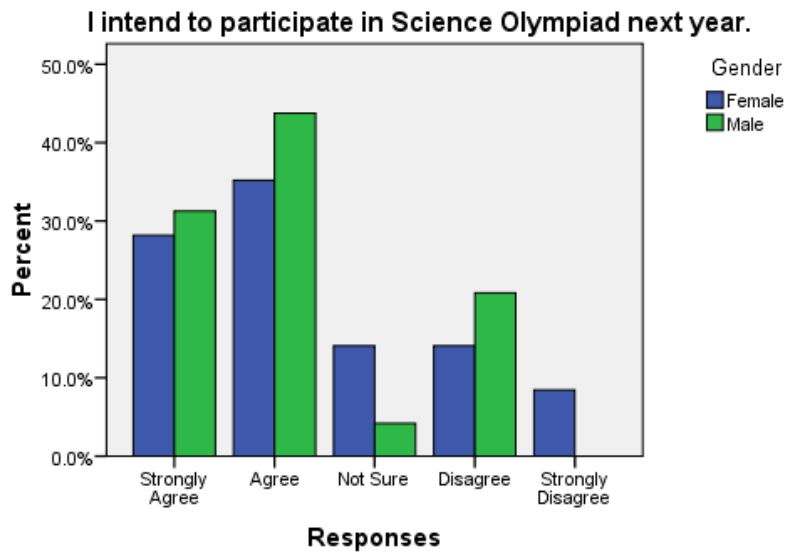


Figure D41. Responses to Survey Question 25, Disaggregated by Race/Ethnicity

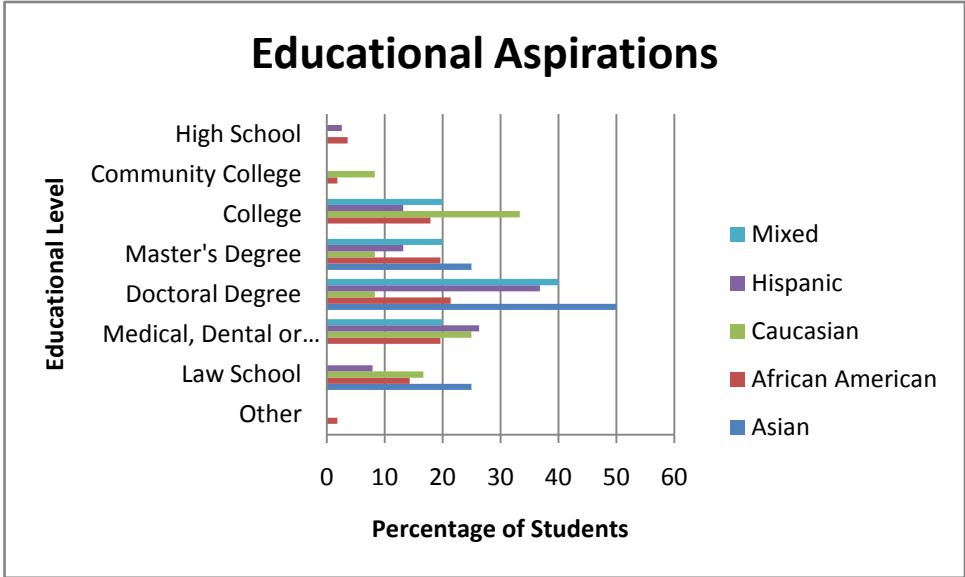
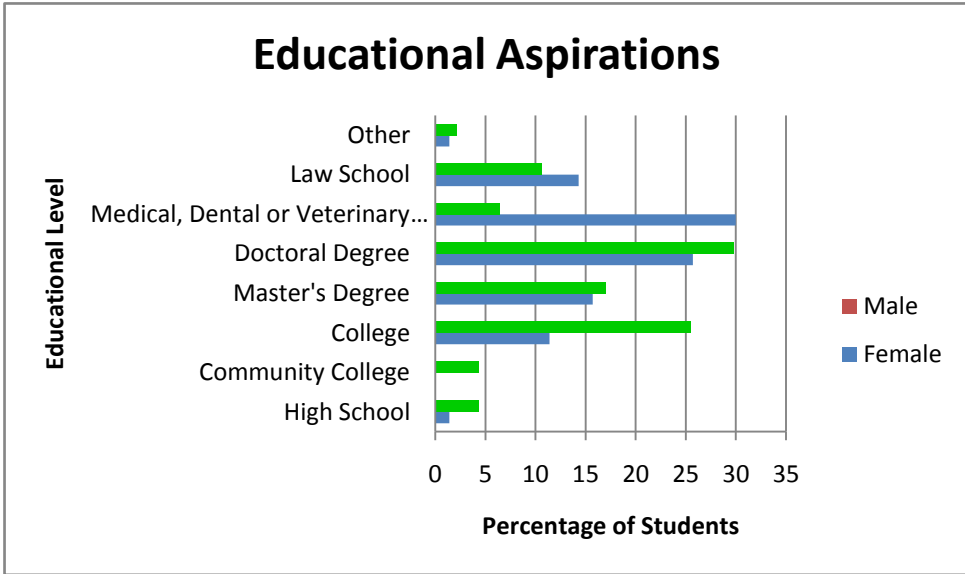


Figure D42. Responses to Survey Question 25, Disaggregated by Gender



**APPENDIX E**

**SCIENCE OLYMPIAD STATE COMPETITION PARTICIPANT SURVEY**

UNIVERSITY OF ILLINOIS  
AT URBANA - CHAMPAIGN

**Bureau of Educational Research**  
College of Education  
38 Education Building  
1310 South Sixth Street  
Champaign, IL 61820



**I-STEM**  
605 Springfield Ave  
Computer Applications Building  
Champaign, IL 61820

**SCIENCE OLYMPIAD STATE COMPETITION  
PARTICIPANT SURVEY**

Printed Name: \_\_\_\_\_

**Section I: Demographics**

Gender:

Female

Male

Race/Ethnicity (Check all that apply):

American Indian/Alaskan Native

Asian

White

Black/African American

Native Hawaiians or Pacific Islanders

Hispanic/Latina(o)

Mixed race/ethnicity or Other

(Please Specify): \_\_\_\_\_

Age: \_\_\_\_\_

Grade: \_\_\_\_\_

School \_\_\_\_\_

Science Olympiad Urban Science Initiative Evaluation

**Section I:**

1) Is this your first visit to the University of Illinois at Urbana-Champaign (UIUC)? (*circle the correct response*)

YES

NO

1a) If not, what other events or occasions have you participated in on campus?

---

---

---

---

**Please Check One:**

25) Before this visit, I would have not thought about attending the University of Illinois at Urbana-Champaign (UIUC).

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

26) After this visit, I am interested in attending the UIUC.

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

27) The campus tour helped me to learn what it might be like to study science/engineering at the UIUC.

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

28) UIUC is too large for me to attend.

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

29) I can see myself attending UIUC.

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

30) I want to learn more about UIUC.

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

31) This trip has increased my interest in science/engineering.

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

32) University students & staff were helpful & friendly

Strongly Agree     Agree     Not Sure     Disagree     Disagree Strongly

33) If you could continue with your schooling as far as you wanted, what is the highest level of education that you would want to complete? **Check one.**

- High School
- Community College (two-year college program) or Vocational School
- College (four or five year college program)
- Graduate School - Master's Degree
- Graduate School - Doctoral Degree (Ph.D.)
- Medical, Dental, or Veterinary School
- Law School
- Other (specify \_\_\_\_\_)

11) What is the highest level of education you really think you will complete? **Check one.**

- High School
- Community College (two-year college program) or Vocational School
- College (four or five year college program)
- Graduate School - Master's Degree
- Graduate School - Doctoral Degree (Ph.D.)
- Medical, Dental, or Veterinary School
- Law School
- Other (specify \_\_\_\_\_)

12) Please rate each part of the UIUC visit.

<b>Activity</b>	<b>Excellent</b>	<b>Very Good</b>	<b>Good</b>	<b>Fair</b>	<b>Poor</b>
a) Bus accommodations and trip	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b) Meals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c) Laboratory Visits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d) Event Clinics (Rate only if you participated)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e) Hotel stay and accommodations	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f) Science Olympiad awards ceremony	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

**Science Olympiad Urban Science Initiative Evaluation**

13) Did you find the Friday activities valuable? Why or why not?

---

---

---

---

14) Is there anything else you would like to add to Friday's schedule?

---

---

---

---

15) Describe your experiences with State Science Olympiad Competition.

---

---

---

---

---

---

---

16) Do you have any recommendations for Science Olympiad? \_\_\_\_\_

---

---

---

---

Thank you for your input!

**APPENDIX F**  
**RESPONSES TO SCIENCE OLYMPIAD STATE COMPETITION**  
**PARTICIPANT SURVEY**



## Appendix F

### Responses to Science Olympiad State Competition Participant Survey

Figure F1. Responses to State Competition Survey Question 1

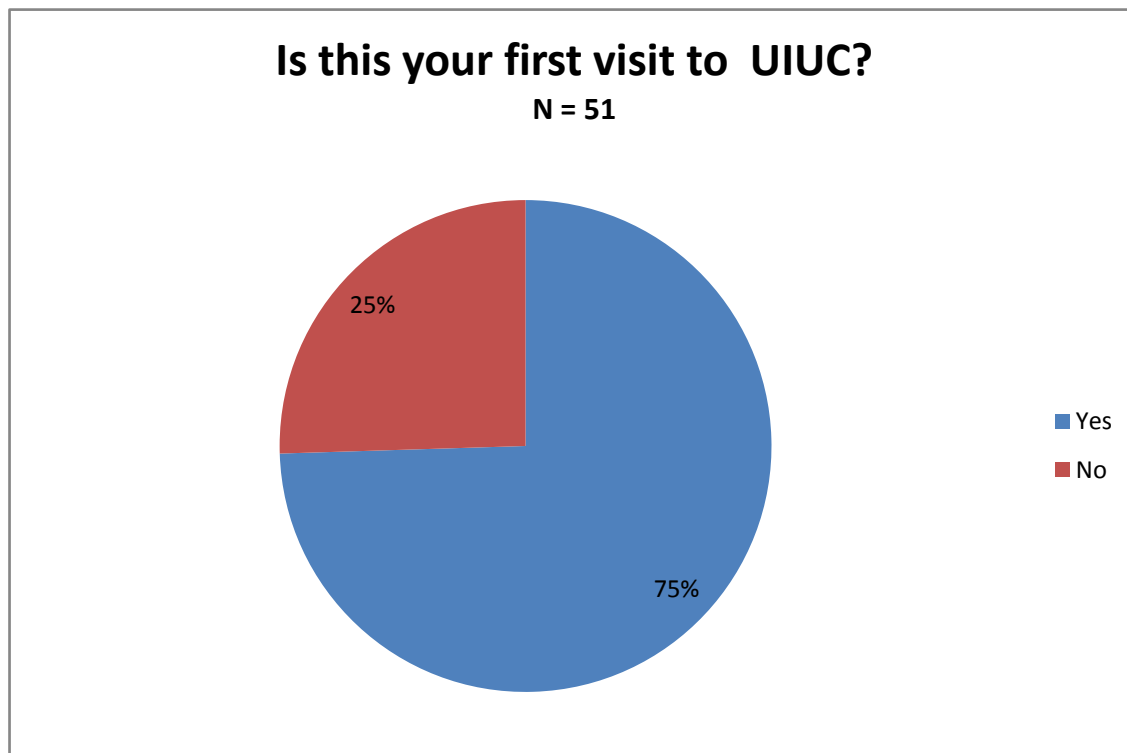


Figure F2. Responses to State Competition Survey Question 2

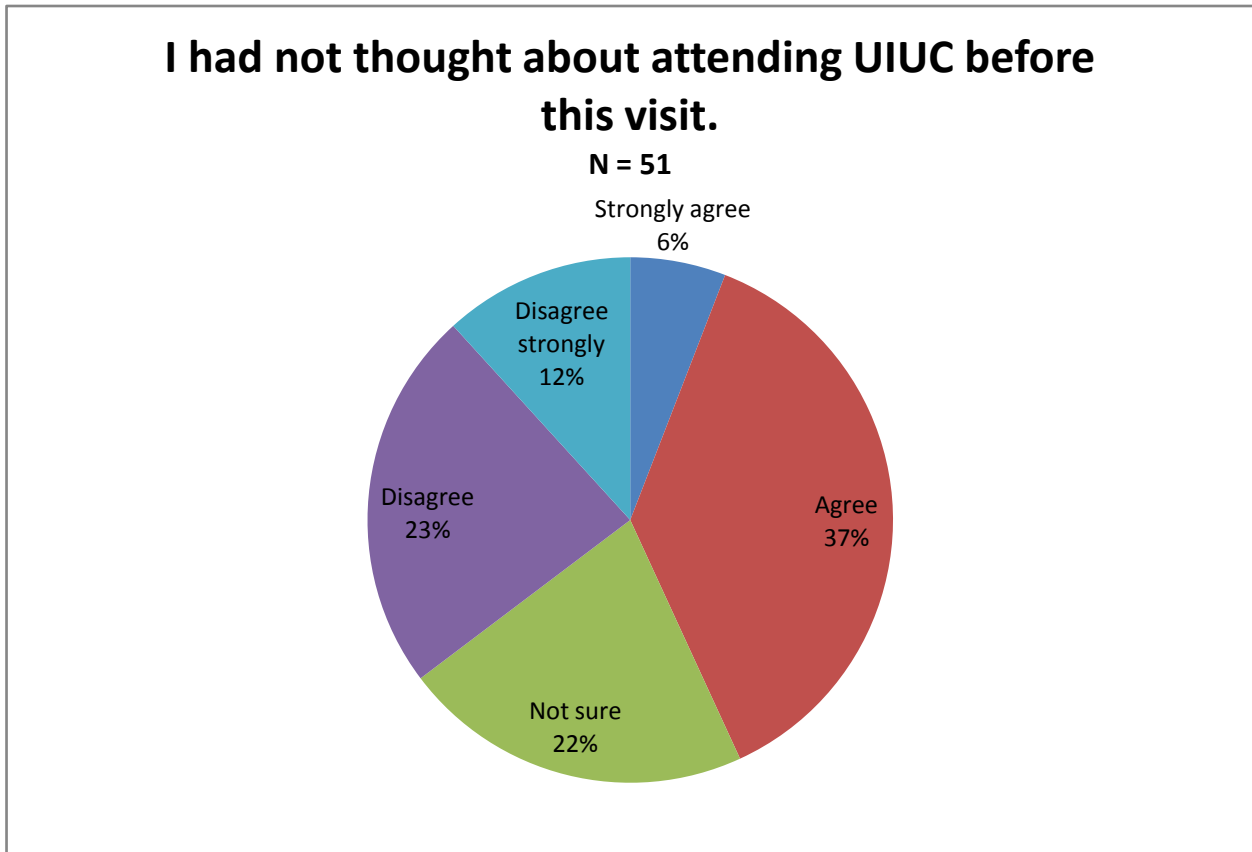


Figure F3. Responses to State Competition Survey Question 3

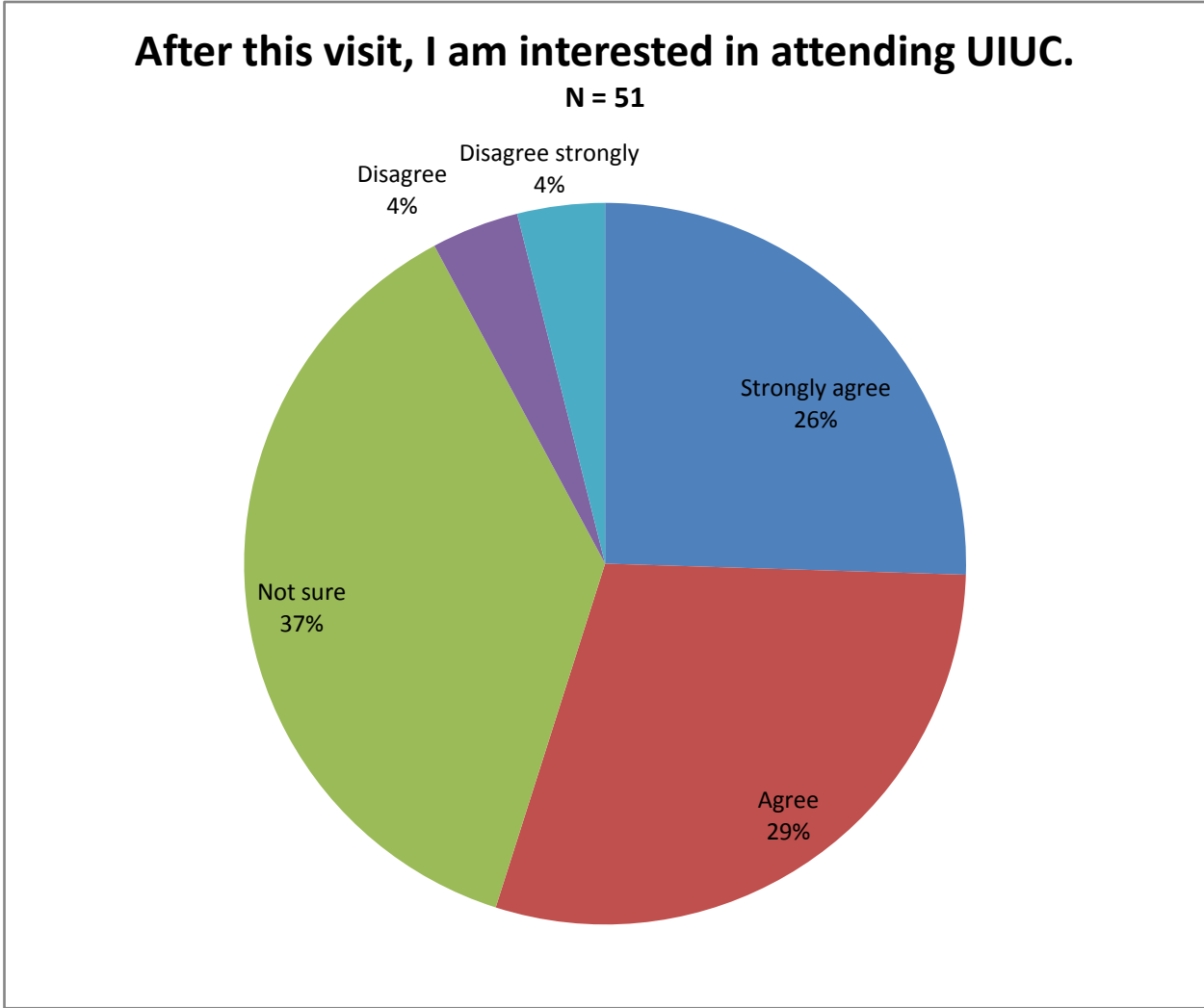


Figure F4. Responses to State Competition Survey Question 4

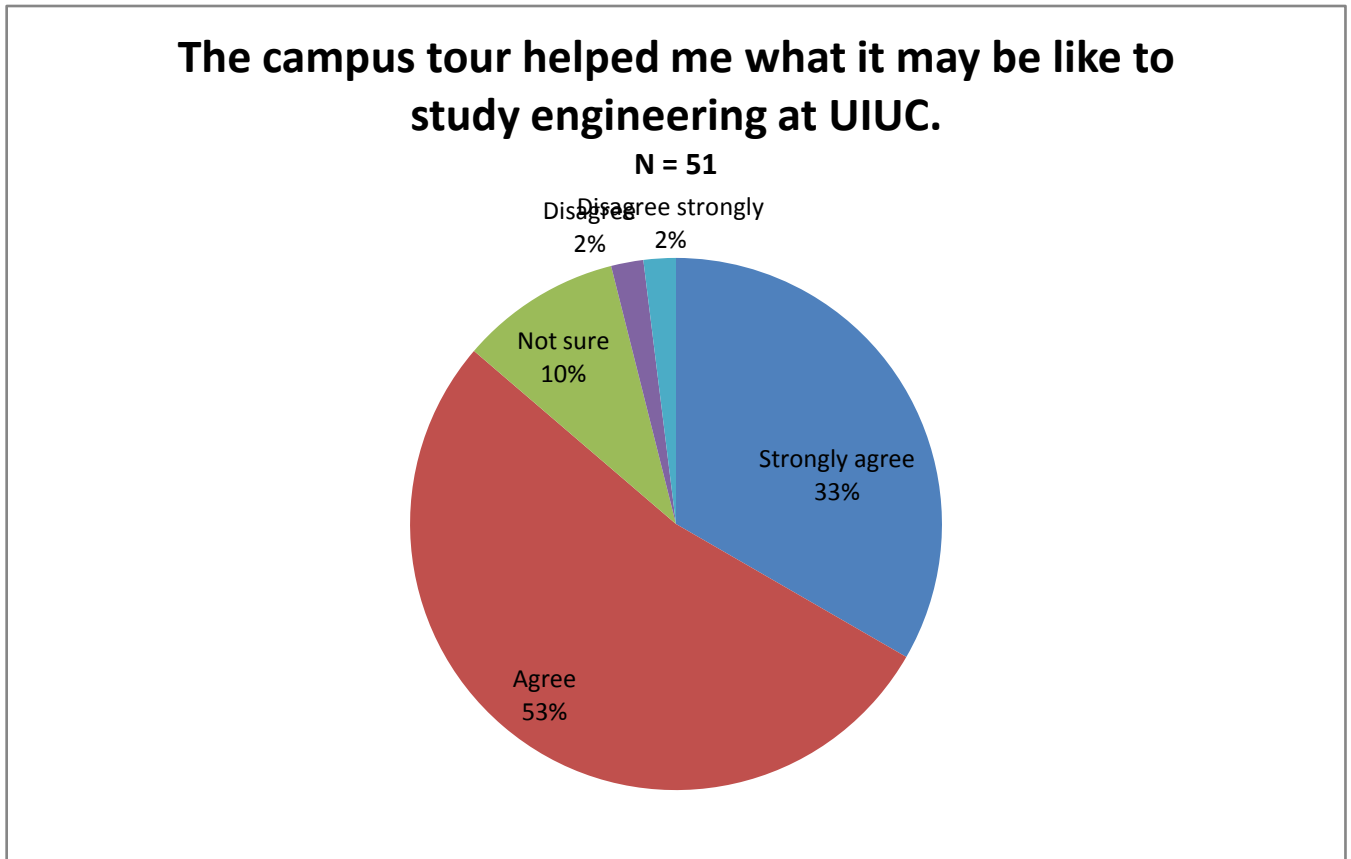


Figure F5. Responses to State Competition Survey Question 5

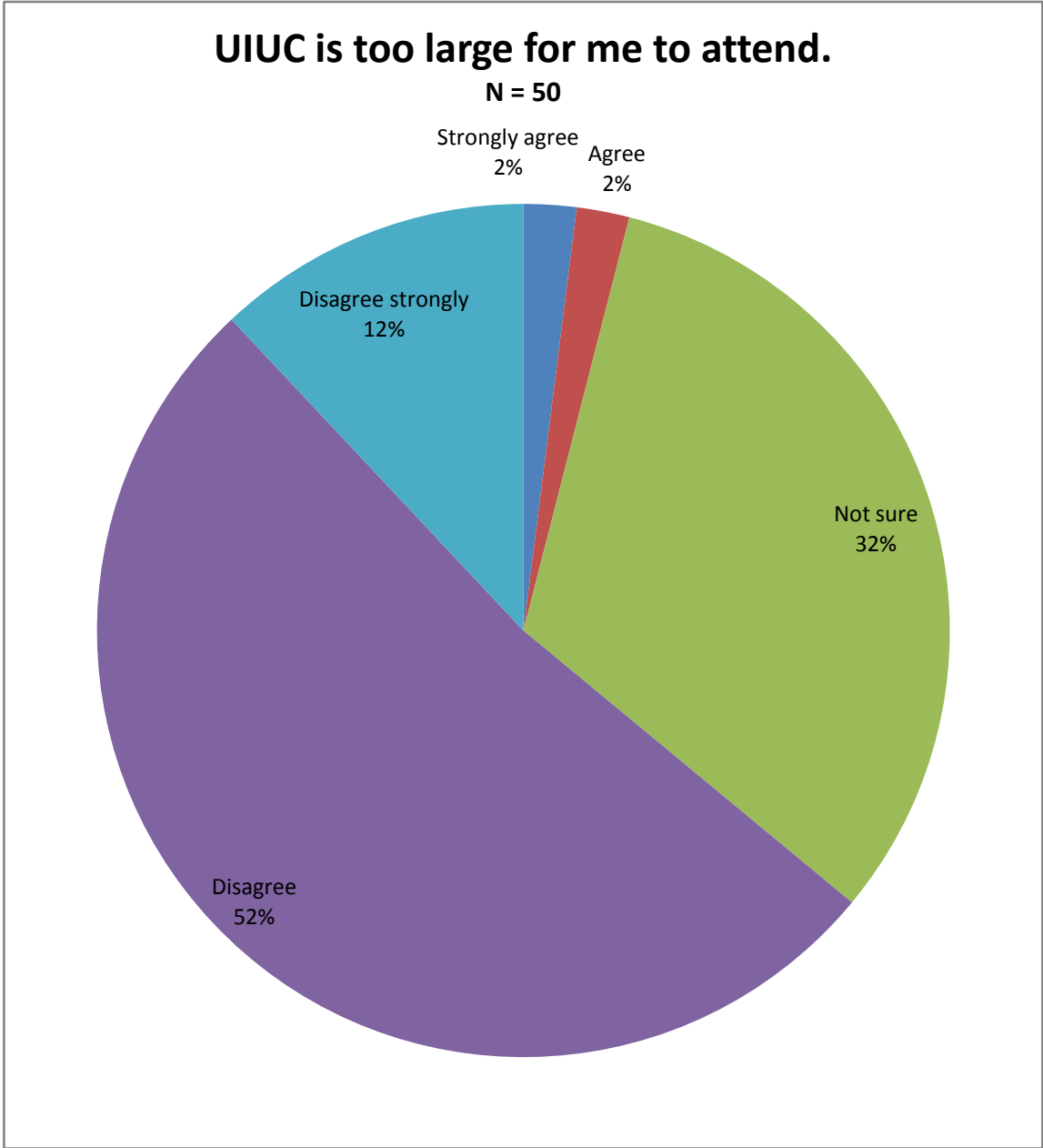


Figure F6. Responses to State Competition Survey Question 6

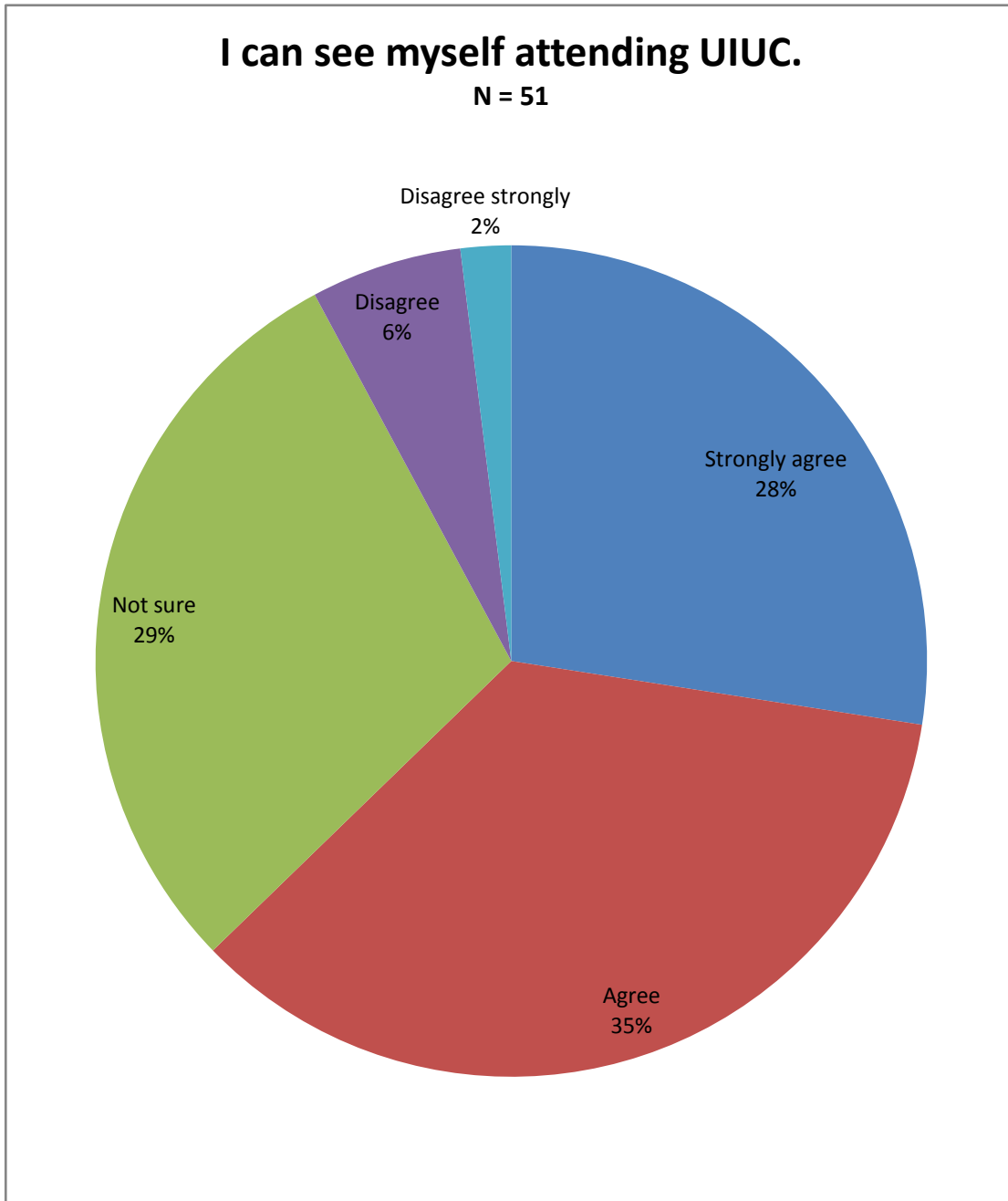


Figure F7. Responses to State Competition Survey Question 7

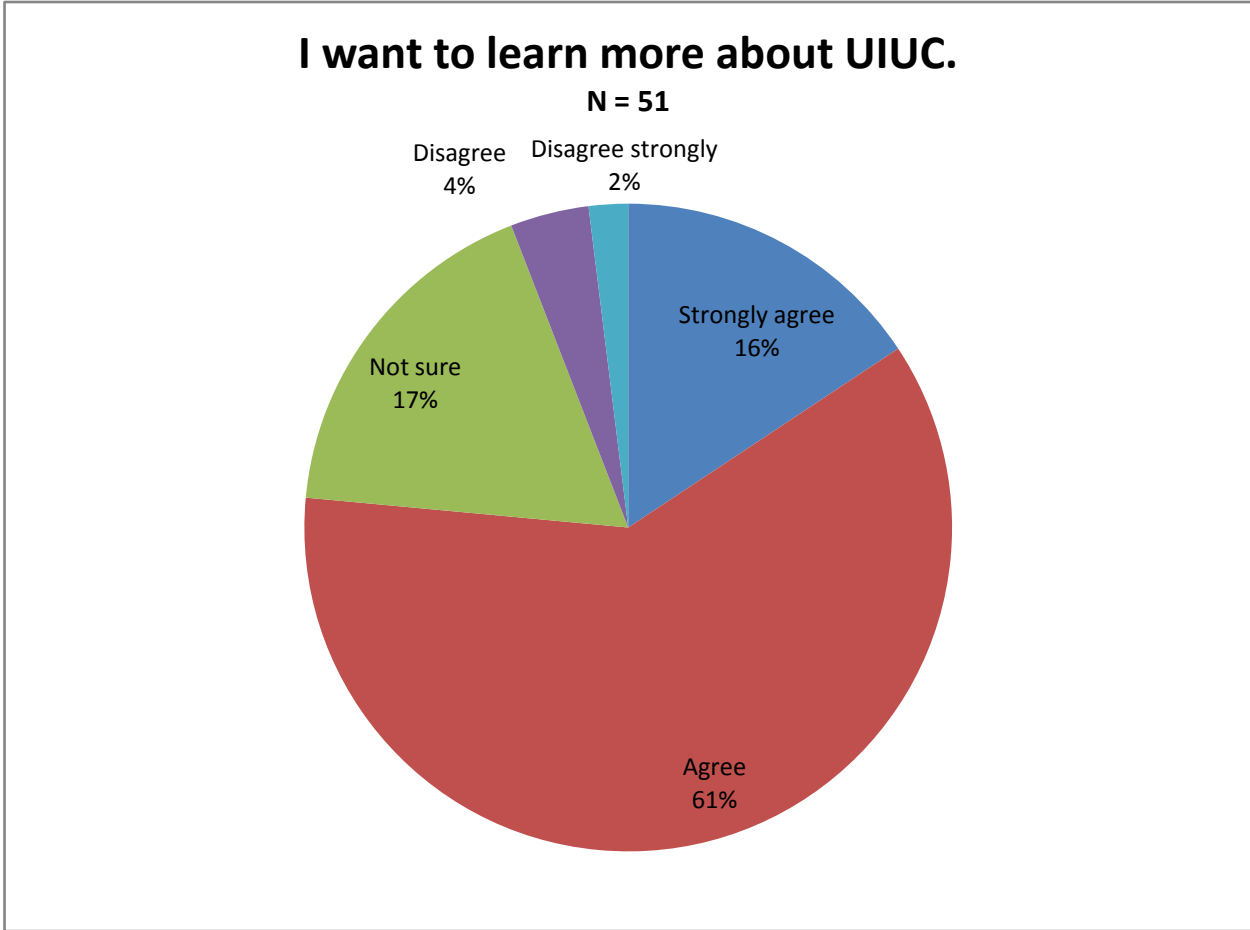


Figure F8. Responses to State Competition Survey Question 8

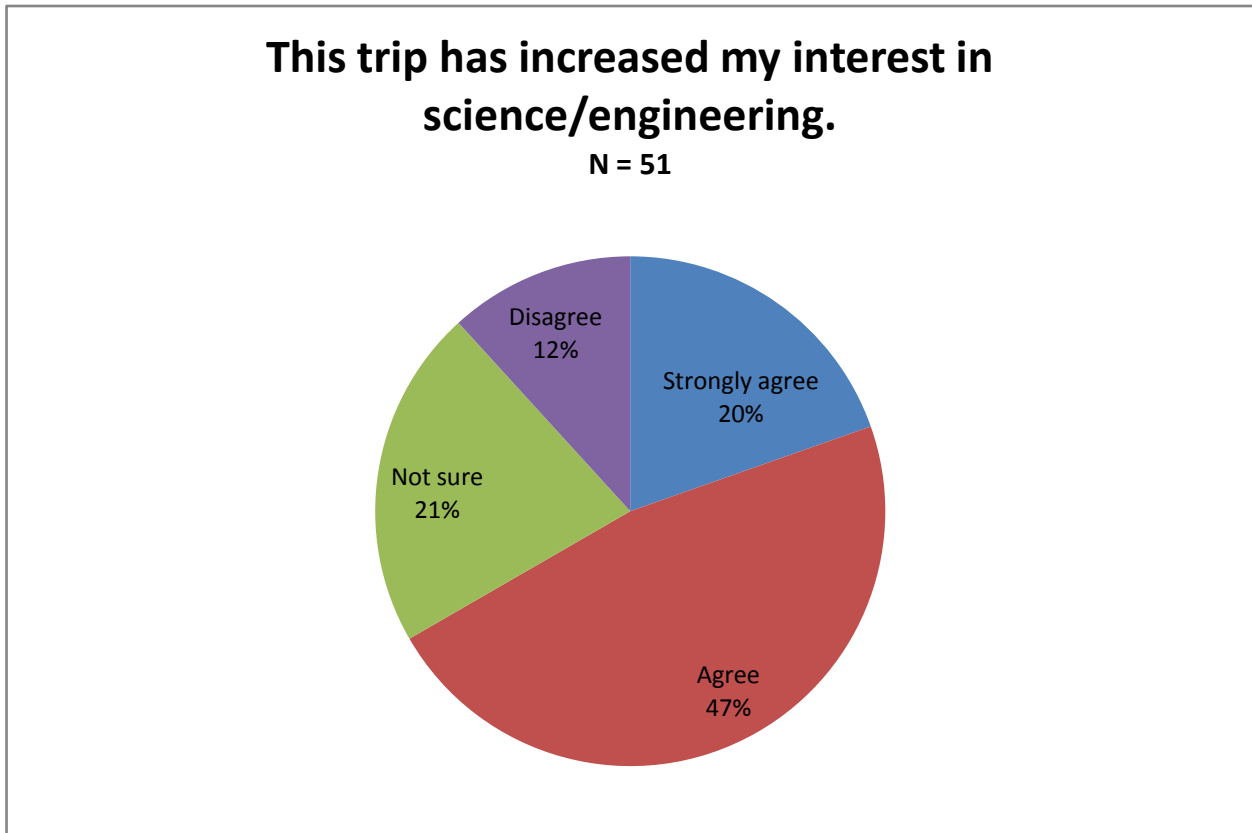


Figure F9. Responses to State Competition Survey Question 9

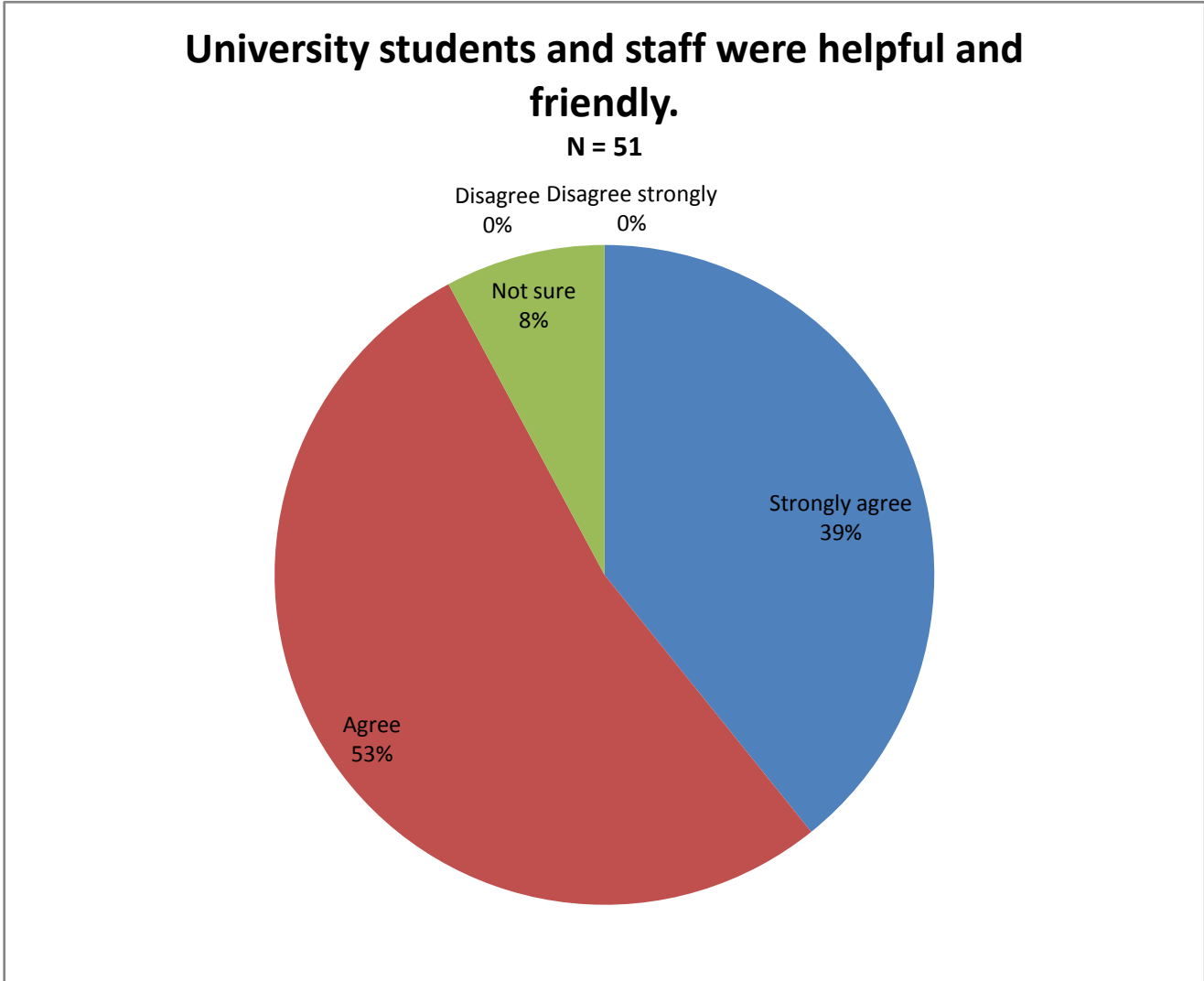


Figure F10a. Responses to State Competition Survey Question 10a

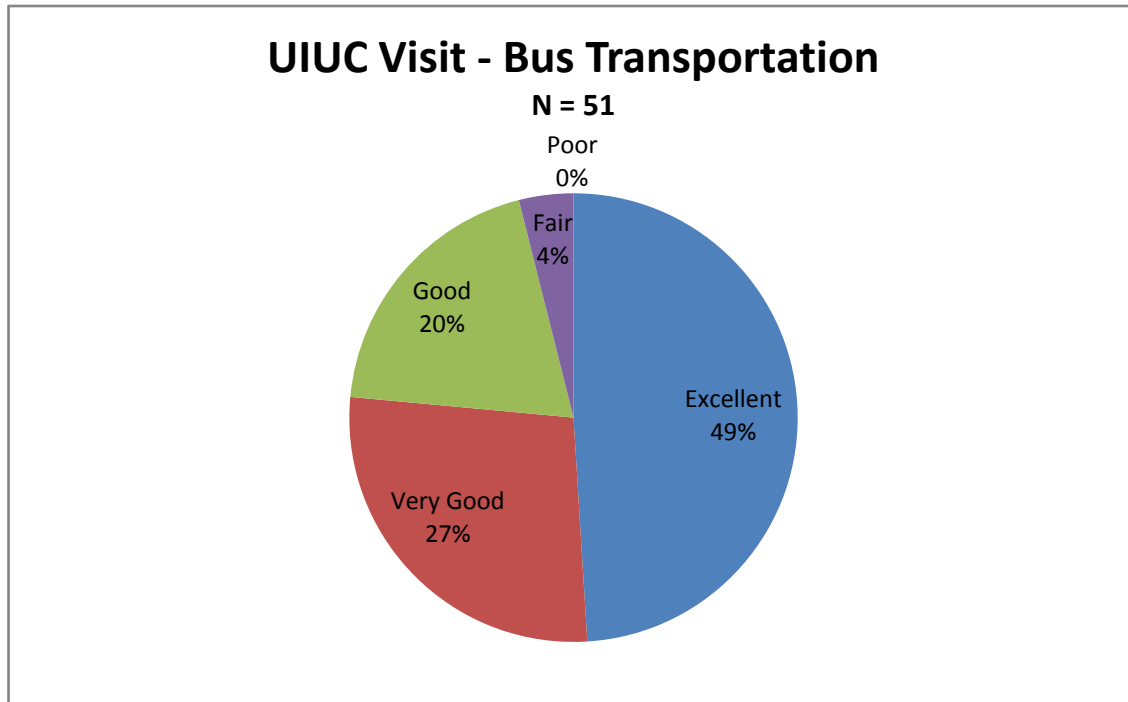


Figure F10b. Responses to State Competition Survey Question 10b

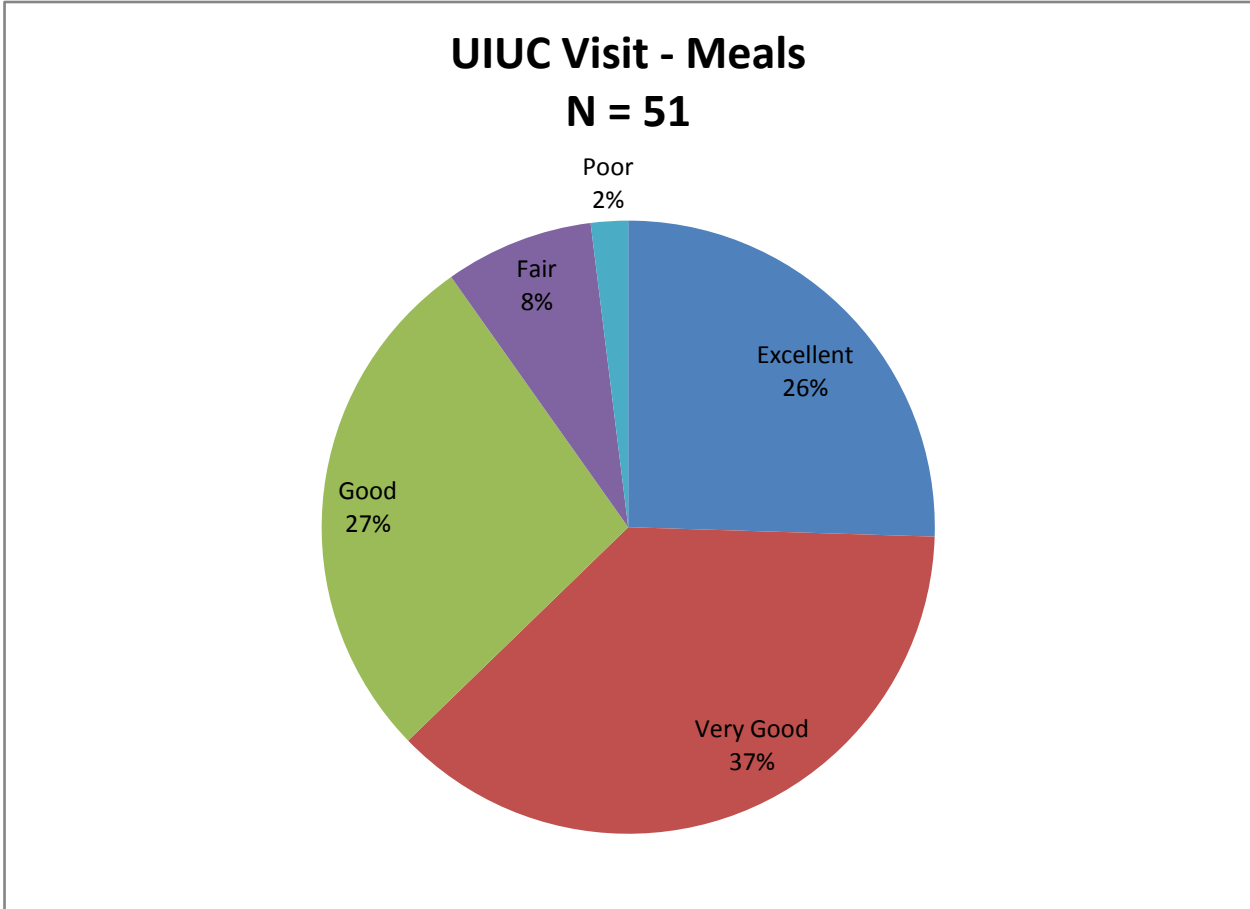


Figure F10c. Responses to State Competition Survey Question 10c

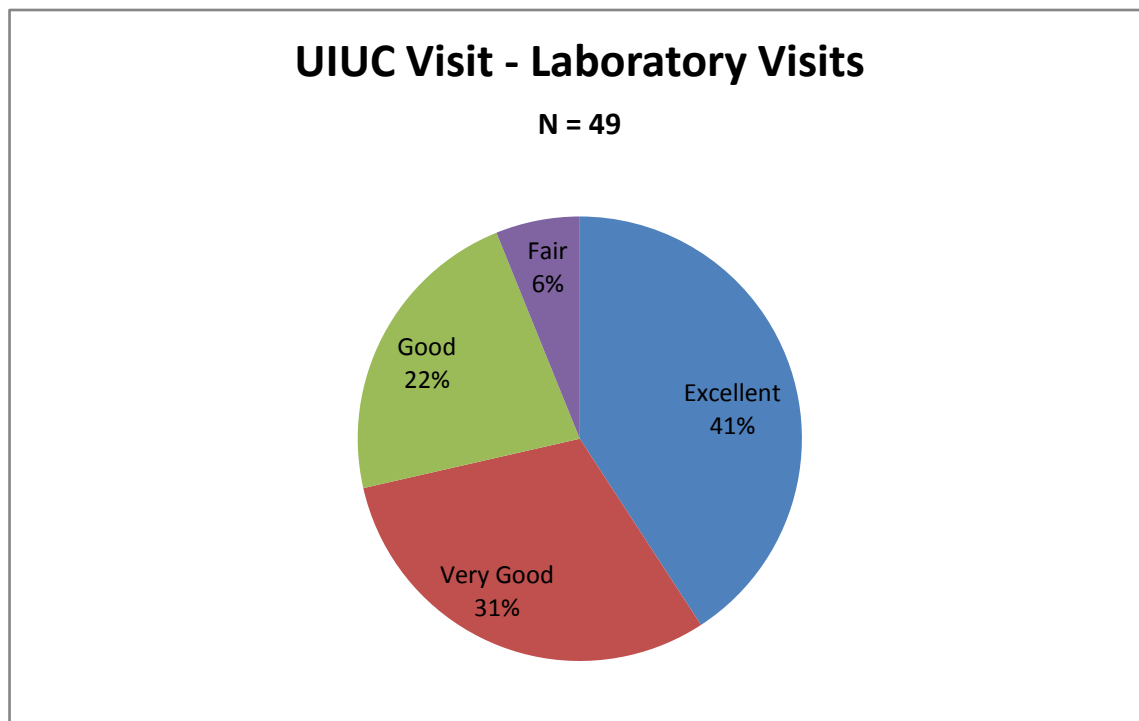


Figure F10d. Responses to State Competition Survey Question 10d

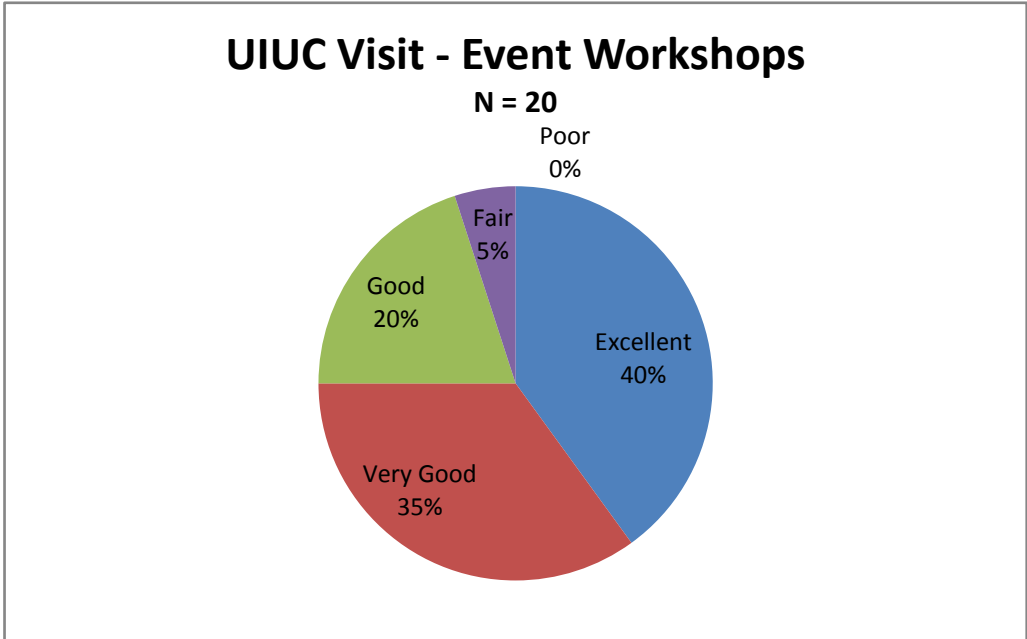


Figure F10e. Responses to State Competition Survey Question 10e

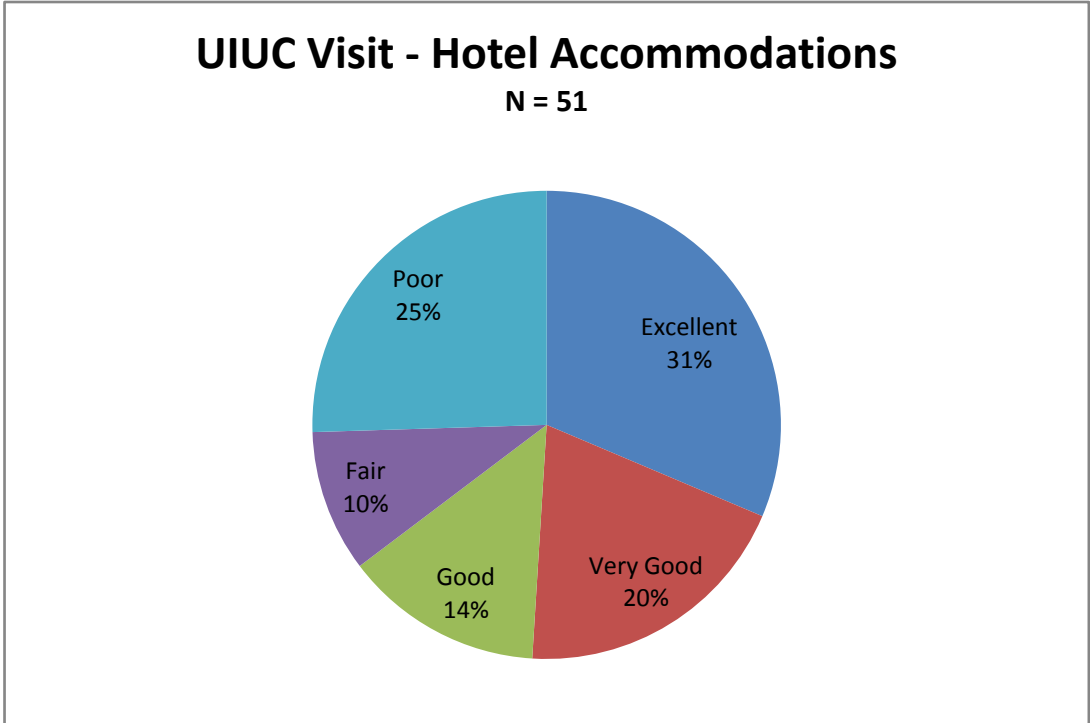
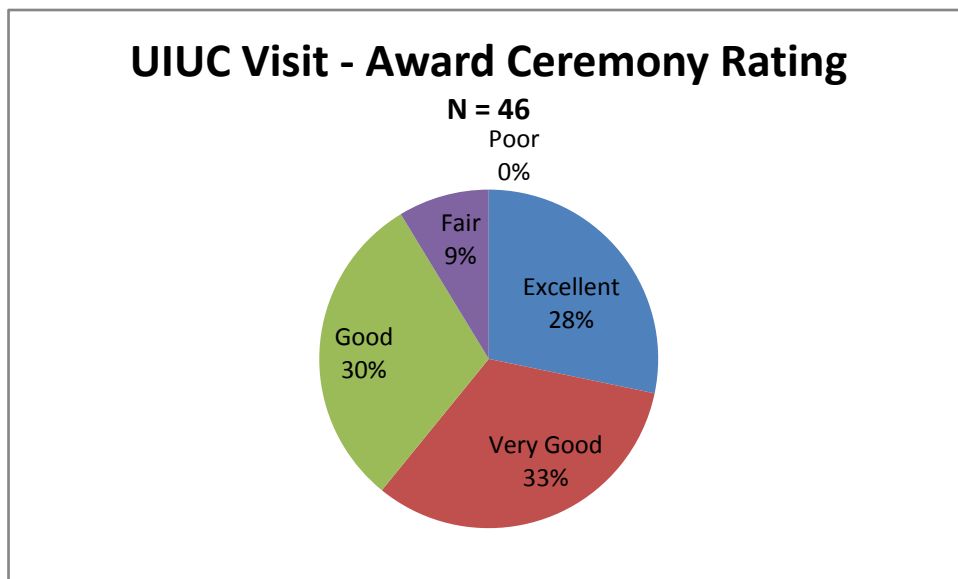


Figure F10f. Responses to State Competition Survey Question 10f



**11. Did you find the Friday activities enjoyable?**

- Don't know
- Friday was good; they taught us about the camps and the students
- I am good, because we learned new things.
- I did because they helped me think about my career choice.
- I do, because I learned a lot and had fun.
- I found chemistry valuable because I learned more about my event and UIUC.
- I found the activities fun, but not necessarily valuable. I didn't learn things because I already knew them.
- I LOVED the vet tour, because that is my desired career track.
- I think so, because I learn more about what they do at UIUC.
- I wasn't there [for] them.
- No, because I haven't found anything yet.
- No, because I was too distracted on my project.
- No, because there wasn't much that they showed us.
- No. They were really boring, so I wasn't able to appreciate anything.
- Not because only... Talking about
- Somewhat, activities not applying to everyone, should display well-rounded, more hands-on, interesting activities.
- The Friday activities were valuable because [they got] you interested in a career and [helped] you choose a career in life.
- They seemed to drag on for me. I, as well as my friends, [was] drained from the trip.
- Why not, because I have a lot of fun.
- Yes (2)
- Yes, because I enjoyed the tour and learning
- Yes, what they do in the lab.

- Yes, because [I] learned so much about the school and activities.
- Yes, because I learned a little bit more about the UIUC
- Yes, because I learned a lot about the school.
- Yes, because I learned new stuff about the field I want to go into.
- Yes, because I learned new things.
- Yes, because it helped me be interest[ed] in other career paths.
- Yes, because it helped me learn a lot about UIUC and got a look at college.
- Yes, because it helped me learn more about UIUC.
- Yes, because it was fun
- Yes, because of Betsy.
- Yes, because the tours were very interesting.
- Yes, because they help extend your knowledge on science
- Yes, because they taught a lot about college.
- Yes, but there was too much walking.
- Yes, I did because it broaden[ed] my knowledge.
- Yes, it helped me learn more and gave me a chance to ask questions.
- Yes, since I haven't had a tour in a college before.
- Yes, they really enriched my knowledge about UIUC.
- Yes, they were fun. (2)
- Yes, they were great.
- Yes, they were very educational.
- Yes, very knowledgeable
- Yes. I thought it would be interesting.
- Yes. This is because I am coming here next year.
- Yes; it [taught] us a lot about the school.

**12. Is there anything you want to add to the Friday activities?**

- A good hotel to stay in
- Clinics about other events
- I would have liked to do the other tour that I didn't sign up for.
- I would have liked to see the dorms.
- I would like to add some extra time to be able to go look around campus by ourselves.
- In the tractor garage students visiting could probably draw their own tractor model
- More choices for tours
- More groups
- More hands on
- More sleep
- No (23)
- No, but more time would be cool.
- No, Friday was great. I would make the tour shorter because I was totally wiped out for the rest of the night.
- No, I found it pretty satisfying.
- No, the engineering was great.

## Science Olympiad Urban Science Initiative Evaluation

- No. Something interesting perhaps? A cool demonstration of some sort?
- None (2)
- Nope
- Pool
- To stay at the hotel
- Working in the laboratories with real chemicals, organs cells, etc.

### 13. Describe your experiences with the state Science Olympiad competition.

- Really good because it was my first time, and I can't wait to go to state again.
- Very exciting, fun and a great learning experience
- It was very fun.
- They were challenging and enjoyable.
- It has been a lot of competition, but still fun.
- I have learned a lot of things.
- It's very fun, and I like doing it.
- It taught me a lot, but most of all I had fun.
- They were nice learning experiences.
- I had a lot of fun; my events were nice, and I really think I gained some experience.
- My experience was excellent because I [had] a lot of fun.
- Very fun and exciting. Will not hesitate to...
- My first experience taught me that competition [was] much higher than regionals.
- It was a lot of fun, but I wish we could have stayed longer.
- It was fun while it lasted.
- It was very fun—but challenging—and a great experience
- Fun, interesting, and informing
- I enjoyed it a lot; I would do this again next year if I could.
- SO was a great experience for me; I enjoyed touring the campus
- I enjoyed it a lot; this year was remarkable. The competition was amazing, and being able to enjoy science with my friends was great.
- It was very much fun. I will do it again next year.
- From the quad to the laboratories, I had such a great time here, and competing was fun and exciting, and this day I will never forget.
- They have been strenuous and stressful but overall enjoyable and worthwhile.
- I loved it, it was challenging, but fun; the hotel and bus [were] great; and I want to do it next year.
- Competitions were slightly stressful, but it was an exhilarating opportunity.
- They exceeded my expectations.
- I enjoyed the experience, but it was stressful to participate.
- Challenging, interesting, fun
- They were simply amazing!
- It was a great experience.
- This is my first time, but fun.
- Fun, exciting, challenged
- It's been fun because of the people who signed up.

- It is fun; I've learned a lot more about science.
- The state SO was extremely fun. Our team learned more about the events we did and got a good understanding about the U of I.
- We went to state—unexpected because all of us, including our coach, are first year. I had a lot of fun.
- I had fun and learned what I could do to improve my catapult.
- So much fun
- It is exciting and a life-learning experiment.
- It was fun and exciting.
- It was wonderful.
- Good, but very [tiring] because of long walks
- Been with SO for 2 years, and this is the first time that we made to state.
- It's been cool.
- It was very interesting.

#### 14. Do you have any recommendations for Science Olympiad?

- Better hotel rooms (2)
- Better hotel; the one we stayed in was horrible. I would have felt better sleeping on the bus. The sheets on my bed were dirty.
- Directions
- Get a hotel where you can open the door to a hallway instead of the street.
- Give every team a club car to move around campus to compete.
- I love it, maybe some new events to add to the old ones?
- I think that it would be better if we had more room at the awards, because we sat on the floor.
- More activities and more time out.
- No (16)
- No, I really enjoyed everything.
- No, it's fine the way it is.
- No. Great job!
- None (3)
- Nope
- SO is a great competition, and [since] it was my problem, then I'm sure it can be fixed.
- SO is wonderful; there are no recommendations I would suggest.
- Start the competition later in the morning.
- Thank you for having SO competition.
- The pizza was bad. Get more variety. And don't stick your guest in a shady motel!
- Try to lose some of the rules.
- Yes
- Yes, always... To inspire the best as possible.
- Yes, I would highly recommend it.
- Yes, to have more time between events.



**APPENDIX G**  
**SCIENCE OLYMPIAD COACH INTERVIEW RESPONSES**



## Appendix G

### Science Olympiad Coach Responses to Interview Questions

#### 1. Why did you decide to coach Science Olympiad?

- a) Sounded like a good opportunity we decided to do; topics were very engaging or students; a lot [to] digest in the time period that we had. Hands-on, construction, trajectory well-rounded, excellent
- b) It seemed like a great program to bring to the school, especially with a new lab and resources.
- c) Hadn't known about it until Dec 08. Intro meeting—principal—math physics certification A little daunting—small school—little opportunity from competition. CPS sent email to principal; [we] get better every year. Build-it day was cool.
- d) I really enjoy working with the students and helping them apply the principle w/science in various competitions.
- e) I was asked by the assistant principal, and I wanted to get involved with extracurricular activities.
- f) Better enhance science curriculum
- g) I participated in SO when I was in high school; I had so much fun doing it that I jumped.
- h) I wanted to expose my students to a new science experience.
- i) I decided to coach the SO because it is another way to involve my students in a content competition and to continue developing love toward science.
- j) To provide opportunities for my students
- k) To help students
- l) Are you kidding me? These kids are awesome. I was in SO in HS myself. I love it.
- m) I believe that hands-on activities (focus of SO) help students learn science. Especially with today's technology...young students rarely engage in activities that take time, analysis, and reflection.
- n) .....
- o) .....
- p) .....
- q) I like how it is structured and provides an alternative to science fairs.

#### 2. Are you receiving adequate support from Science Olympiad? CPS? Your administration?

- a) October training 24 categories—Not enough time to go in-depth, good job considering the time; 2 hours each category; teacher had to pick and choose between 7.5–8 in terms of ranking. They [were] fantastic...
- b) Yes, but as the only coach, it was tough. Now that it is more familiar, I expect more help next year.
- c) 1<sup>st</sup> time through—hard to know what's enough—so—good into sessions at SMI—manpower thing—what's expected—what to delegate—L(D)ont financial incentive is nice—claim to have \$1000 stipend.
- d) ...

## Science Olympiad Urban Science Initiative Evaluation

- e) We are definitely getting lots of support from SO and administration. I am not sure what CPS is doing.
- f) SO was very helpful.
- g) Absolutely
- h) I am receiving a great amount of support from SO, ISO, and CPS office. My administration isn't quite as supportive, but supports my effort.
- i) Yes, all have been supportive.
- j) We have received adequate support from the SO team. As a Science Department Chair, I have planned with my co-coach everything at the school level.
- k) Yes to all
- l) Yes, but it would be nice to receive school funding.
- m) Yes, yes, yes, very supportive
- n) I have been trained in almost all of the events.
- o) .....
- p) .....
- q) Yes, in all areas

### 3. Have you received sufficient training to coach the various events?

- a) It's kind of complicated. You, the coach, have to [be] knowledgeable. Not specific training for coaches. Overview of the program and resources, but not specific training for the coaches. Started out with more than 20, so we narrowed it down to 15, as the weeks went on less and less students would show up. I had to find teacher to kind of co teach with me.
- b) Yes, but more training in how scheduled events run would [have] helped, especially Wright Stuff
- c) Not really. As coordinator, never going to know all events. I had to help kids with all events. Admin [seemed] some[what] familiar with events; need people familiar with event to help prepare for event.
- d) The training was good, but until you actually experience it, nothing can truly prepare you.
- e) I was given the opportunity but didn't take real advantage of it.
- f) Yes, and trial and error
- g) Yes I have, I understood the events well (although more training is always appreciated).
- h) There were a lot of opportunities that I participated in, but I felt a bit overwhelmed at times because I did not have another coach working with me.
- i) I have received training, but I think we need to continue increasing the workshops directed to coach different events.
- j) Yes, from Kevin Griffith (BEST)
- k) Some, yes. Others, I am still weak in Chem Forensics, Wright Stuff
- l) I have been trained in almost all of the events.
- m) ...
- n) More is always welcomed
- o) Yes and no—I think we should have streamlined our approach in certain areas.
- p) I was a forensic scientist for 7 years and have a degree in Biology.
- q) Yes. However, more could always be used.

**4. How did you get the resources you needed?**

- a) Materials were t-shirts, handbooks, for topics, CDs. Had to print a lot. [Took a lot] of time and paper to print out materials. Materials were inexpensive—easy for the school to get.
- b) Yes
- c) Hopefully getting reimbursed for my expenses, textbooks, hardware store. I have receipts. Big hurdle, especially with the kids I work with. You can't rely on families to give that much.
- d) Mostly through school
- e) I looked for them myself.
- f) Science Olympiad
- g) Self-purchased, salvage, provided by SO and CPS
- h) Local budget, personal budget
- i) We bought them, or we already had some in our department.
- j) Self, school, students
- k) Through purchasing and recycling
- l) I used our \$1000 stipend as resource
- m) My principal provided us the money/funds to purchase our supplies and equipment. CPS paid for our membership and other resource materials, and stipend (for running a club). SO helped me get the resources to attend the summer institute last year with CPS
- n) Yes (Hints are always welcomed)
- o) Begged, bought, and (stole). Just kidding!
- p) Internet, books, and previous knowledge
- q) Out of pocket (ouch)!

**5. Do you expect your school to support Science Olympiad after external funding ends?**

- a) It would be good for the administration support [SO]. If I pushed for [it] and the money was there, they definitely would.
- b) Yes
- c) Keenan Math and Science. [The] principal—I could ask him for extra hour. I have nothing but good things to say about student excitement, level of thinking kids do.
- d) No
- e) ...
- f) Yes
- g) Yes, I would hope so.
- h) Yes, my principal is very supportive and encouraged extracurricular activities.
- i) Yes, I do
- j) ...
- k) Yes
- l) ?? Not sure yet. Need to discuss with them
- m) Yes, I hope.
- n) Yes
- o) Yes
- p) Yes
- q) Yes

**6. What is the level of correlation between the Science Olympiad events and the state standards/curriculum?**

- a) They are linked to a certain degree, extends a little beyond maybe up to high school. Some things were hard to link, but 70%...
- b) Nearly every event covered an ISAT tested area and material in one of my classes.
- c) No. Cell biology and physics is related to some. Critical thinking—what you need everywhere. General science—it's hard to say how well the match is.
- d) The correlation between SO and standards/curriculum was adequate.
- e) There was not a large correlation. It felt like the events were more advanced.
- f) Very high— many of the concepts as used in the classroom.
- g) The curriculum is excellent, allowing the students to take knowledge to higher (Blooms) levels.
- h) The SO correlates with the state standards because it stresses scientific inquiry as well as the various content areas.
- i) I think that there is a strong relationship between the Science Olympiad and the state standards.
- j) I see a high level of correlation.
- k) There is some, mainly on collaboration.
- l) So/so
- m) The SO events give student activities that promote better understanding of environmental science, chemistry, physics, and astronomy and...through hands-on engineering/tech events and paper/pen tests. The correlation is high.
- n) Living the standards.
- o) Very relative
- p) Yes
- q) In line with...

**7. Describe the benefits you, your school, and the students gained by participating in Science Olympiad.**

- a) Students have small instruction, science in a practical setting, not just in the textbooks. They go back to class and spread the word and get other students interested in joining the school as well. It draws them in the practical application; they get the full picture of things they learn in school. The bad thing is that the number of students that they allow on the school [team], that they only allow so many.
- b) It was a great opportunity to put [our] new lab and resources to use.
- c) Access and experience with project, lab, experiment construction—structures their logic, reasoning, builds confidence, makes science more accessible—makes it fun—that's half the battle—test scores on the rise, so I can ask for things and he usually agrees.
- d) Students gained a greater appreciation for science, particularly in terms of trial and error.
- e) I learned a lot about running and organizing a club.
- f) Enthusiasm, curricular enhancement
- g) I gained a small amount of satisfaction by seeing the successes and discoveries of my students. They gained...
- h) I was able to learn new methods for teaching science in the various event areas. My students were able to engage in new projects, and other students who observed what the SO students were working on became curious.

- i) It is going to motivate them to participate in science events, and it may increase their interest for studying science [as a] career.
- j) High level of engagement and fun from students; the ability of students to see outside of the classroom.
- k) Learning, fun, collaboration
- l) Teamwork skills, fun...learning, dedication—success
- m) Increase[d] interest in science
- n) Students gain experience they would not otherwise ever get in a traditional learning experience.
- o) Exposure! Deeper knowledge! Hands-on experiences! The challenge of commitment.
- p) Greater appreciation for science.
- q) I have a team of 15 5<sup>th</sup>/6<sup>th</sup> graders. They were the youngest students competing and still they won a state Bio.

**8. Describe any challenges you may have faced running Science Olympiad this year?**

- a) Content challenge required a lot of memorization, students getting the visual like fossils, keeping the kids motivated, and declining numbers. Once a week and started after Christmas
- b) Additional coaches would have been a huge help.
- c) Getting students to commitment—did a big push—started as a math club, turned into science club with mixed success. Turned my pre-calculus class into SO; the electronic car attracted a lot of kids. [The chance to] study a field, [plus the] independence, expertise, parent adoption, no chance for failure with grades or tests attracted the kids.
- d) Finding the time for all the students to meet.
- e) I was a first year teacher and was asked to be the head coach. I ran into a number of organizational problems, as well as finding time to do all the work that was required.
- f) Beginning apprehension/expertise
- g) It was difficult to get support from the staff, so the time (although well worth it) was demanding.
- h) I didn't have another coach, so I found it difficult to help each of the students as much as I wanted to. Also, there were a lot of students who came and went, so it was also a struggle to prepare the students adequately.
- i) How to find the time for meeting with the entire team
- j) Time for students
- k) It's a huge time commitment.
- l) Getting commitment from other teachers, not as coaches, but with collaboration, suggestions, and providing supplies.
- m) Limit on the number of seniors (up to 7) that can participate; student schedule and mine—some students attend before school and some after school.
- n) So many events/only one coach, and keeping students motivated
- o) Time (lack of enough); Resources (Both \$ and human); commitment level of the students
- p) Time
- q) Time, time, time

**9. Is there anything else you would like for us to know about this experience?**

- a) N/a
- b) Big fan so far
- c) Training session for SO at MSI was great.
- d) It was a real learning experience for me. I'm worried that it was not as positive an experience for my students since things got kind of thrown together.
- e) I'm glad I was involved. I look forward to next year.
- f) I'm very glad to have the opportunity to coach. I wish more teachers could experience SO with their students.
- g) This experience has been very enjoyable—there was a lot of work involved to prepare, but it was worth the effort.
- h) It has been a wonderful experience, and I think that next year we shall be more prepared to participate and win in this event.
- i) Great experience for students to bring back to school and recruit others
- j) More supplies should be given.
- k) Great!
- l) Very challenging experience
- m) Thank you for everything you do that we don't know about.
- n) I think it was a great opportunity to explore the world around them....stretch, expand, grow!
- o) No
- p) No
- q) N/A

**10. Do you have any suggestions on how to make Science Olympiad better next year?**

- a) An opportunity to get an earlier start would have been a big help; however, I don't expect that to be a problem next year.
- b) Good atmosphere; good to see [it] expand—maybe into a carnival; videos
- q) Don't schedule our region on the weekend of spring break.

**APPENDIX H**  
**SURVEY RESULT TABLES**



**Appendix H**  
**Survey Results**

**Table H1. Survey Results for all Science Olympiad Participants**

Questions	N	M	SD
I am interested in engineering.	120	1.73	0.847
I am interested in pursuing a career in engineering.	120	2.38	1.078
People who enter math and science careers tend to be “nerds” who lack social skills.	116	4.30	0.897
Scientists and engineers work longer hours than most other professionals.	119	2.76	0.945
Having a career in engineering or science requires too many years of education.	120	3.10	1.048
Becoming a scientist or engineer is a good way to serve humanity.	119	2.04	0.960
I have a good understanding of what scientists and engineers actually do.	119	2.14	0.886
Scientists and engineers mainly work alone, with equipment instead of people.	119	3.60	0.942
I am confident I can do science/engineering.	119	2.13	0.935
I can see myself working in engineering someday.	119	2.29	1.052
Working in a science laboratory would not be an interesting way to earn a living.	118	3.91	1.054
Do you know anyone who has a job in science, technology, engineering, or mathematics?	115	1.21	0.408
Science Olympiad has helped increase my interest in science.	118	1.70	0.720
I had fun in Science Olympiad this year.	119	1.37	0.623
I’ve learned a lot about science by participating in Science Olympiad.	119	1.62	0.651
Science Olympiad has helped increase my interest in science and technology careers.	119	1.87	0.953
Science Olympiad has increased my confidence in my ability to do science well.	119	1.73	0.685
I’ve been able to make new friends in Science Olympiad who share my interest in math and/or science.	119	2.29	1.203
I intend to participate in Science Olympiad next year.	87	1.72	0.845

1 – Responses 1 through 5 ranged from Strongly Agree to Strongly Disagree.

2 – Only respondents with both pre- and post-survey data were included in this analysis.

**Table H2. Disaggregated Survey Results by Gender**

Question		N	M	SD
I am interested in engineering.	Female	71	1.82	0.915
	Male	49	1.61	0.731
I am interested in pursuing a career in science.	Female	71	2.38	1.087
	Male	49	1.61	0.731
People who enter math and science careers tend to be “nerds” who lack social skills.	Female	67	4.34	0.863
	Male	49	4.24	0.947
Scientists and engineers work longer hours than most other professionals.	Female	70	2.74	0.896
	Male	49	2.80	1.020
Having a career in engineering or science requires too many years of education.	Female	71	3.06	1.013
	Male	49	3.16	1.106
Becoming a scientist or engineer is a good way to serve humanity.	Female	70	2.11	1.071
	Male	49	1.94	0.775
I have a good understanding of what scientists and engineers actually do.	Female	70	2.16	0.942
	Male	49	2.12	0.807
Scientists and engineers mainly work alone, with equipment instead of people.	Female	70	3.54	0.943
	Male	49	3.67	0.944
I am confident I can do science/engineering.	Female	70	2.14	0.937
	Male	49	2.10	0.941
I can see myself working in engineering someday.	Female	70	2.24	0.999
	Male	49	2.37	1.131
Working in a science laboratory would not be in interesting way to earn a living.	Female	71	3.99	0.993
	Male	47	3.79	1.141
Do you know anyone who has a job in science, technology, engineering, or mathematics?	Female	70	1.19	0.392
	Male	45	1.24	0.435

1 – Responses 1 through 5 ranged from strongly agree to strongly disagree.

2 – Only respondents with both pre- and post-survey data were included in this analysis.

**Table H3. Disaggregated Survey Results by Gender**

Question		N	M	SD
Science Olympiad has helped increase my interest in science.	Female	71	1.70	0.744
	Male	47	1.70	0.689
I had fun in Science Olympiad this year.	Female	71	1.37	0.681
	Male	48	1.38	0.531
I've learned a lot about science by participating in Science Olympiad.	Female	71	1.62	0.684
	Male	48	1.63	0.606
Science Olympiad has helped increase my interest in science and technology careers.	Female	71	1.89	0.994
	Male	48	1.85	0.899
Science Olympiad has increased my confidence in my ability to do science well.	Female	71	1.76	0.706
	Male	48	1.69	0.657
I've been able to make new friends in Science Olympiad who share my interest in math and/or science.	Female	71	2.39	1.270
	Male	48	2.15	1.091
I intend to participate in Science Olympiad next year.	Female	52	1.85	0.916
	Male	35	1.54	0.701

1 – Responses 1 through 5 ranged from strongly agree to strongly disagree.

2 – Only respondents with both pre- and post-survey data were included in this analysis.

**Table H4. Disaggregated Survey Results by Race/Ethnicity**

Questions	African American	Asian	Caucasian	Latina	Mixed
1. I am interested in science.	1.60	1.86	1.42	1.76	1.40
2. I am interested in pursuing a career in science.	2.40	2.63	1.83	2.29	2.00
3. People who enter math and science careers tend to be “nerds” who lack social skills.	4.50	4.32	4.50	4.14	4.75
4. Scientists and engineers work longer hours than most other professionals.	2.80	2.75	3.08	2.66	3.00
5. Having a career in engineering or science requires too many years of education.	3.80	3.00	3.50	2.97	3.20
6. Becoming a scientist or engineer is a good way to serve humanity.	2.00	2.04	2.33	2.03	1.80
7. I have a good understanding of what scientists and engineers actually do.	2.20	2.14	1.92	2.32	1.60
8. Scientists and engineers mainly work alone, with equipment instead of people.	3.40	3.50	3.67	3.66	4.00
9. I am confident I can do science/engineering.	2.20	2.29	1.58	2.21	1.40
10. I can see myself working in engineering someday.	2.20	2.61	1.50	2.13	2.20
11. Working in a science laboratory would not be an interesting way to earn a living.	4.25	3.50	4.50	4.21	4.40
12. Do you know anyone who has a job in science, technology, engineering, or mathematics?	1.25	1.20	1.17	1.24	1.25
13. Science Olympiad has helped increase my interest in science.	2.00	1.79	1.67	1.66	1.40
14. I had fun in Science Olympiad this year.	1.25	1.42	1.42	1.32	1.40
15. I’ve learned a lot about science by participating in Science Olympiad.	2.00	1.61	1.58	1.66	1.60
16. Science Olympiad has helped increase my interest in science and technology careers.	2.25	2.07	1.75	1.63	2.00
17. Science Olympiad has increased my confidence in my ability to do science well.	1.75	1.89	1.67	1.58	1.60
18. I’ve been able to make new friends in Science Olympiad who share my interest in math and/or science.	2.25	2.28	2.00	2.53	2.00
19. I intend to participate in Science Olympiad next year.	2.00	1.63	1.78	1.79	1.60

1 – Responses 1 through 5 ranged from Strongly Agree to Strongly Disagree.