Post-Program Evaluation Report

National Science Foundation – Research Experiences for Undergraduates

Center for American Archeology

Long-term Perspectives on Human-River Dynamics at the Confluence of the Illinois and Mississippi Rivers

June 10-August 4, 2018

Evaluation provided by MEREA Consulting, LLC

EXECUTIVE SUMMARY

This report is self-contained, i.e., it includes appropriate background information from the Pre-Program Evaluation Report (submitted to CAA via email on 6/22/2018 and followed by a mailed print copy) , comparative data achieved by the pre-program and post-program surveys, interpretive commentary from the data analysis for use in preparing for the 2019 Center for American Archeology Research Experiences for Undergraduates (CAA REU) program, information on the student projects (Appendix A), the text of the email sent to instruct the students on completing the pre-program survey (Appendix B), and the text of the email sent to instruct the students on completing the post-program survey (Appendix C). There is a lot of valuable information in this report, including suggestions on ways to improve the program and highlights from the surveys that should be used to repeat the successes of the 2018 CAA REU. The staff and faculty of the CAA REU should be proud of the program's success and the hard work done.

PROGRAM BACKGROUND (As taken from the CAA website)

NSF-REU Site: Long-term Perspectives on Human-River Dynamics at the Confluence of the Illinois and Mississippi Rivers

Research Experiences for Undergraduates

Dates: June 10-August 4, 2018

The NSF-REU program at the CAA provides undergraduates with interdisciplinary research experiences in archaeology, paleoethnobotany, and ethnography. Students will engage in archaeological, archaeobotanical, and ethnographical research to investigate humans-plant interactions across the approximately 10,000 years of human occupation of the Illinois Valley. The archaeological and paleoenthobotanical components of the program will address human-plant interactions recorded in the archaeological record. Historic and modern human-plant interactions will be addressed through ethnographic and historic research among farming communities in the region. Students will complete a research project during the course of the program which will be presented to the public and scientific community.

Program

Weeks 1-4: Students learn archaeological and anthropology theory and methods, and will be introduced to the history, archaeology, and environment of the Illinois River Valley. Students participate in archaeological excavation and geophysical survey, laboratory work, and topical lectures during this portion of the program.

Weeks 5-7: Students focus on paleoethnobotany and ethnology, theory, methods, and data, including field and laboratory-based paleoethnobotanical activities and participant observation.

Week 8: During the final week, students focus on completion of their research projects, which culminates in presentation to the public. Students will also present their research at the 2018 Midwest Archaeological Conference, Notre Dame, IN (October 4-6, 2018).

Location

The 2018 REU program will be held at the Center for American Archeology in Kampsville, IL. Students will reside in CAA dormitories. Laboratory and classroom activities will be held at CAA facilities. Fieldwork will be

conducted at the Golden Eagle site (11GE7), the only precontact site with an enclosing embankment in the Illinois River Valley.

Program Faculty

Jane E. Buikstra, PhD (PI, CAA; Arizona State University)
Andrew Flachs, PhD (Purdue University)
Jason L. King, PhD (CAA)
Duncan McKinnon, PhD (University of Central Arkansas)
Natalie Mueller, PhD (Cornell University)
Joshua Raymond (Arizona State University)

EVALUATION DESIGN

A pre-program and post-program evaluation process was used to track self-reported changes in student skills and knowledge resulting from CAA REU program participation. The student evaluation format was designed to provide both formative and summative data. Most survey questions featured a range of answer options (Likert scale) while some questions asked for longer text responses. The questions listed below formed the basis for the evaluation:

- How did you find out about the CAA REU opportunity?
- What motivated you to apply for the CAA REU opportunity?
- What gains did you experience as a result of your most recent research experience?
- What personal gains did you make as a result of your most recent research experience?
- What skills did you develop as a result of your most recent research experience?
- What changes in attitude or behavior did you experience as a result of your most recent research experience?
- How satisfied were you with aspects of the research program?
- What would have made your research experience better?

EVALUATION PROCEDURES

Electronic surveys aligned to the evaluation questions were designed by MEREA Consulting with input from the Executive Director at CAA. The pre-program survey had a seven-day window for completion May 24 through May 31, 2018. The post-program survey had an eight-day window for completion August 4 through August 11, 2018. The surveys were hosted online at the SALG (Student Assessment of their Learning Goals) site. Links and directions to the surveys were emailed to the eight program students. Reminder emails were sent to non-responding students prior to the close of the surveys. Seven of eight students completed each survey, for a response rate of 87%. Data from the pre-program survey was downloaded on June 11, 2018. Data from the post-program survey was downloaded on August 18, 2018.

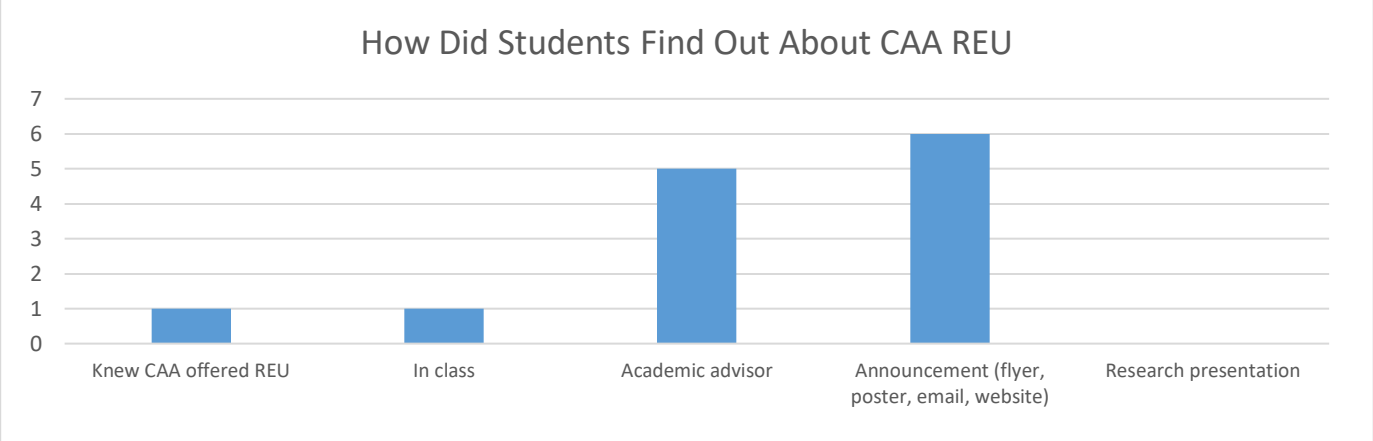
Note: two separate students missed out on completing the surveys (one on each survey).

STUDENT EVALUATION DATA

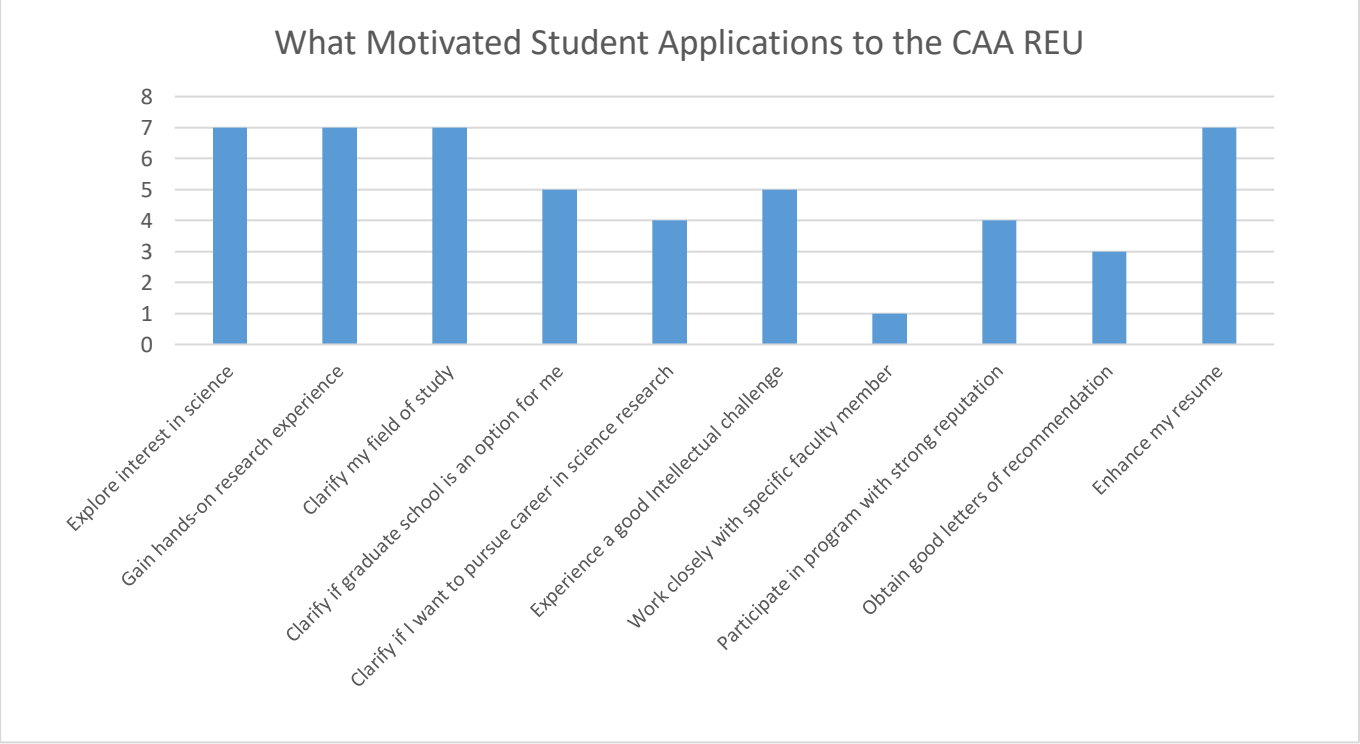
Marketing the 2019 CAA REU

The question "How did you find out about the Center for American Archeology's REU opportunity?" (graphed below) was only asked on the pre-program survey and was intended to provide information to CAA on the most

effective marketing strategy for program applications for the REU. As five of seven students responded that they had received information from their academic advisor and six of seven students answered that they had received information via an announcement, MEREA recommends efforts be put into designing and distributing high-quality program promotional material directly to archaeology professors at universities in time to receive a substantial number of quality applicants for the 2019 CAA REU program.

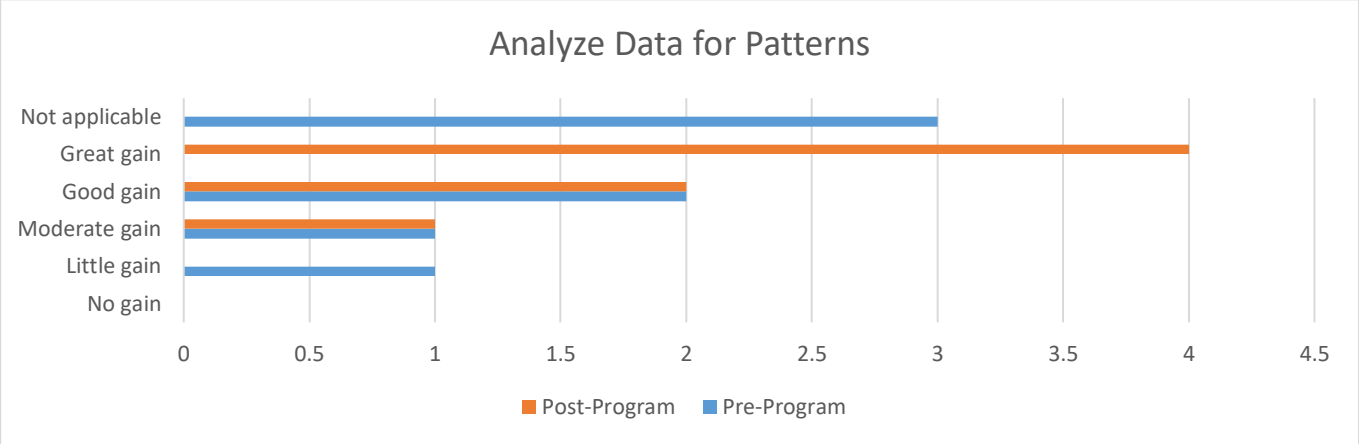


The question "What motivated you to apply for CAA's REU program?" (graphed below) was only asked on the pre-program survey and was intended to provide information to CAA on the reasons students chose the CAA REU program over other summer experiences. The motivation for students to apply to the Center for American Archeology ran from exploring interests in science and gaining hands-on research experience to clarifying field of study and enhancing resumes. These areas, therefore, should be highlighted in the high-quality program promotional materials developed for the 2019 CAA REU. Although working closely with a specific faculty member had only one response, this could be greatly enhanced in 2019, if CAA choses faculty members early and highlights those faculty members in the marketing materials.

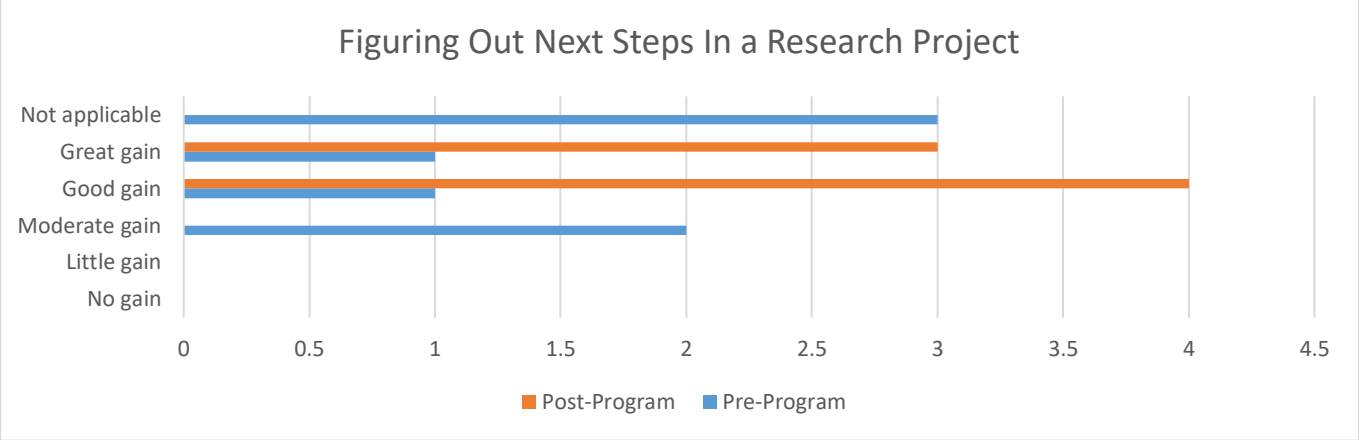


Assessing Gains in Working Like a Scientist

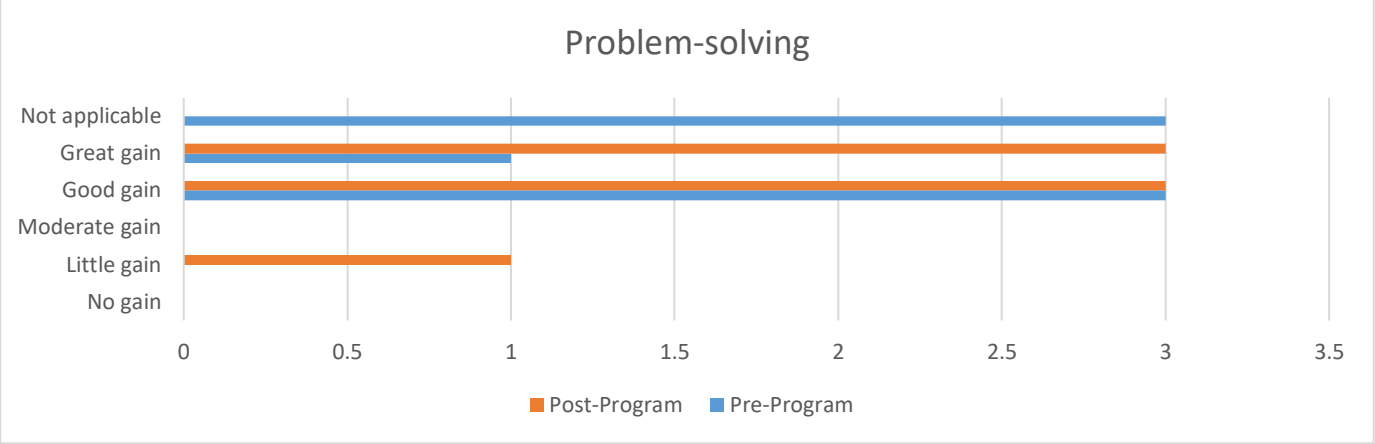
The survey questions graphed below assess gains in thinking and working like a scientist, i.e., applying knowledge to research work. Students were asked "How much did you gain in the following areas as a result of your most recent research experience?"



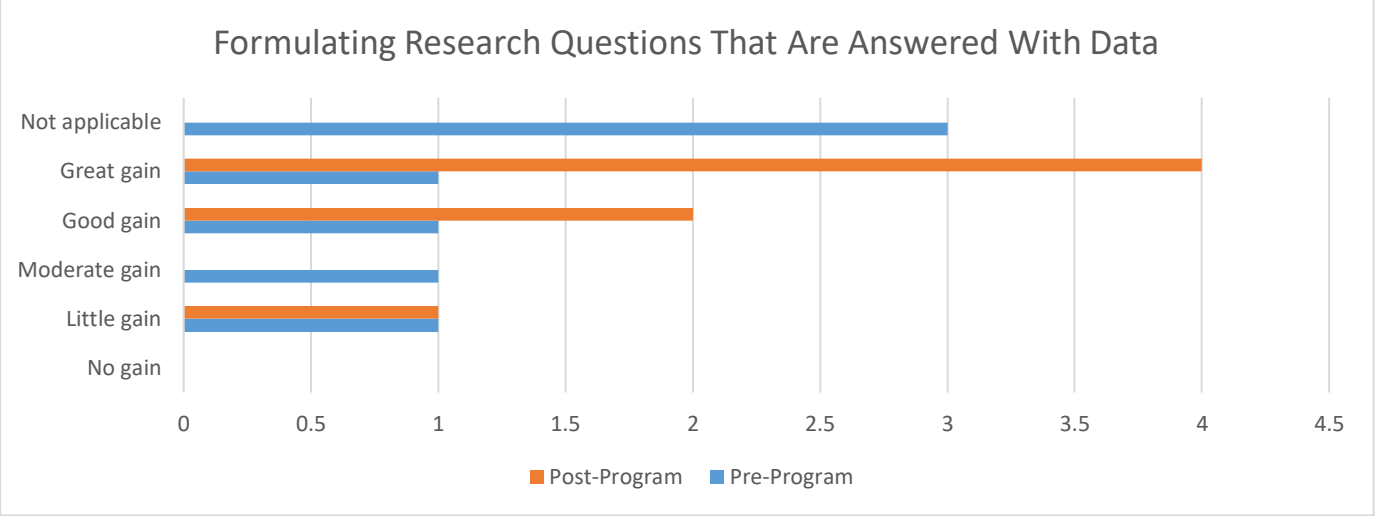
Interpretation: 57% of the students experienced "great gain" in analyzing data for patterns.



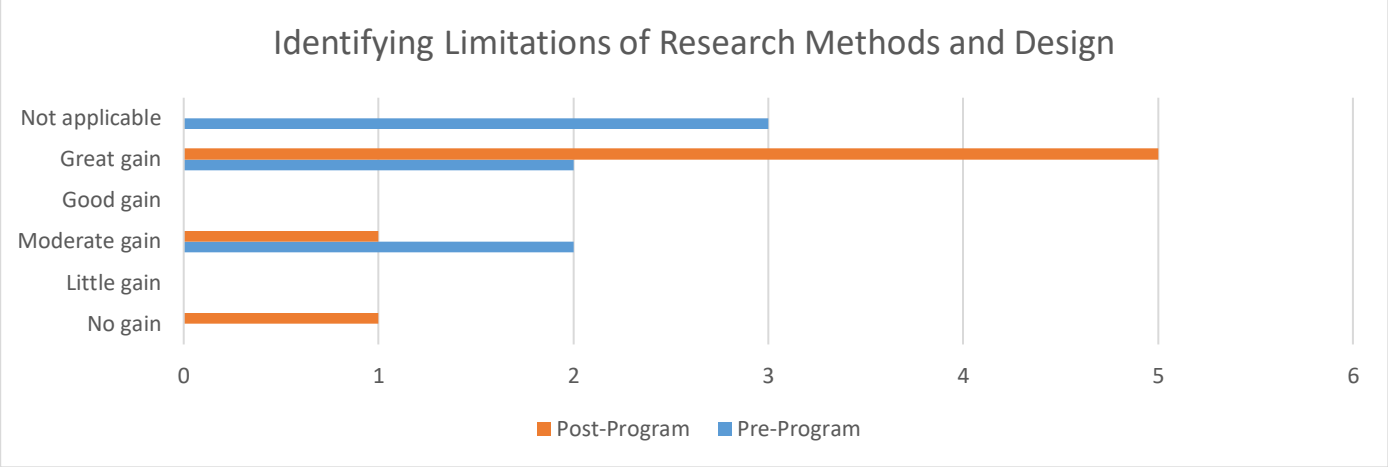
Interpretation: 71% of the students experienced an increase of "good or great gain" in figuring out next steps in a research project.



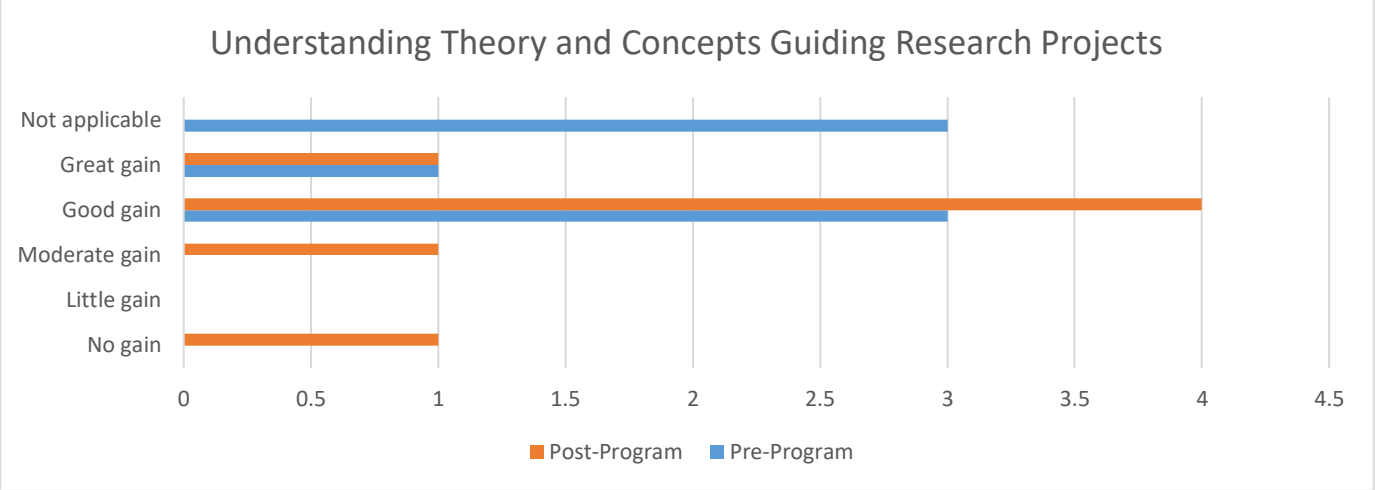
Interpretation: 29% of the students experienced an increase of "great gain" in problem-solving.



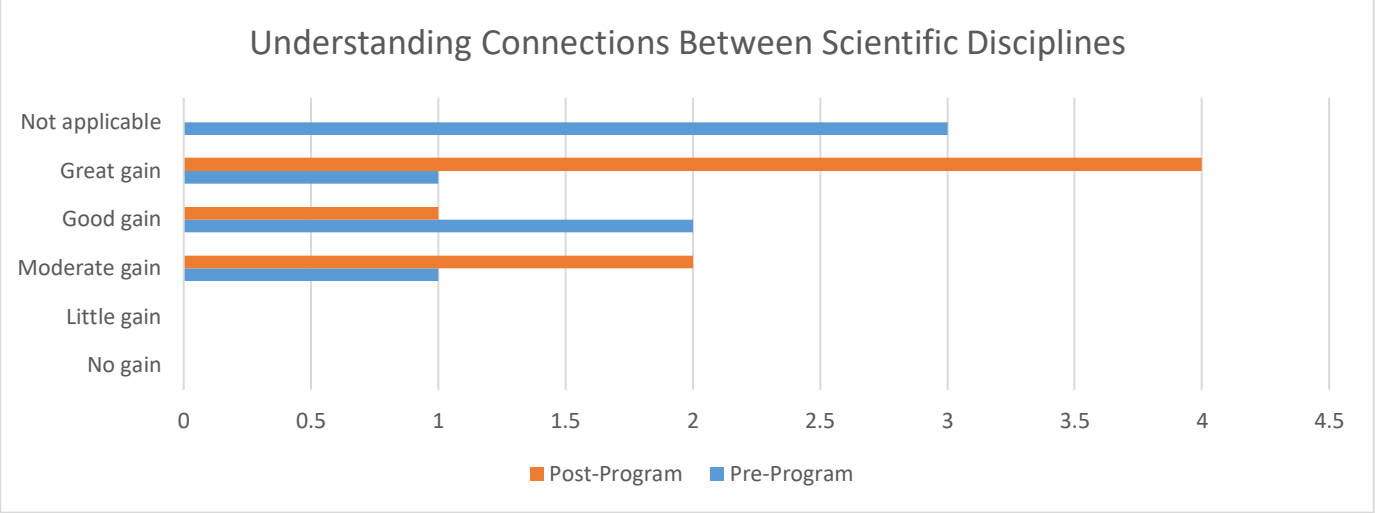
Interpretation: 57% of the students experienced an increase of "good or great gain" in formulating research questions that are answered with data.



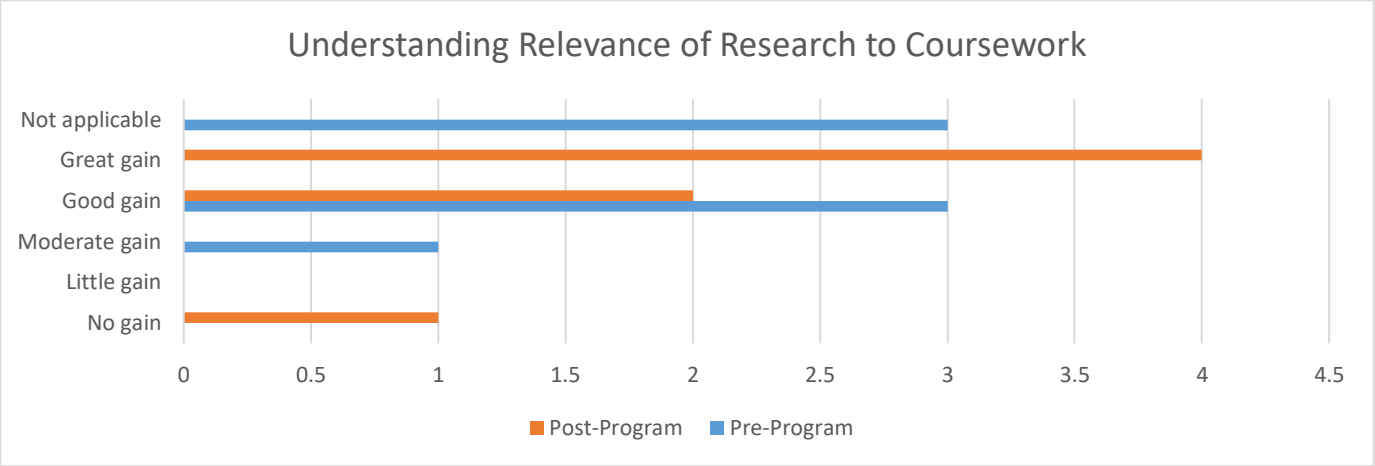
Interpretation: 43% of the students experienced an increase of "great gain" in identifying limitations of research methods and design.



Interpretation: 29% of the students experienced an increase of "moderate or good gain" in understanding theory and concepts guiding research projects.



Interpretation: 43% of the students experienced an increase of "great gain" in understanding connections between scientific disciplines.

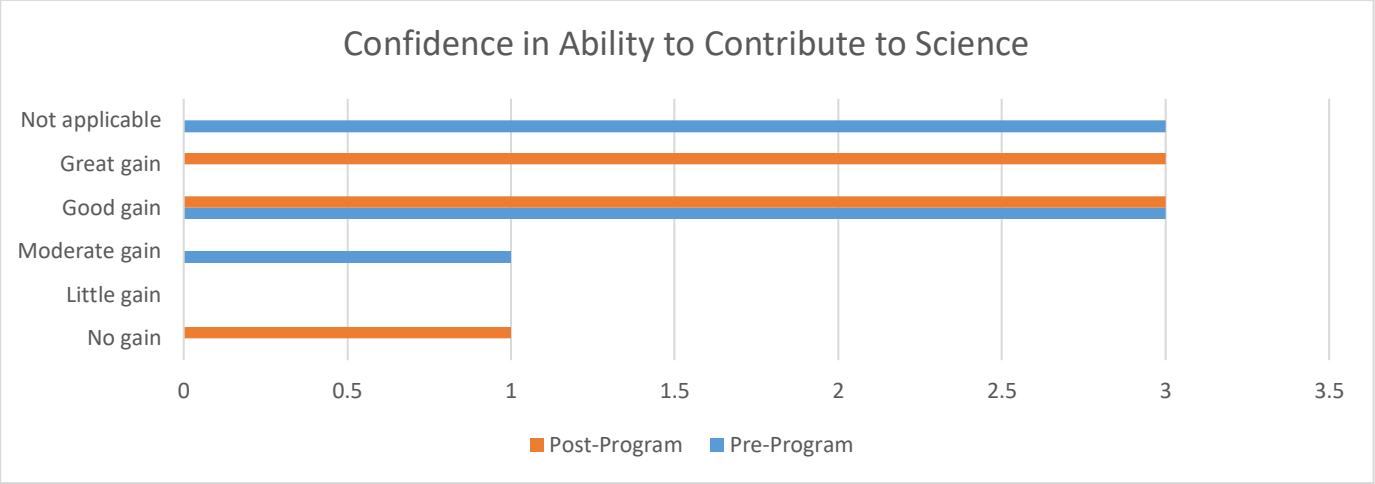


Interpretation: 57% of the students experienced "great gain" in understanding relevance of research to coursework.

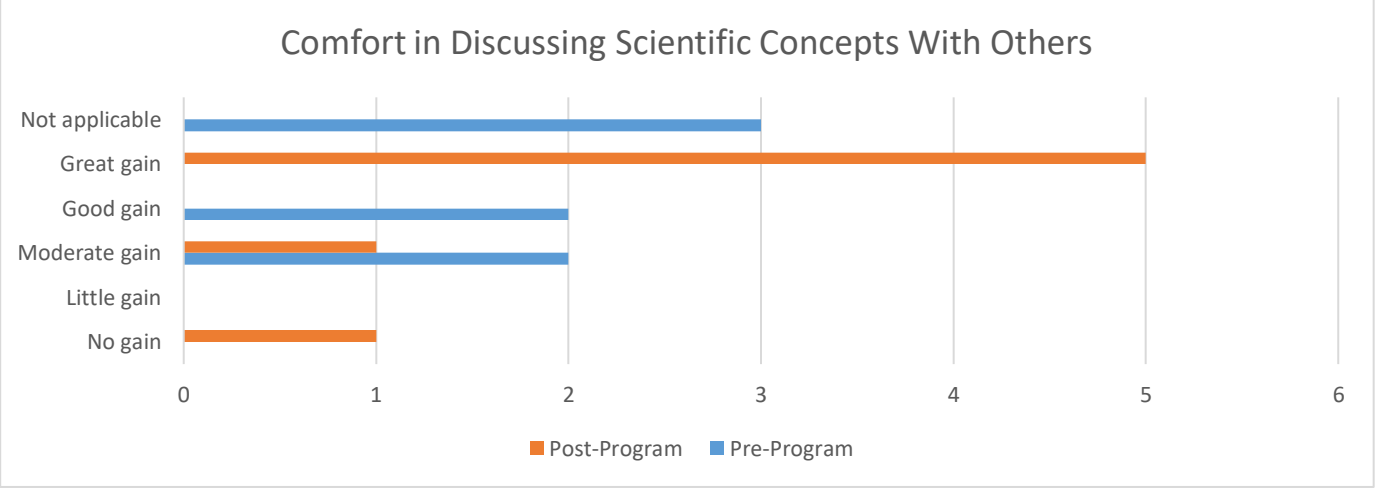
Section Comments and Ideas for Moving Forward: There was frequently one response of little or no gain. The staff and faculty of the CAA REU must determine if this reflects one disgruntled student or if there are legitimate problems in the design and delivery of the program. The time to make curriculum changes to the 2019 program is now. Overall, students reported that they had experienced large increases in their understanding of how to work as a scientist. Students in the CAA REU program showed gains in several important components of conducting research, like analyzing data for patterns and identifying limitations of research methods and design. Additionally, they showed gains in problem-solving and figuring out the next steps in a research project. These are real highlights and the staff and faculty of the CAA REU can be proud of the success of their program in this respect.

Personal Gains Made

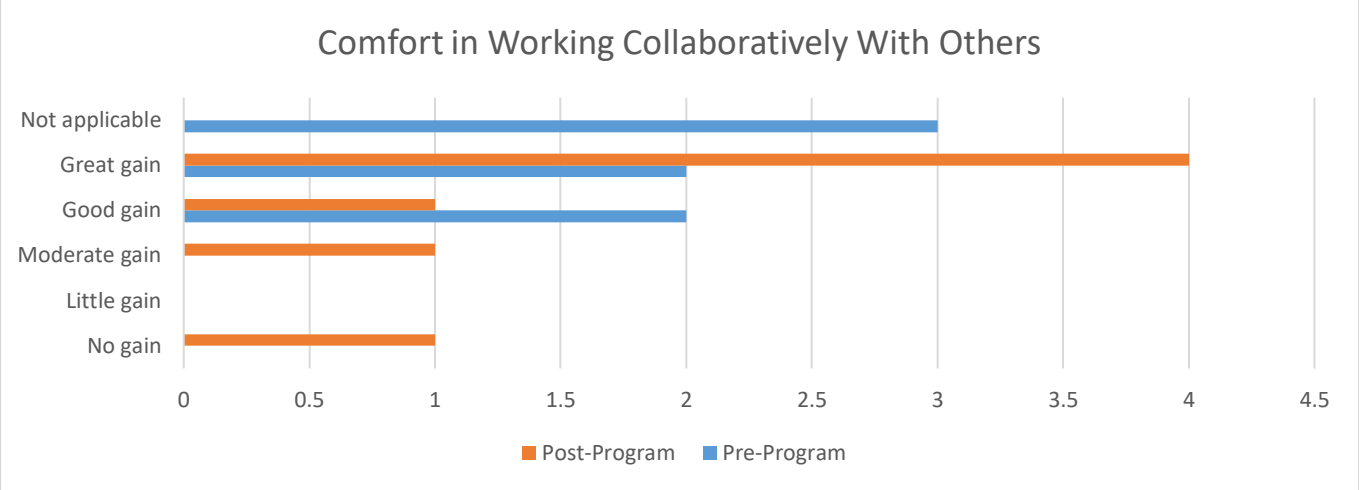
The survey questions in this section, graphed below, regard the personal gains made related to research work. Students were asked "How much did you gain in the following areas as a result of your most recent research experience?"



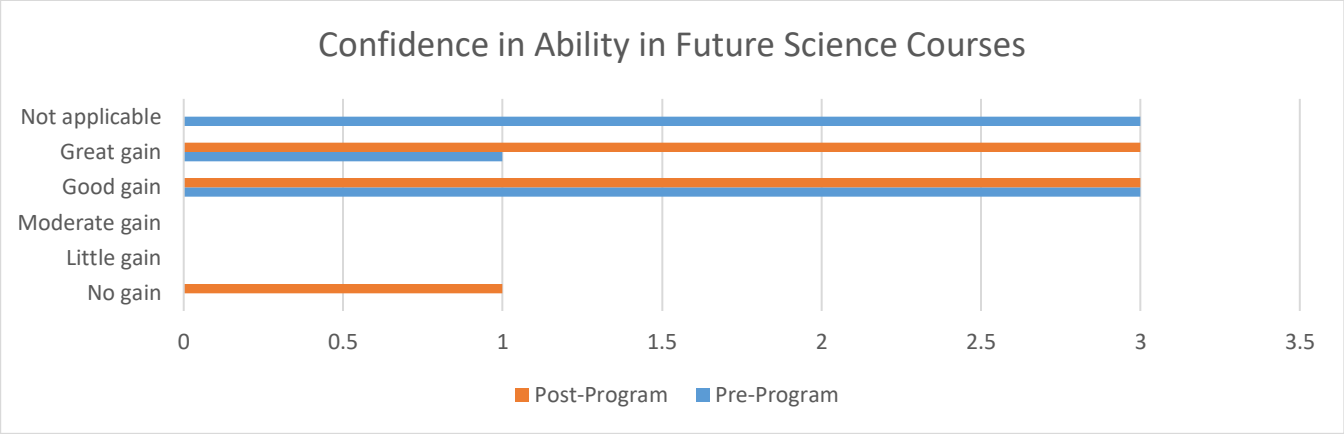
Interpretation: 43% of the students experienced "great gain" in their confidence in ability to contribute to science.



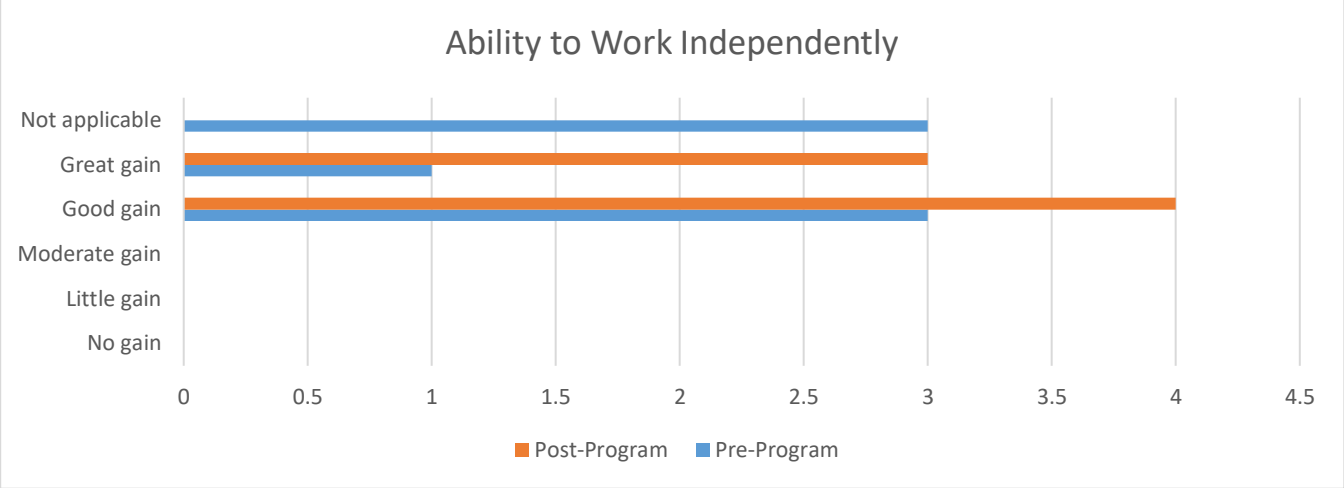
Interpretation: 43% of the students experienced "great gain" in their comfort in discussing scientific concepts with others.



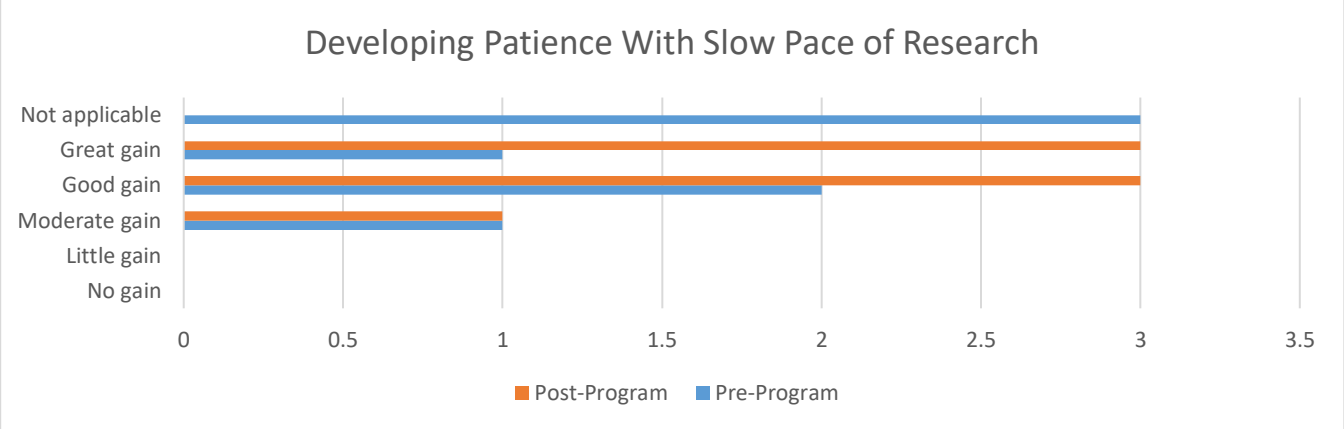
Interpretation: 29% of the students experienced an increase of "great gain" in their comfort to work collaboratively with others.



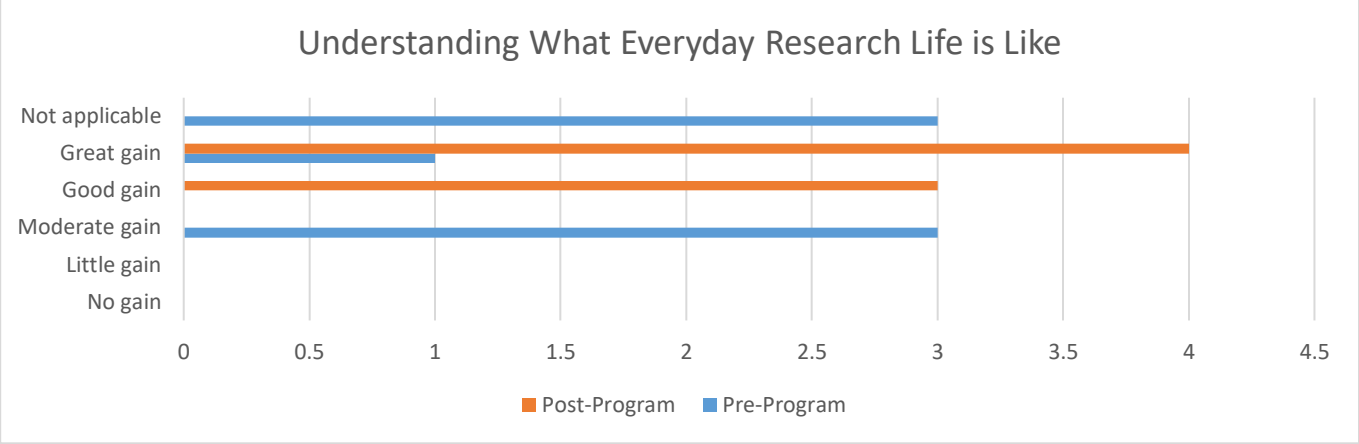
Interpretation: 29% of the students experienced an increase of "great gain" in their confidence in ability in future science courses.



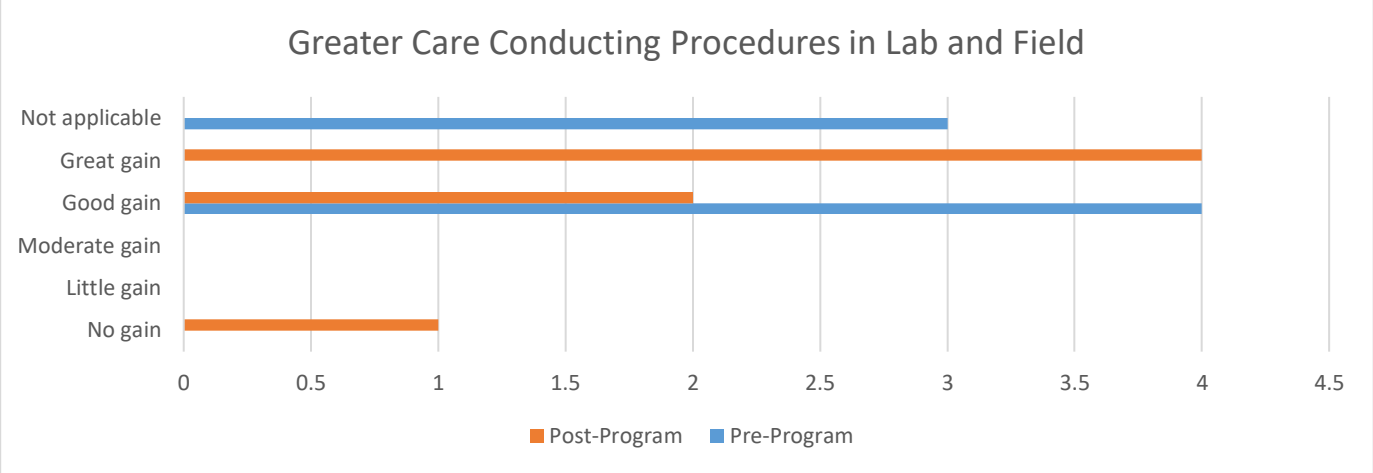
Interpretation: 43% of the students experienced an increase of "good or great gain" in their ability to work independently.



Interpretation: 43% of the students experienced an increase of "good or great gain" in developing patience with slow pace of research.



Interpretation: 86% of the students experienced an increase of "good or great gain" in understanding the true nature of scientific research.

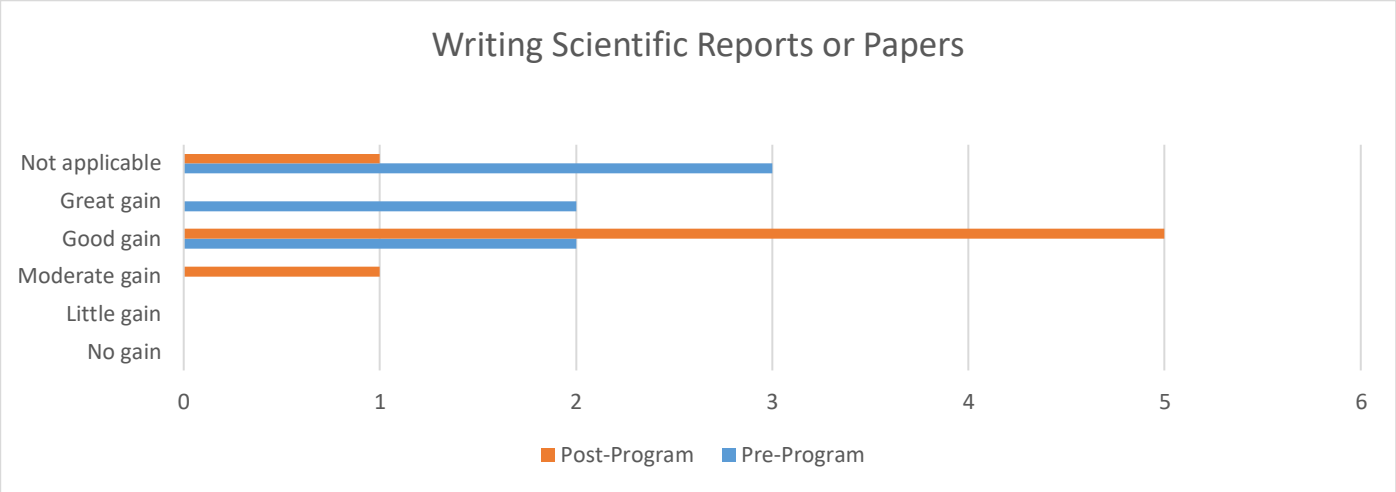


Interpretation: 57% of the students experienced "great gain" in taking greater care conducting procedures in lab and field.

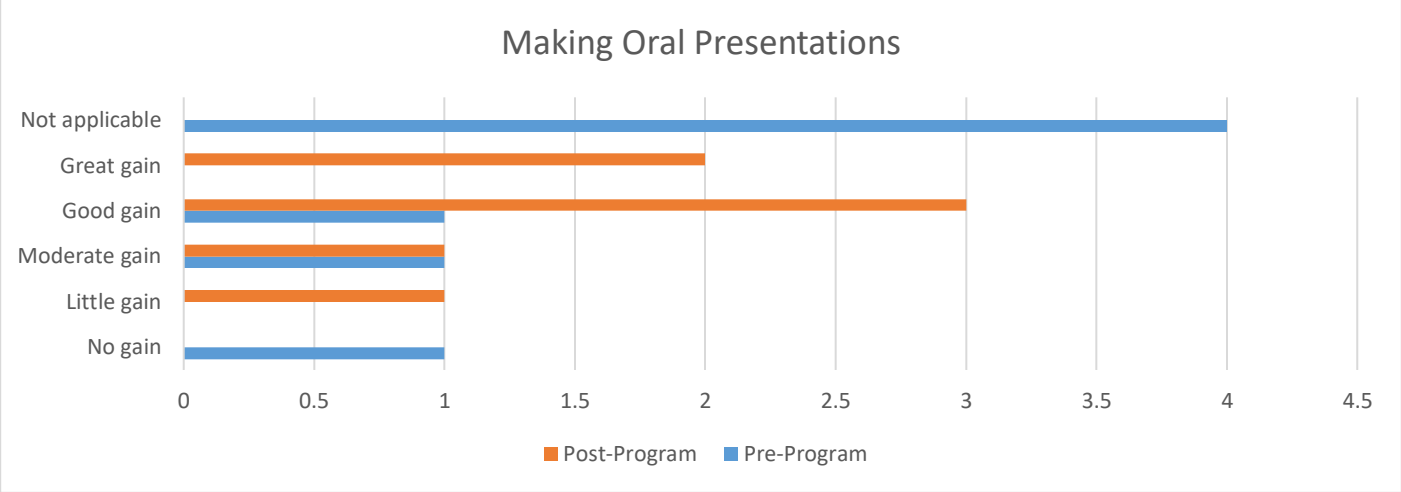
Section Comments and Ideas for Moving Forward: There was again one response of little or no gain on several questions (see comments above on ideas for mitigation). Overall, students reported they had experienced large increases in their personal gains regarding research during the REU program. According to the National Science Foundation website, the REU program "is a major contributor to the NSF goal of developing a diverse, internationally competitive, and globally-engaged science and engineering workforce." Therefore, the fact that students in the CAA REU program experienced "great gain" in their confidence in their ability to contribute to science and in their comfort in discussing scientific concepts with others is a notable achievement. Their "good or great gain" in their ability to work independently, thus indicating increased confidence in conducting research, and in understanding what everyday research life is like indicate the students will be able to make informed decisions on whether or not they wish to move forward in science in their studies and their careers.

Gains in Skills

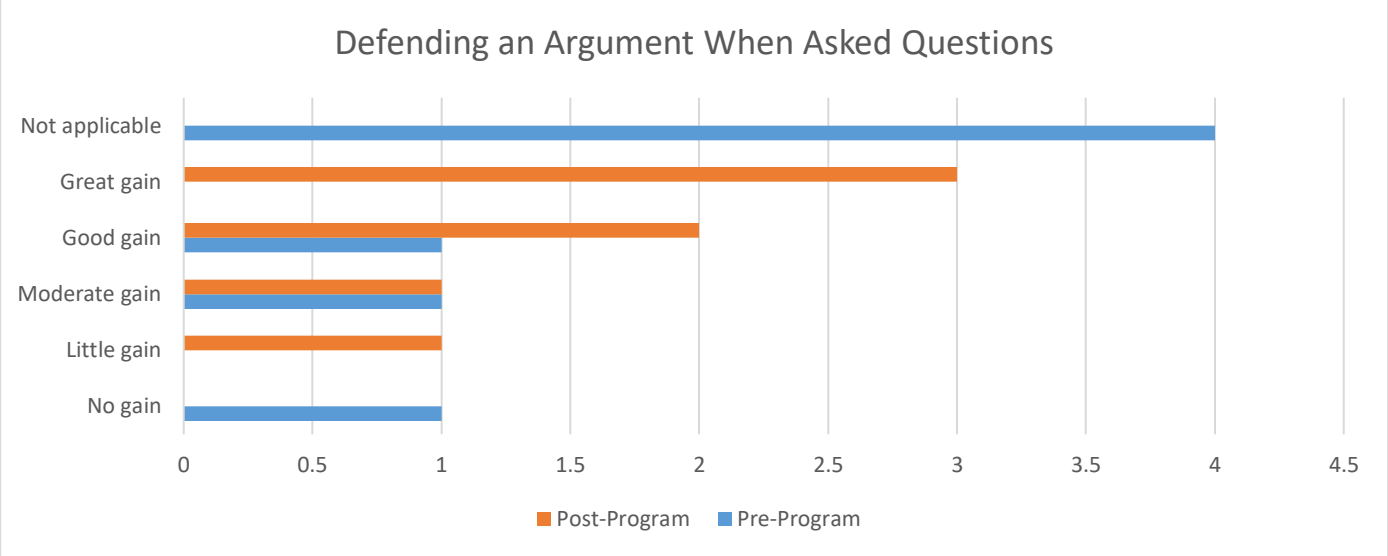
The survey questions in this section, graphed below, regard gains in skills. Students were asked "How much did you gain in the following areas as a result of your most recent research experience?"



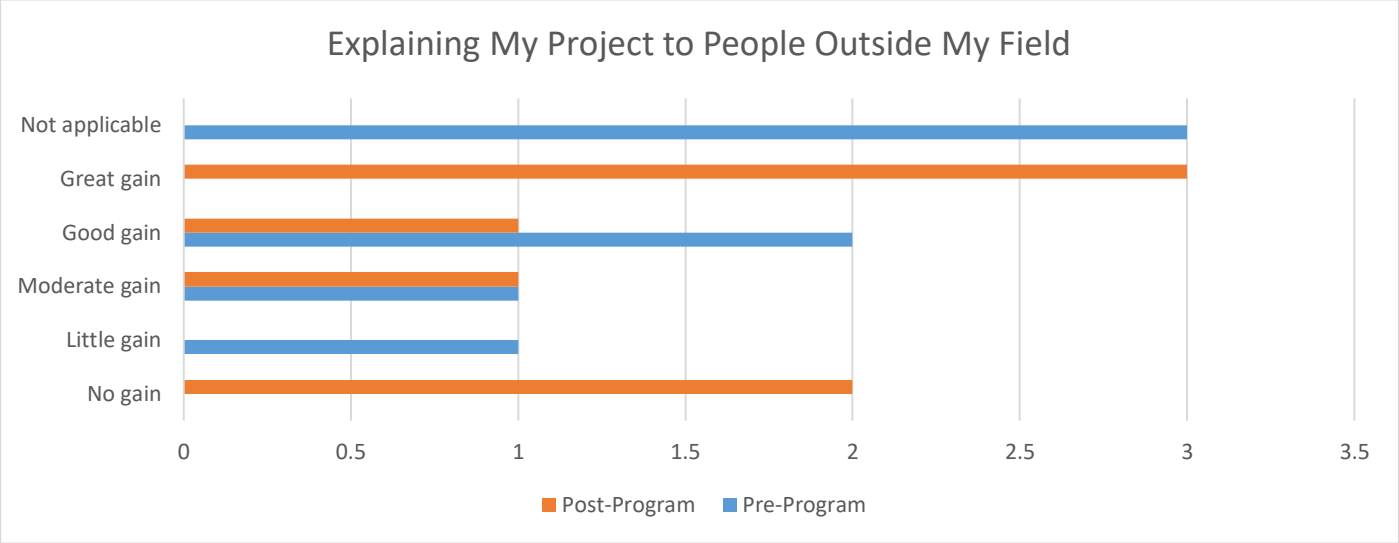
Interpretation: 57% of the students experienced an increase of "moderate or good gain" in writing scientific reports or papers.



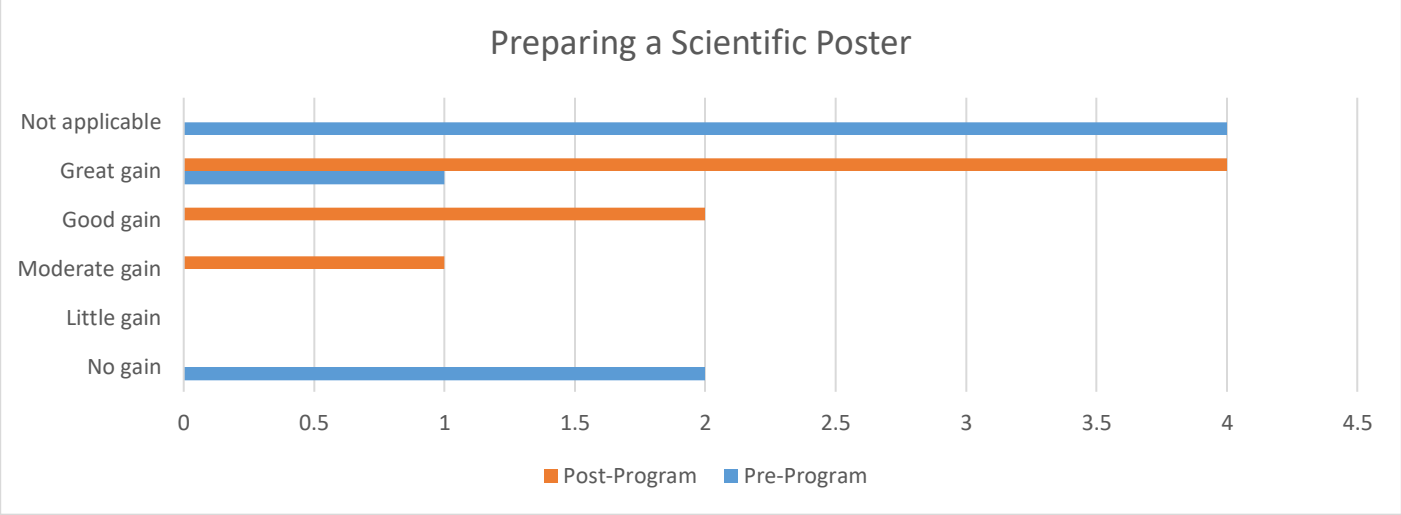
Interpretation: 57% of the students experienced an increase of "good or great gain" in making oral presentations.



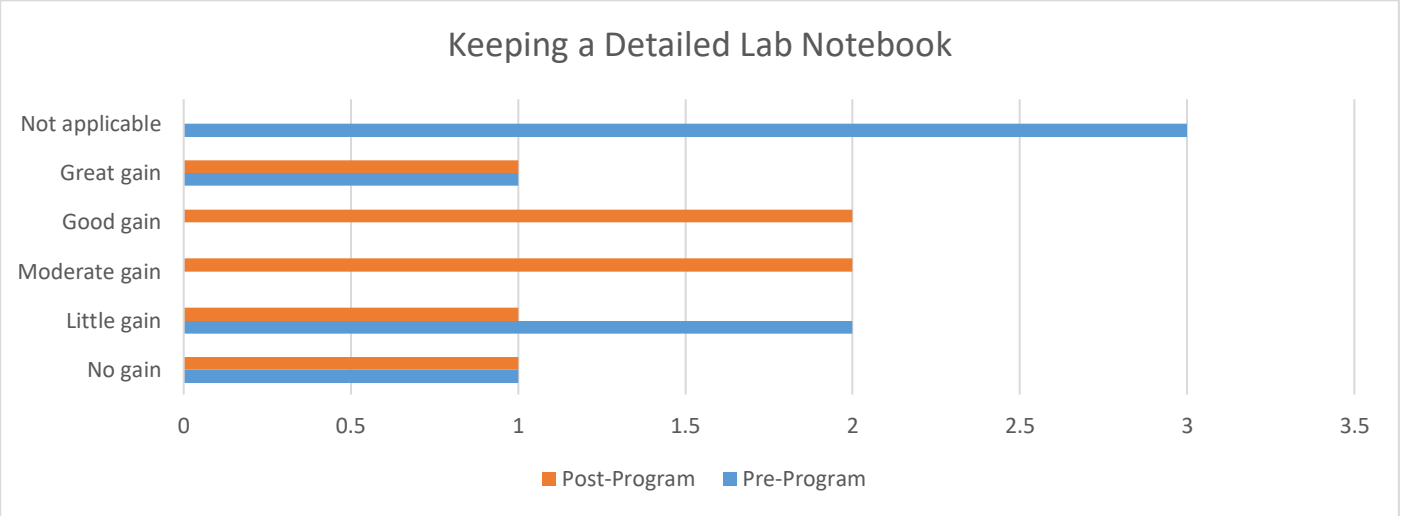
Interpretation: 57% of the students experienced an increase of "good or great gain" in defending an argument when asked questions.



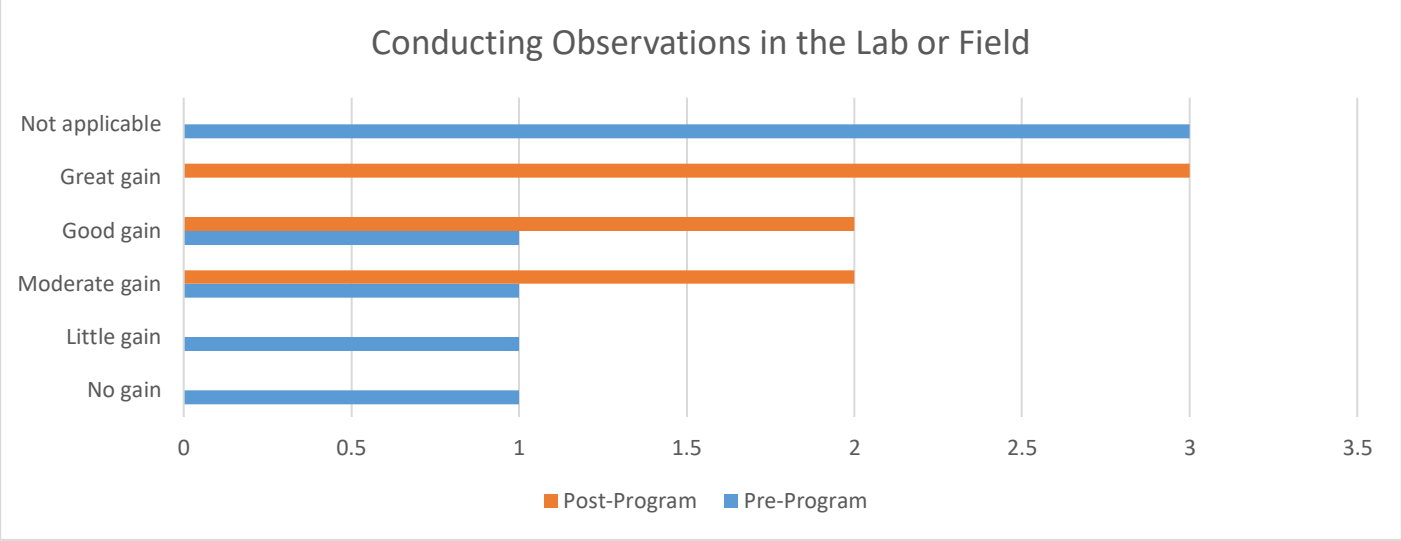
Interpretation: 29% of the students experienced a decrease of "no gain" in explaining their project to people outside their field, while 43% of the students experienced an increase of "great gain."



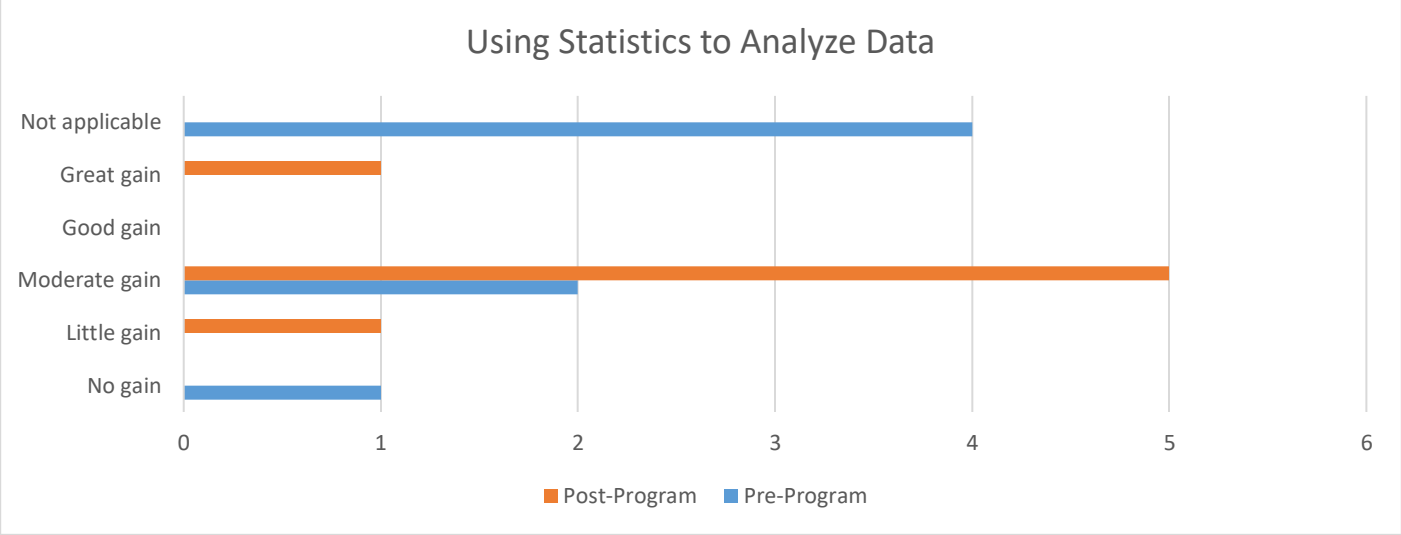
Interpretation: 86% of the students experienced an increase of "moderate, good, or great gain" in preparing a scientific poster.



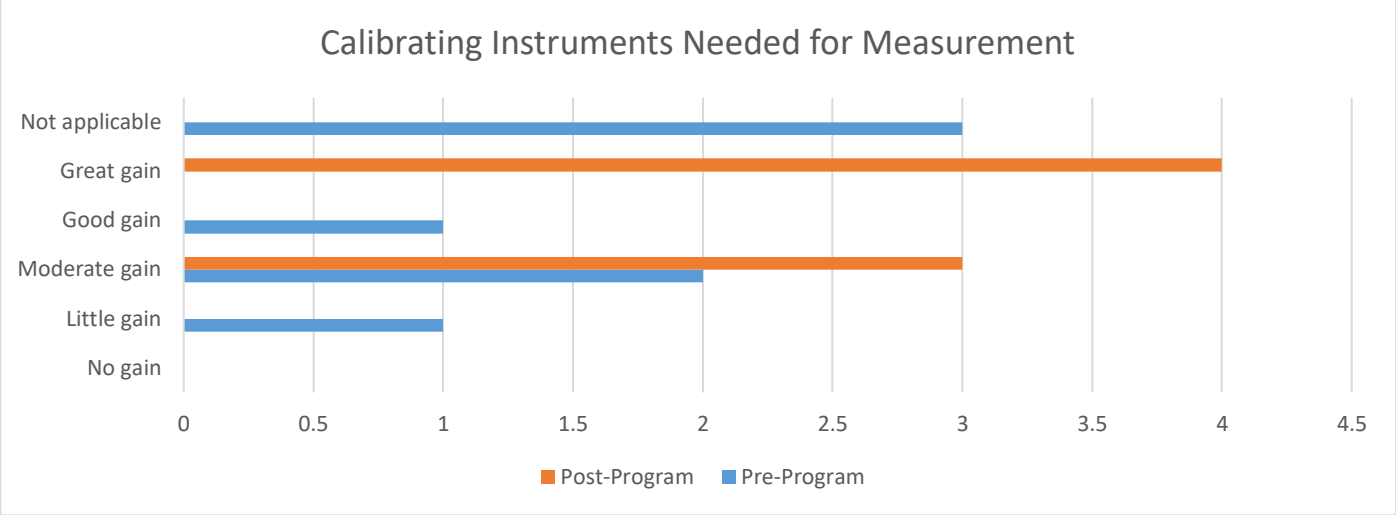
Interpretation: 57% of the students experienced an increase of "moderate or great gain" in keeping a detailed lab notebook.



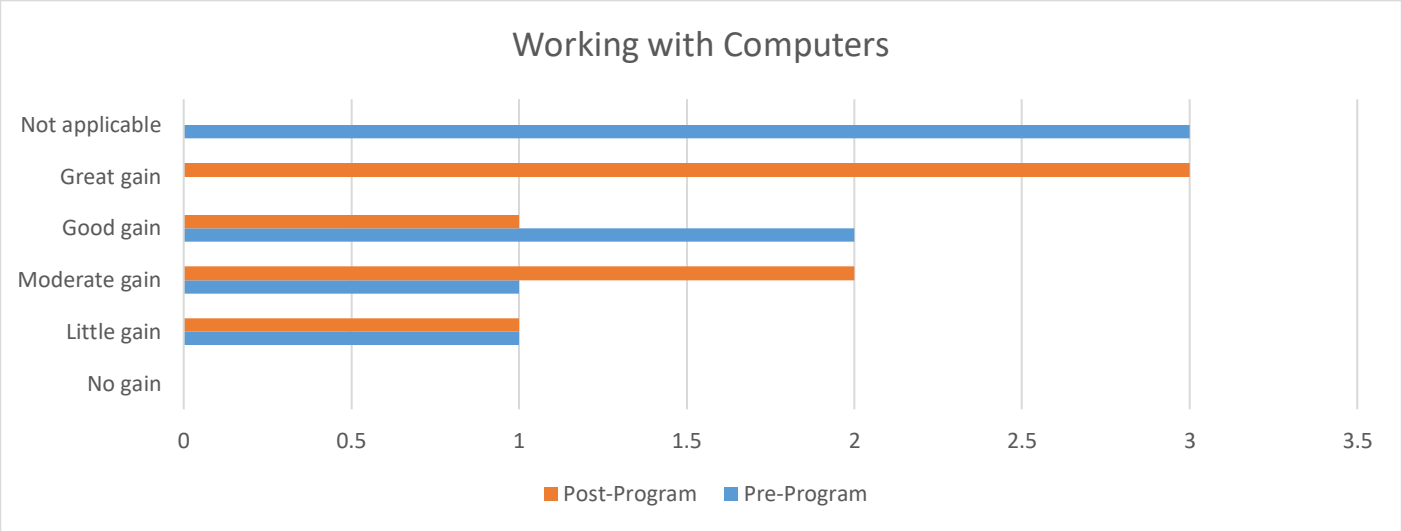
Interpretation: 71% of the students experienced an increase of "moderate, good, or great gain" in conducting observations in the lab or field.



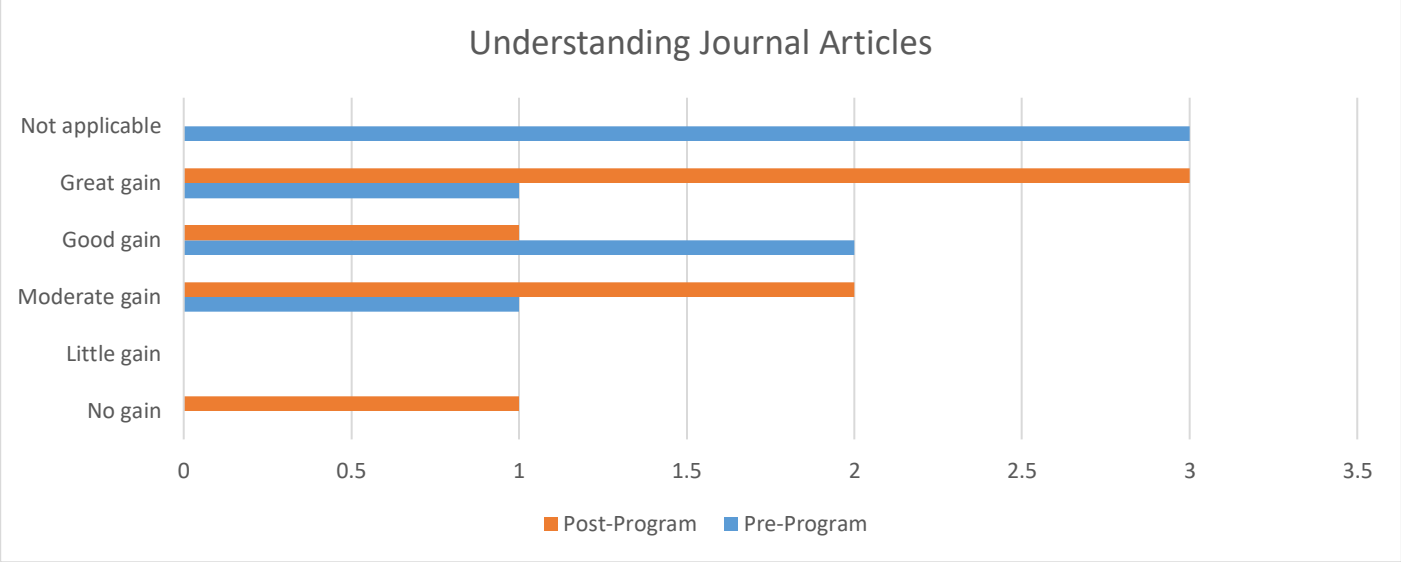
Interpretation: 57% of the students experienced an increase of "moderate gain" or "great gain" in using statistics to analyze data.



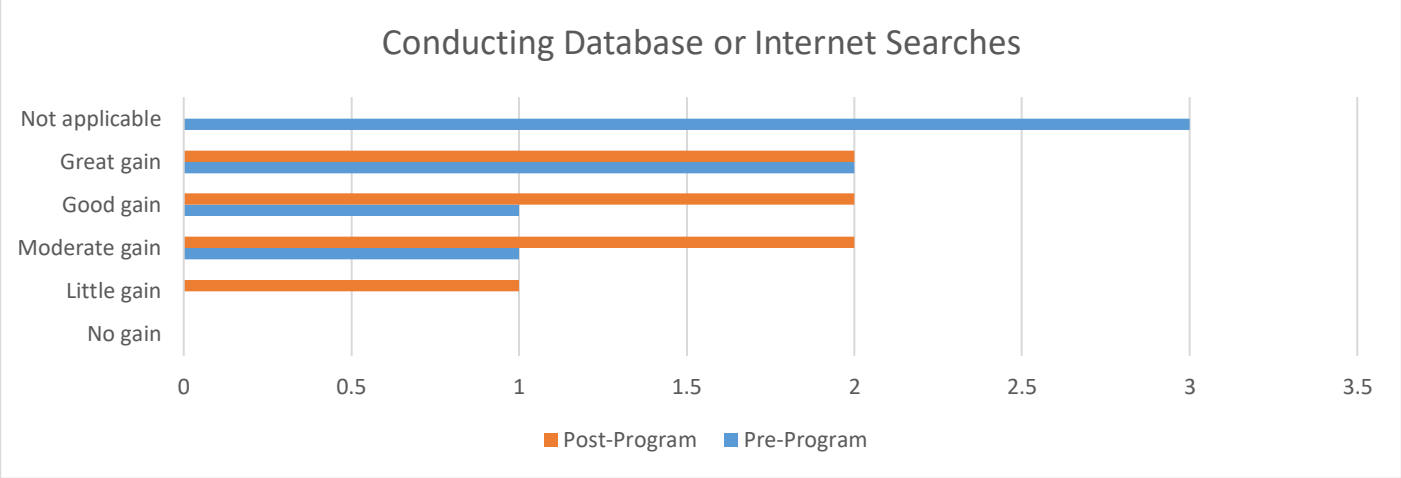
Interpretation: 57% of the students experienced an increase of "great gain" in calibrating instruments needed for measurement.



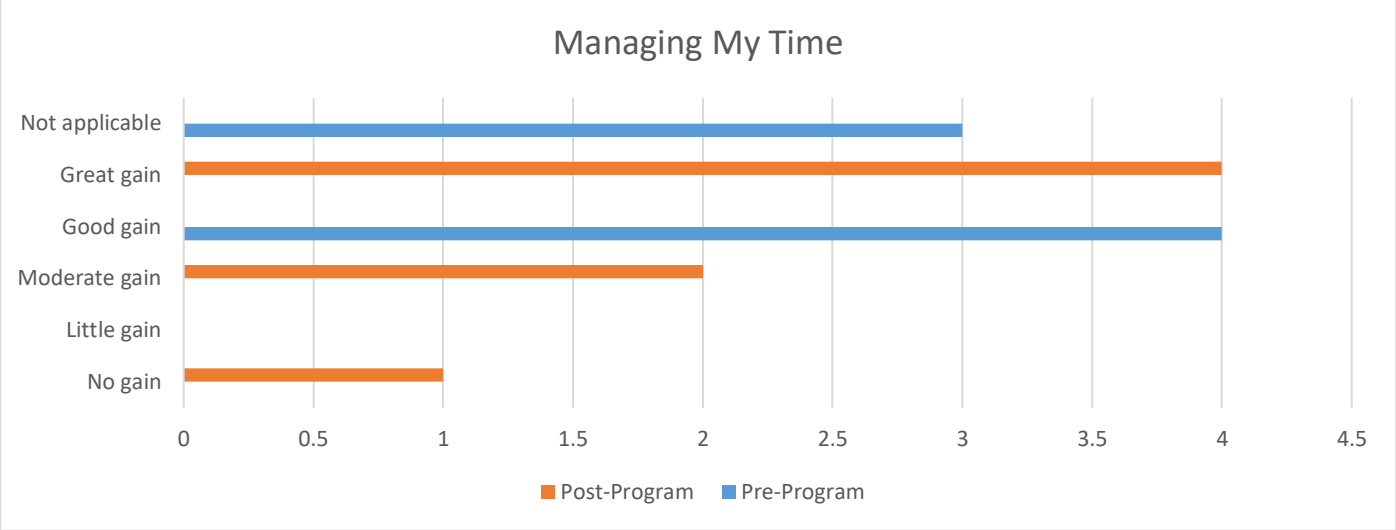
Interpretation: 43% of the students experienced an increase of "great gain" in working with computers.



Interpretation: 29% of the students experienced an increase of "great gain" in understanding journal articles.



Interpretation: 43% of the students experienced an increase of "little, moderate, or good gain" in conducting database or internet searches.

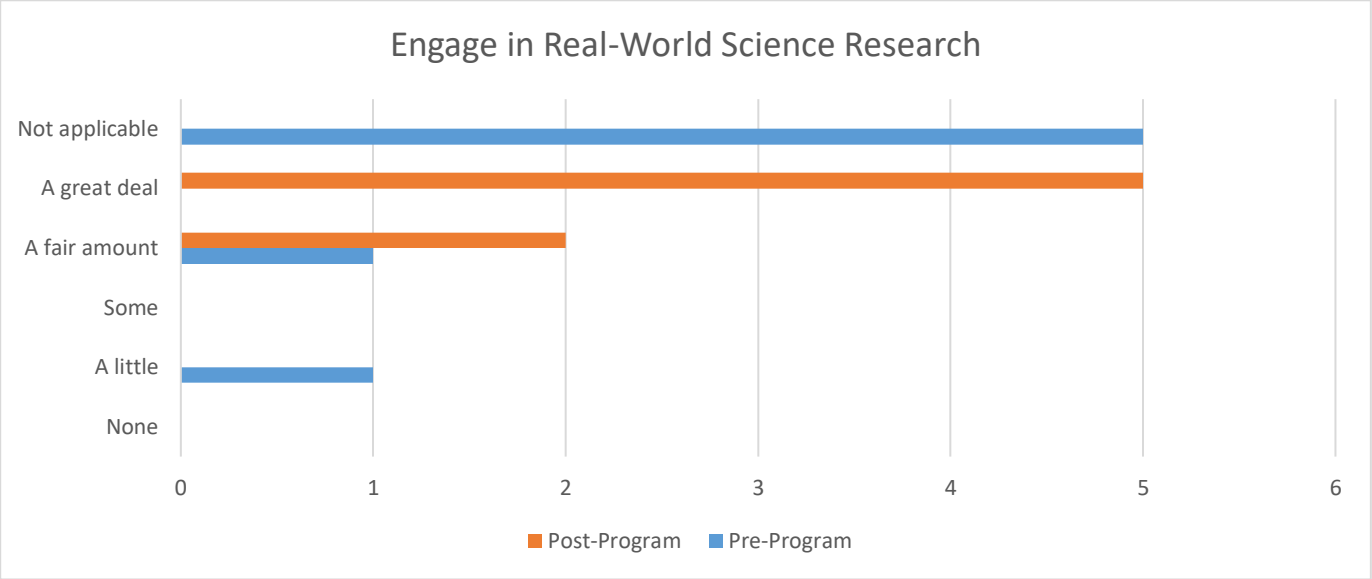


Interpretation: 43% of the students indicated that they experienced "great gain" in time management as a result of the CAA REU.

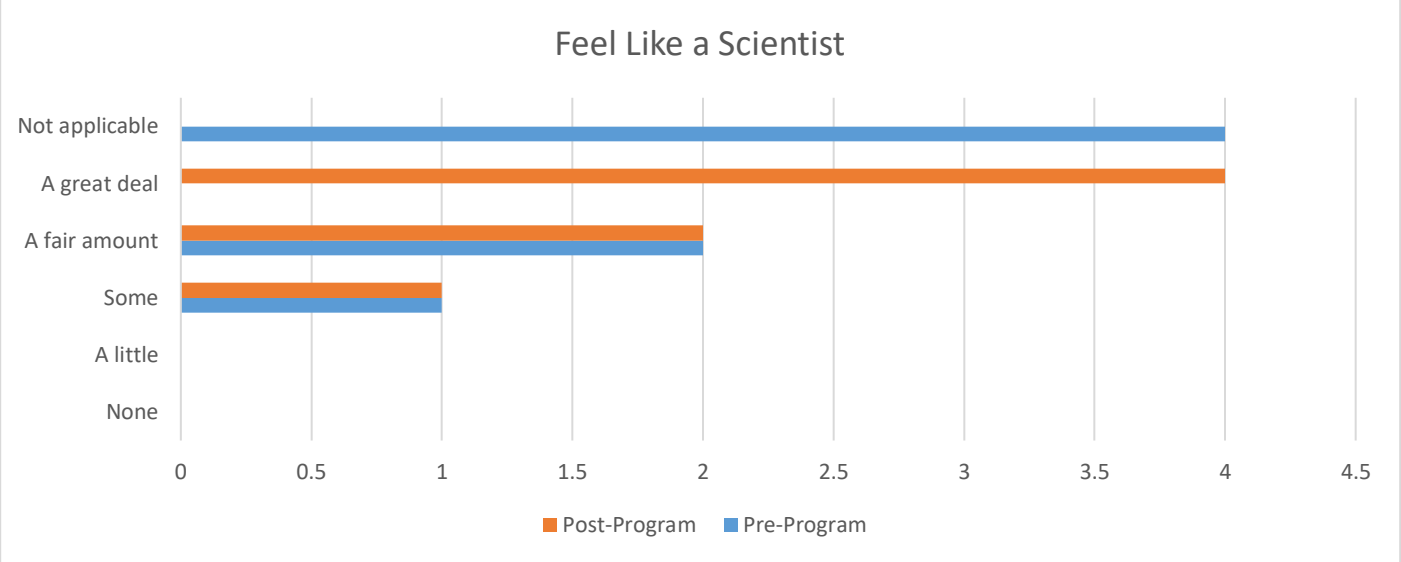
Section Comments and Ideas for Moving Forward: There were three areas that the staff and faculty of the CAA REU may wish to add to or enhance in the 2019 program: keeping a detailed lab notebook, using statistics to analyze data, and being able to understand academic writing. All are crucial skills for students wishing to continue in the academy. Overall, the students reported they had experienced gains in the skills required for conducting research. We believe the staff and faculty of the CAA REU were successful in helping students to realize these gains in skills, and this achievement should be highlighted in marketing materials for the 2019 program.

Changes in Attitudes and Behaviors

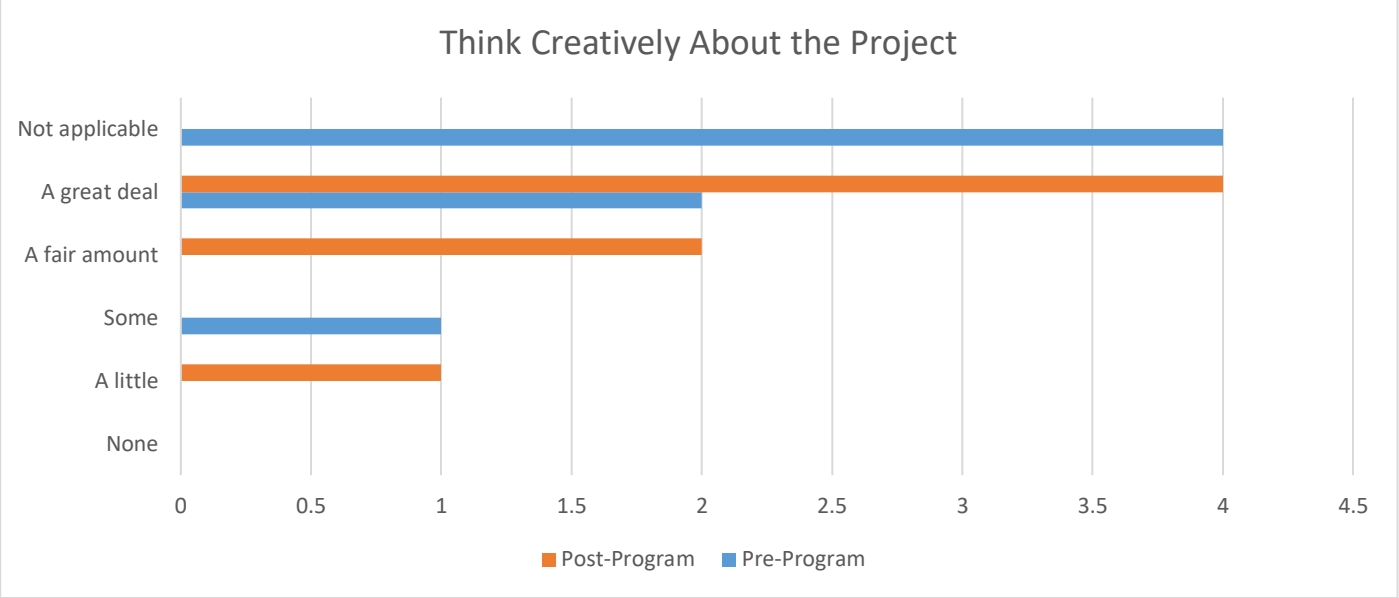
The questions in this section, graphed below, assess changes in attitudes or behaviors students saw as a result of the REU experience. Students were asked "During your research experience how much did you:"



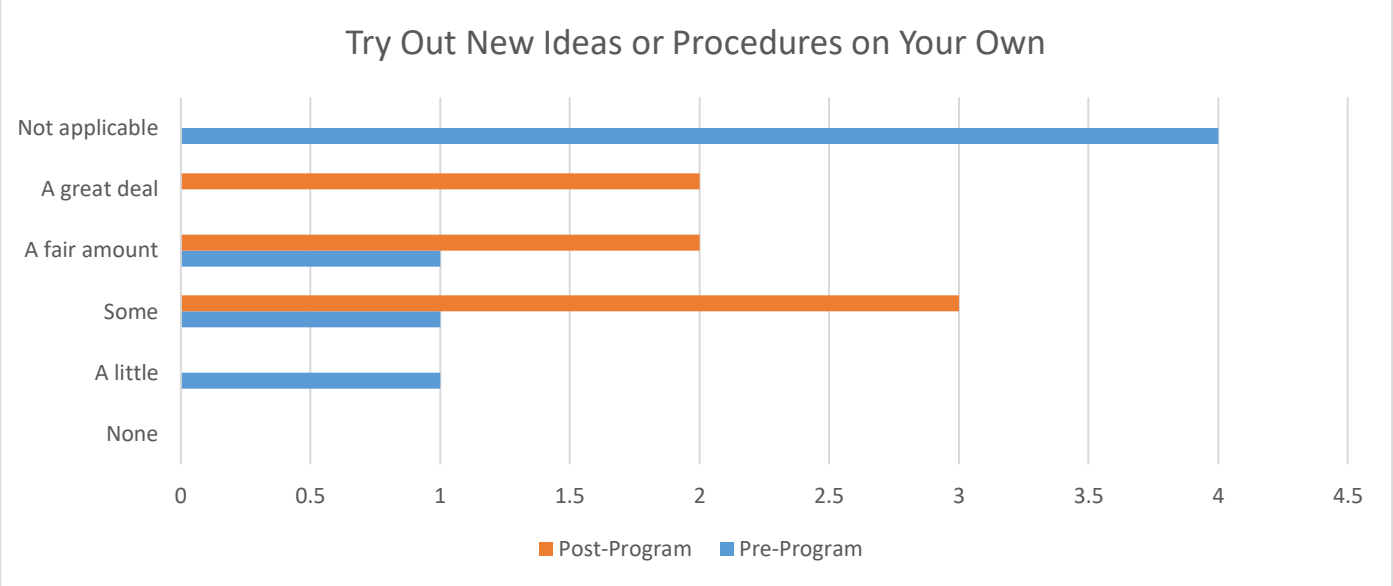
Interpretation: 86% of the students experienced an increase of "a fair amount or a great deal" in changes in their attitudes or behaviors as a researcher engaged in real-world science research.



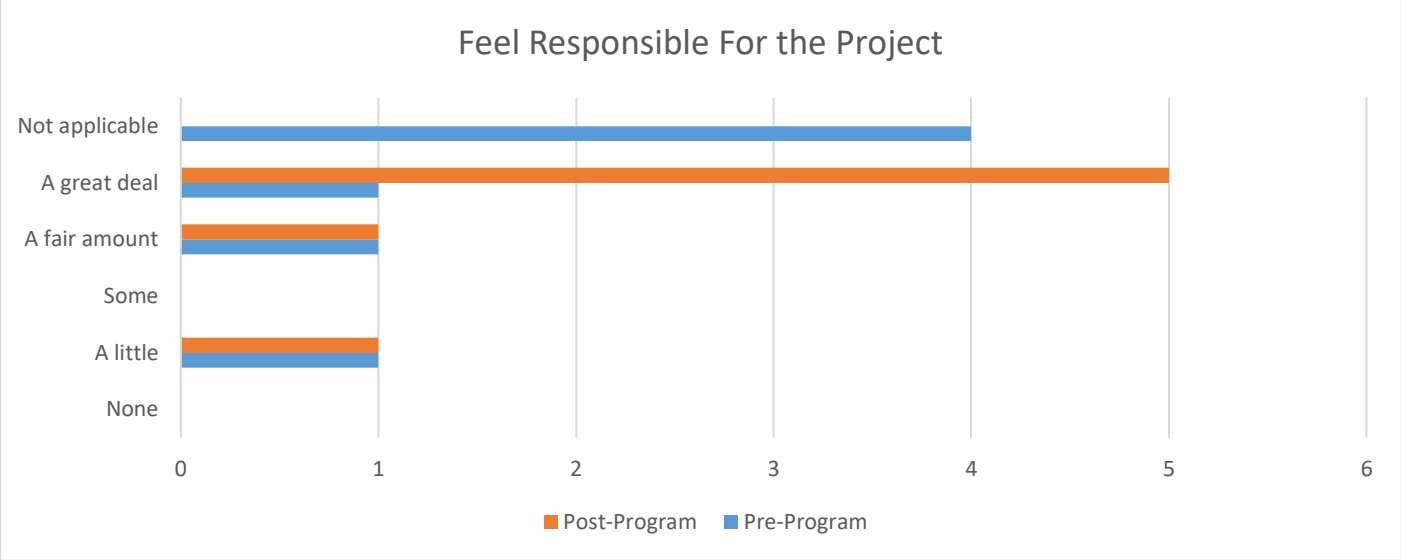
Interpretation: 57% of the students experienced "a great deal" of change in their attitudes or behaviors in terms of feeling like a scientist.



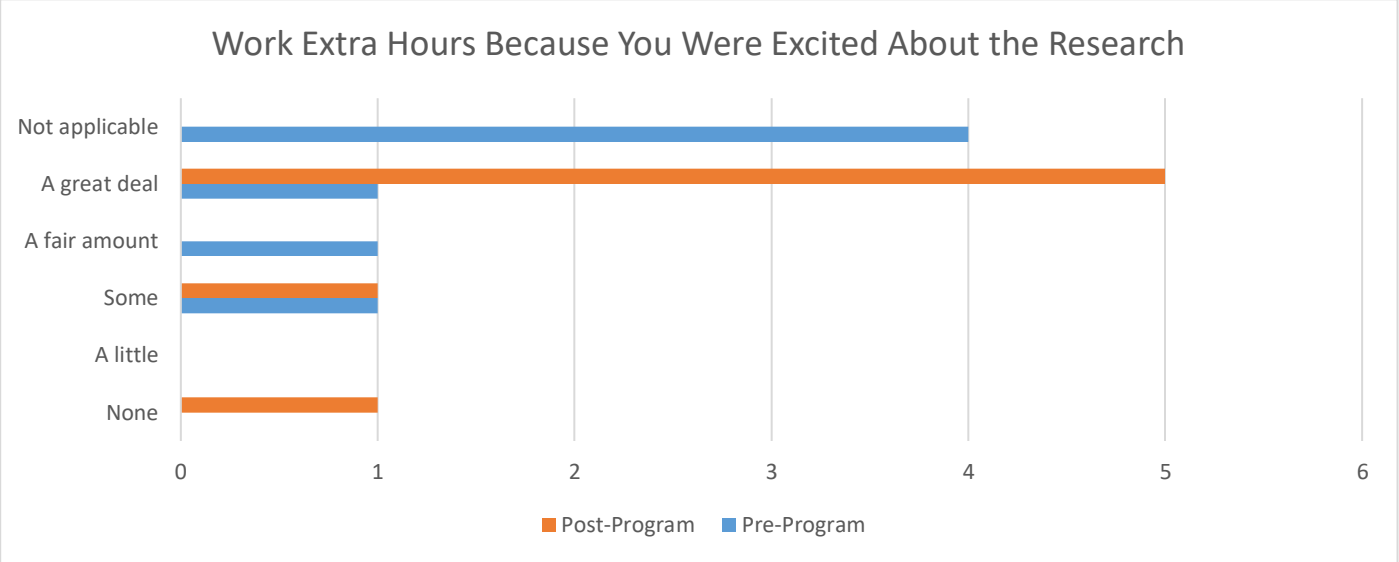
Interpretation: 57% of the students experienced an increase of "a fair amount or a great deal" in changes in their attitudes or behaviors as a researcher thinking creatively about the project.



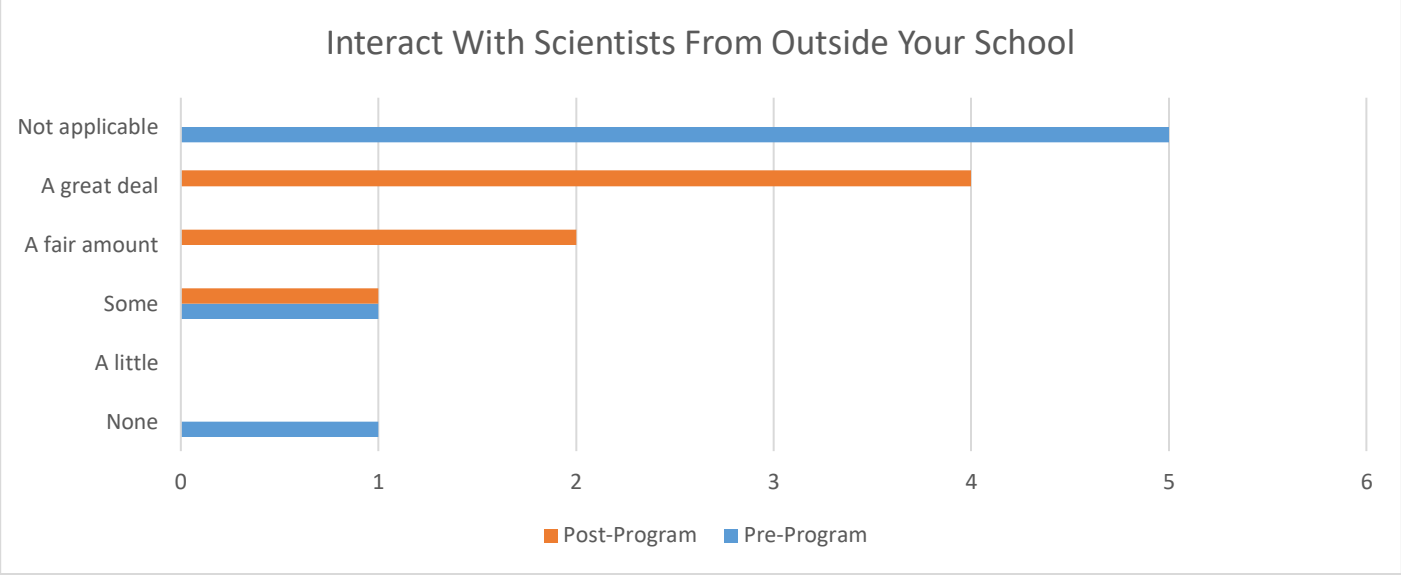
Interpretation: 43% of the students experienced an increase of "a fair amount or a great deal" in changes in their attitudes or behaviors as a researcher trying out new ideas or procedures on their own.



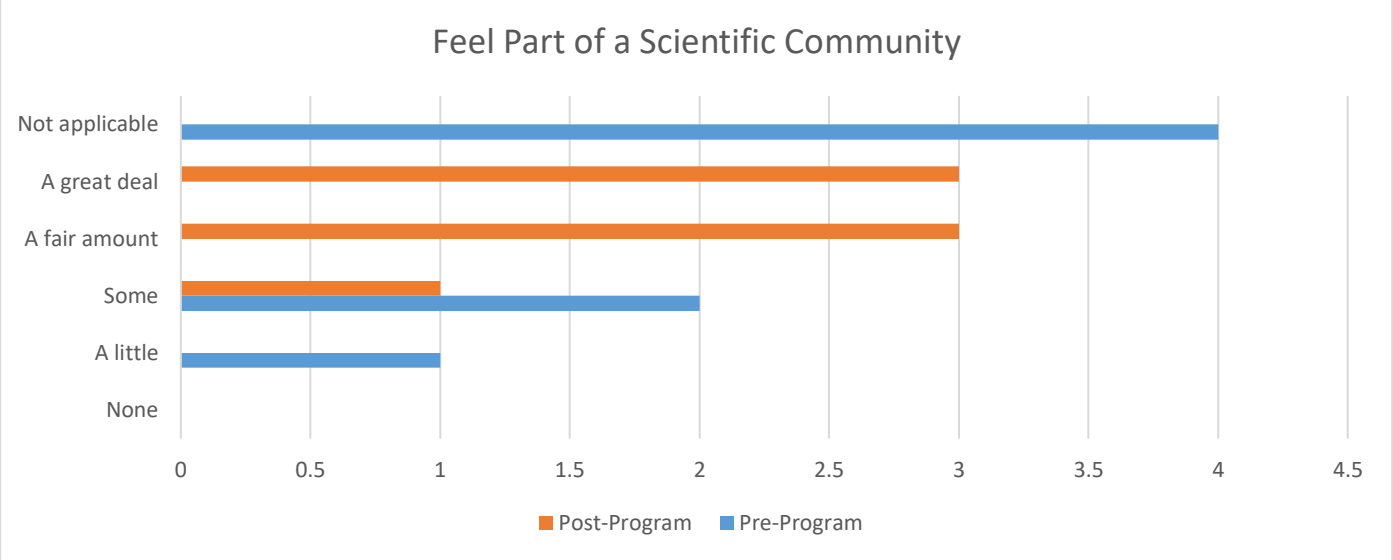
Interpretation: 57% of the students experienced an increase of "a great deal" in changes in their attitudes or behaviors in terms of feeling responsible for the project.



Interpretation: 57% of the students experienced an increase of "a great deal" in changes in their attitudes or behaviors as a researcher working extra hours because they were excited about the research.



Interpretation: 86% of the students experienced "a fair amount or a great deal" of change in their attitudes or behaviors as a researcher interacting with scientists from outside their school.

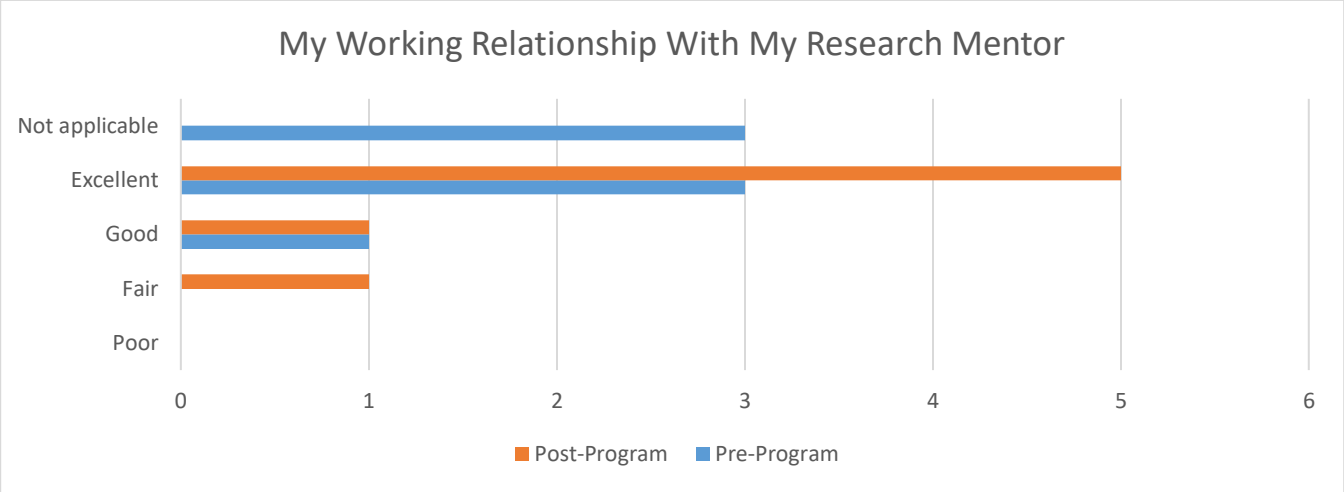


Interpretation: 86% of the students experienced "a fair amount or a great deal" of change in their attitudes or behaviors as a researcher that feels part of a scientific community.

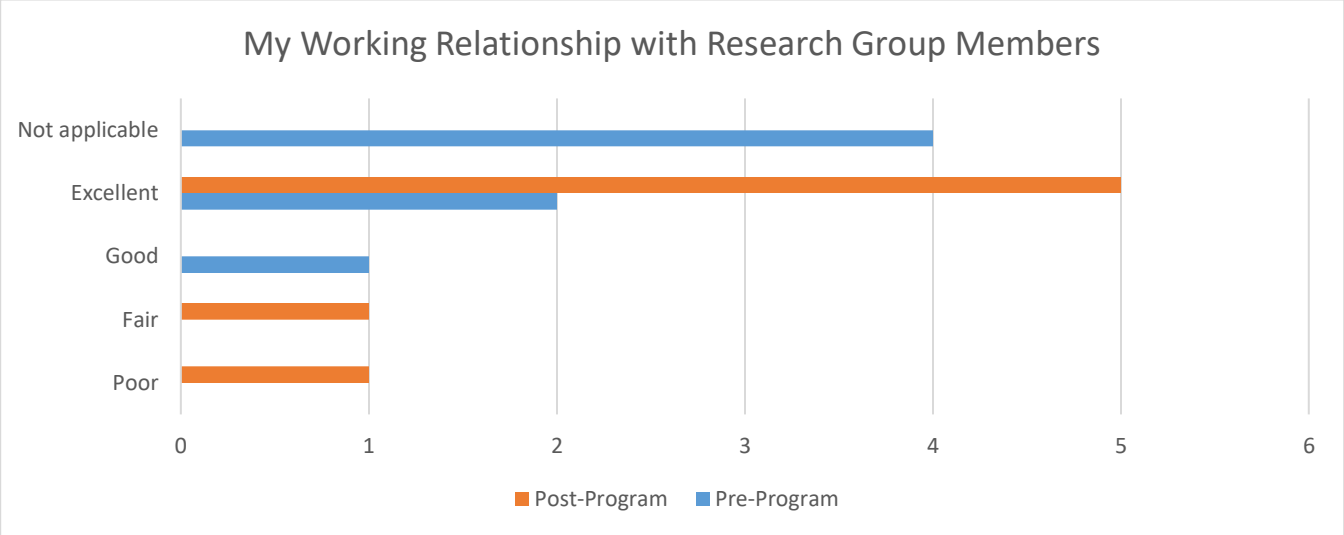
Section Comments and Ideas for Moving Forward: Overall, students experience "a great deal" of change in their attitudes or behaviors as a researcher from their experiences in the CAA REU program. Aspects such as feeling responsible for the project are important as feelings of ownership lead to increased accountability in science. Additionally, students interacting with scientists outside of their school can be pivotal experiences as the collegiality and camaraderie of working with other scientists may lead these students to pursue careers in science.

Section on Relationships with Mentors and Group Members

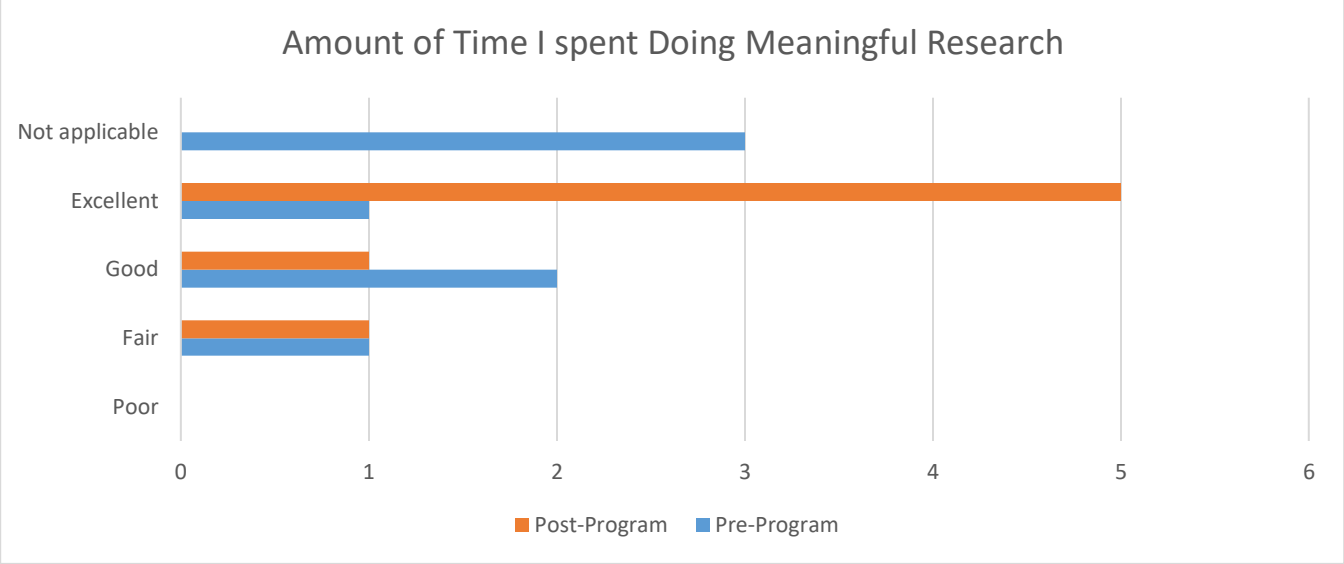
The next series of questions, graphed below, solicited student responses about their relationships with mentors and group members as well as the quality of the pedagogy and the knowledge of the faculty. Students were asked to "Please rate the following:"



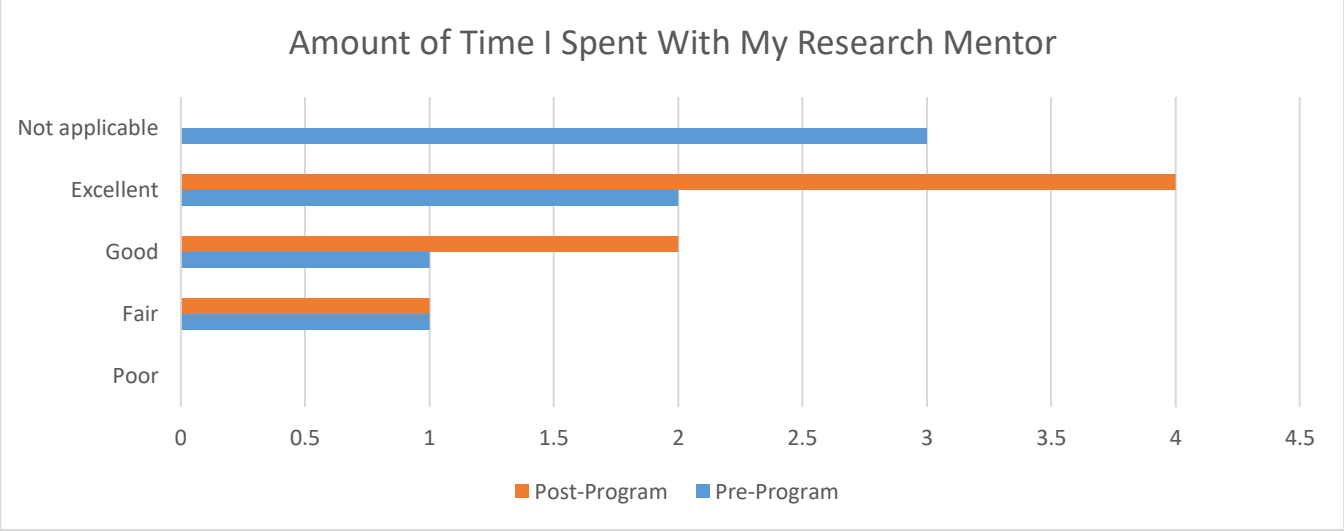
Interpretation: 71% of the students had an "excellent" working relationship with their CAA REU research mentor.



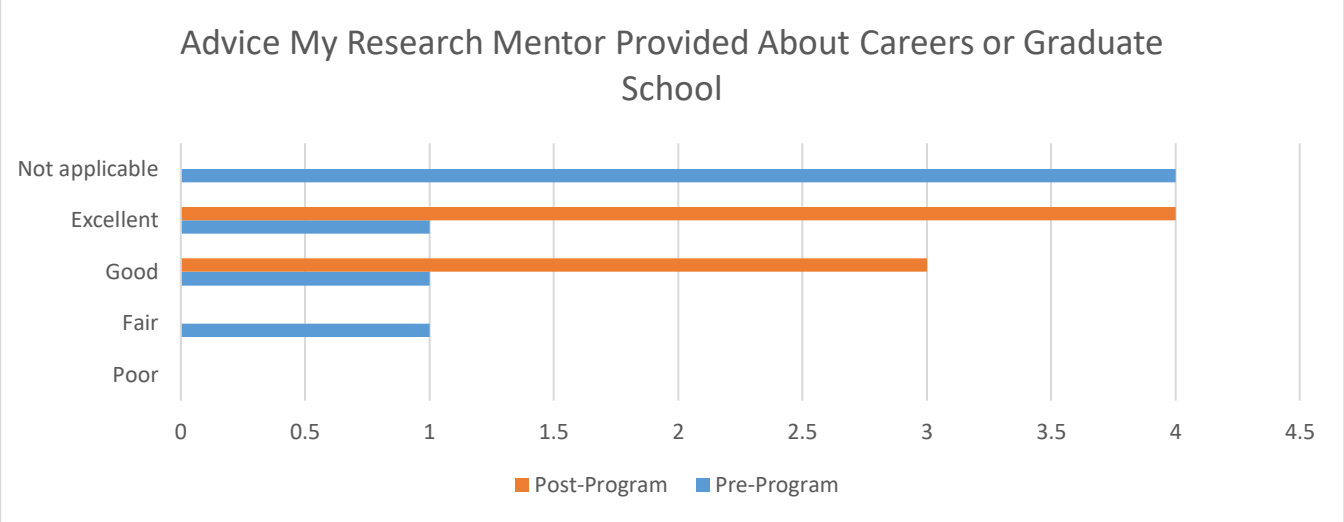
Interpretation: 71% of the students had an "excellent" working relationship with their CAA REU research group members.



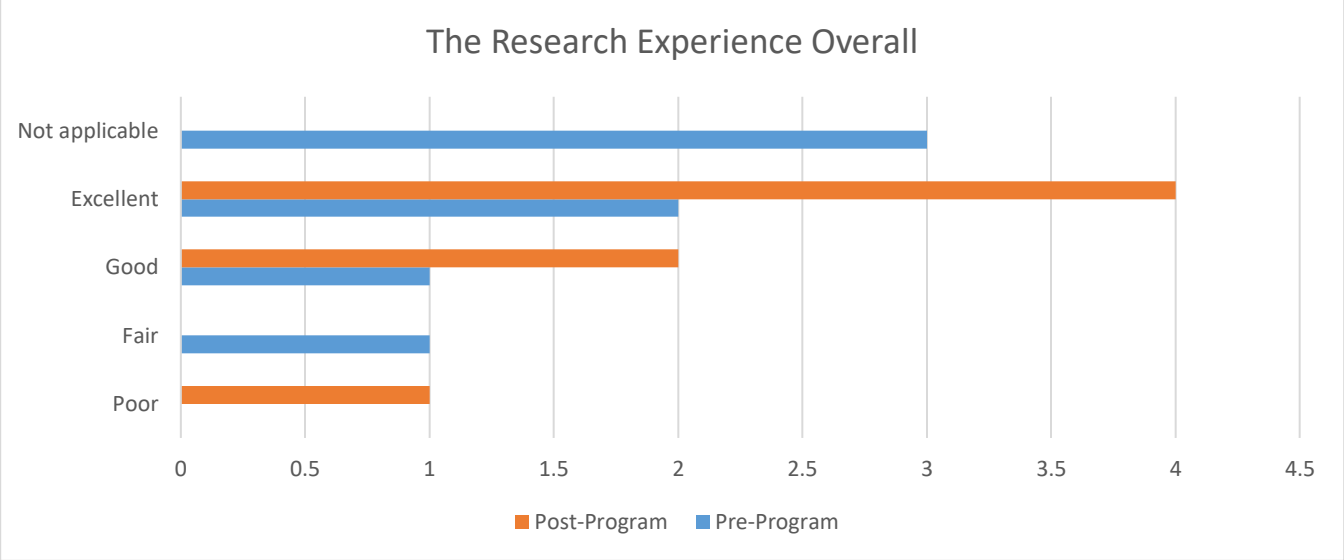
Interpretation: 71 % of the students rated their time doing meaningful research at the CAA REU as "excellent."



Interpretation: 86% of the students rated the amount of time spent with their research mentor at the CAA REU as "good" or "excellent."



Interpretation: 100% of the students rated the advice provided by research mentors at the CAA REU about careers or graduate school as "good" or "excellent."



Interpretation: 86 % of the students rated the overall research experience at the CAA REU as "good" or "excellent."

Students were asked to provide more detailed commentary on any of the above aspects: Below are unedited text comments.

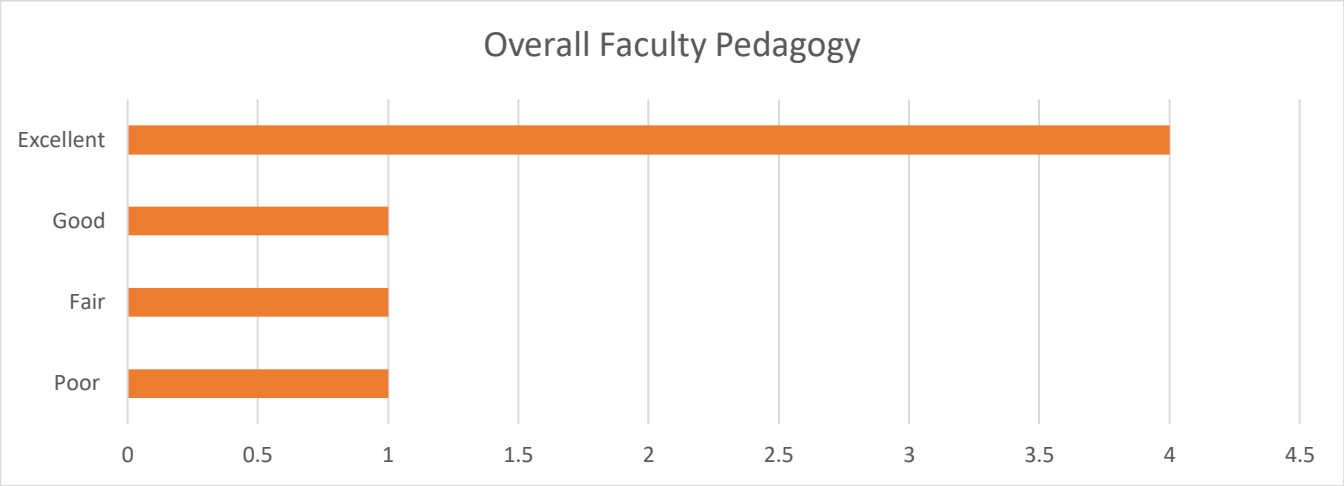
"I had a good relationship with the mentor of my research project. She was always available for questions and was excited about our project. She also provided us with a lot of guidance about our careers which was very helpful."

"Preparing your research start to finish in about two-ish weeks was an interesting experience"

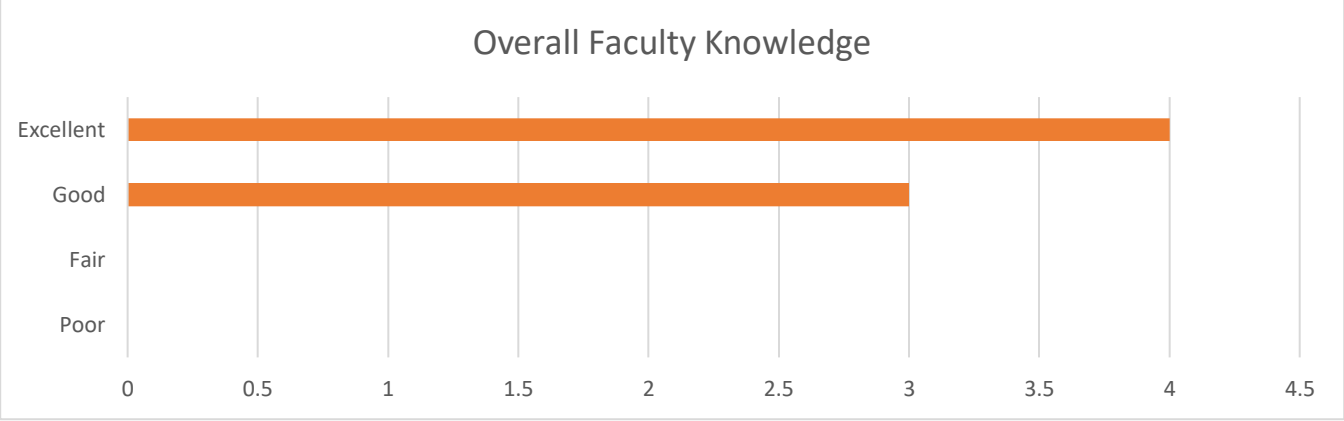
"No comment."

"The amount of one-on-one time was balanced between the other students, but I felt that I received more than adequate amount of time with Natalie. I felt that I've learned quite a bit about the life of a researcher and she spent an entire lecture session telling us about grad school. I am more excited than ever to become a researcher as a professional."

Also in this section were two questions asked only on the post-program survey, graphed below.



Interpretation: 14% of the students rated the overall faculty pedagogy at the CAA REU as "poor." 57% of the students rated the overall faculty pedagogy at the CAA REU as "excellent."



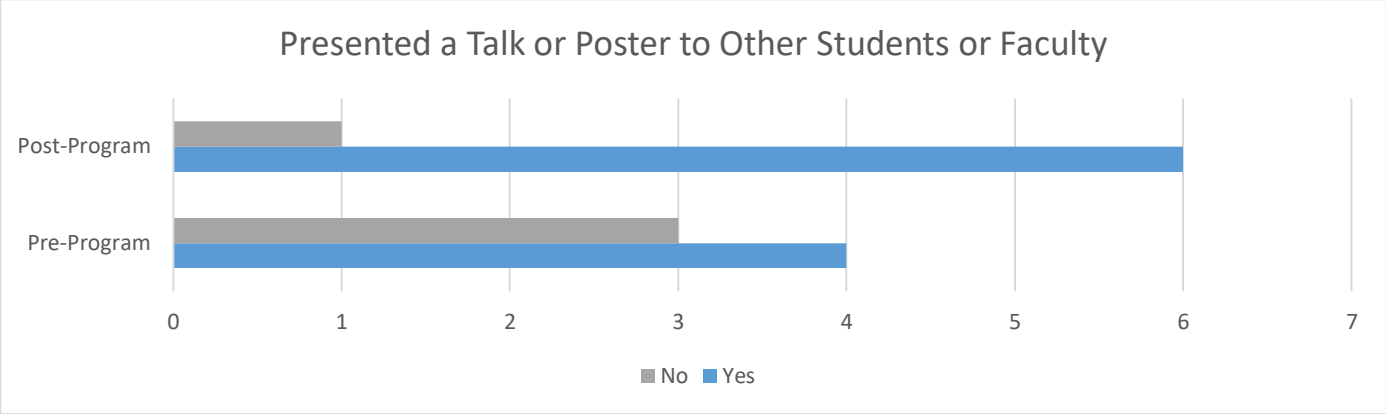
Interpretation: 100% of the students rated the overall faculty knowledge at the CAA REU as "good" or "excellent."

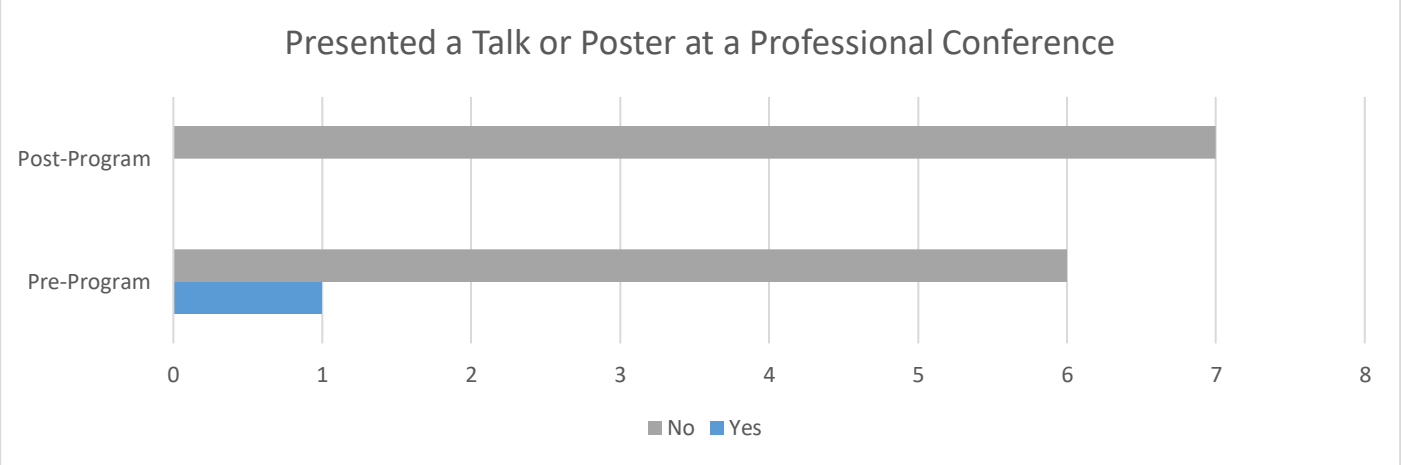
Section Comments and Ideas for Moving Forward: Overall, one or two students rated their experiences with mentors and fellow students lower than did the other five or six students. The students in the CAA REU indicated that the faculty knowledge was "excellent" or "good" in this program; however, the teaching methods were not rated as highly, with one student rating the pedagogy as "fair" and one rating the pedagogy as "poor." This question – did learning occur? – should be considered during the planning phase for the 2019 CAA REU. The staff and faculty for the CAA REU should focus on learning, not on teaching. A possible solution would be to administer a learning style test at the beginning of the program and provide the results to all instructors along with the notice that diverse learning styles must be addressed by diverse teaching styles, i.e., differentiation. If the staff and faculty for the CAA REU do not have access to a learning styles test already, this link to a college

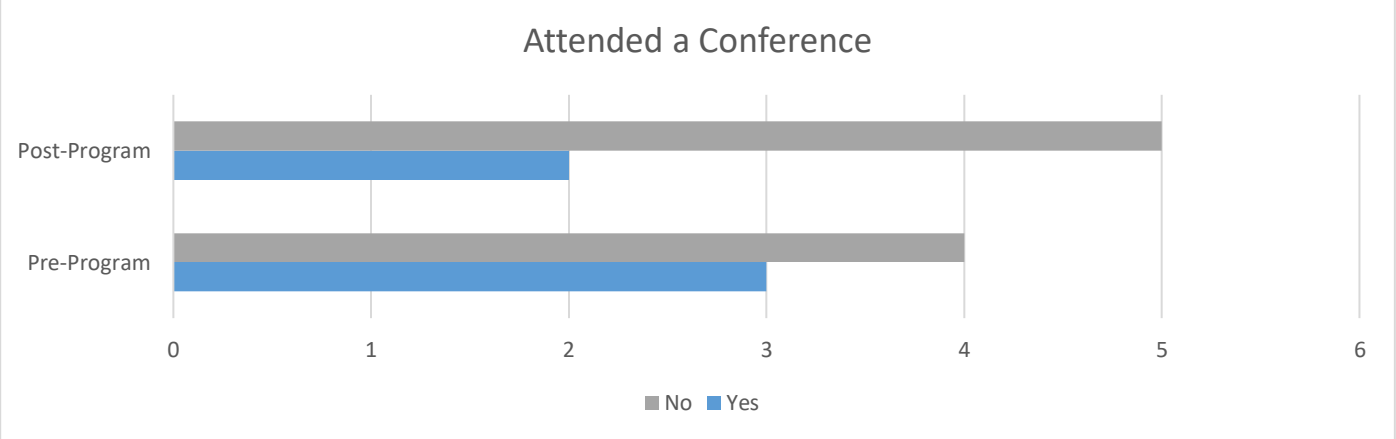
learning style test (Diablo Valley College) https://www.dvc.edu/enrollment/counseling/lss/survey.html can be used. NOTE: This is copyrighted information. Permission to link to this survey and questions regarding the DVC Learning Style Survey should be directed to Catherine Jester at cjester@dvc.edu.

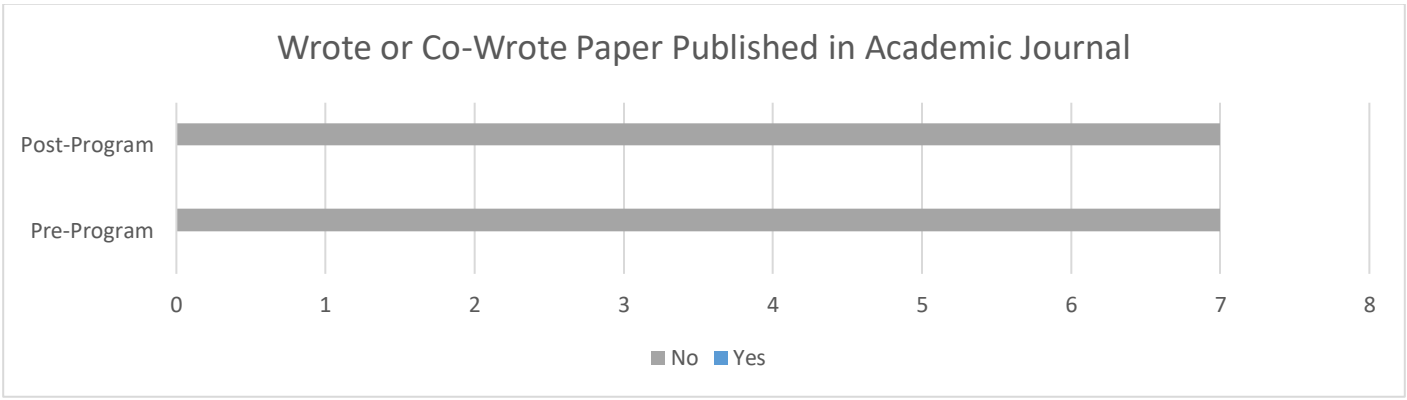
Section on Methods for Sharing Research

The questions in the section, graphed below, assess the methods in which students shared their research experience with their peers, colleagues, and the academy. Statements to complete were "As part of my most recent research experience, I . . ."








Wrote or Co-Wrote Paper Published in Academic Journal
Post-Program
Pre-Program
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7
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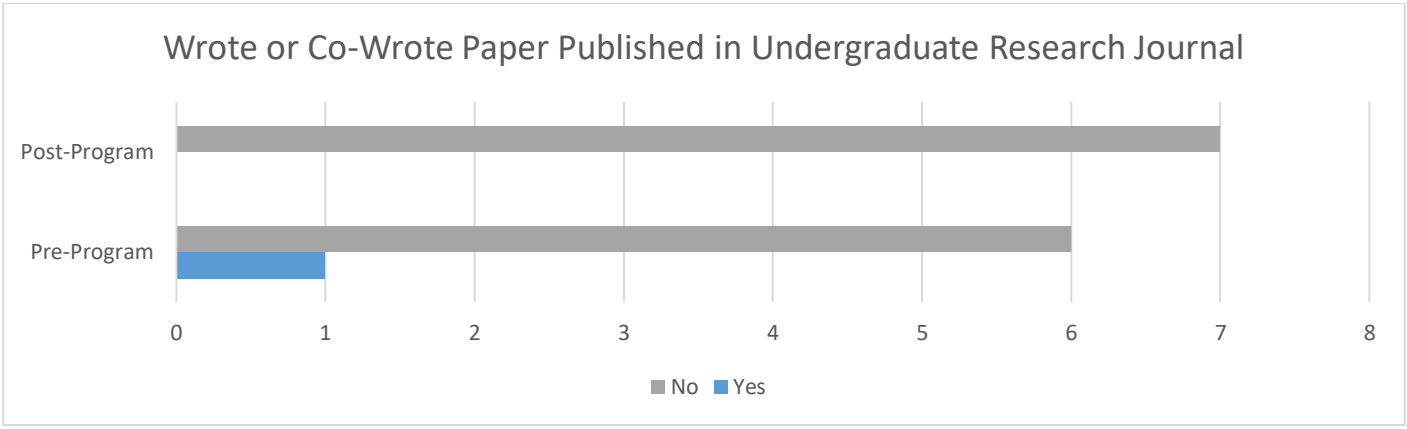
No
Yes


Wrote or Co-Wrote Paper Published in Undergraduate Research Journal
Post-Program
Pre-Program
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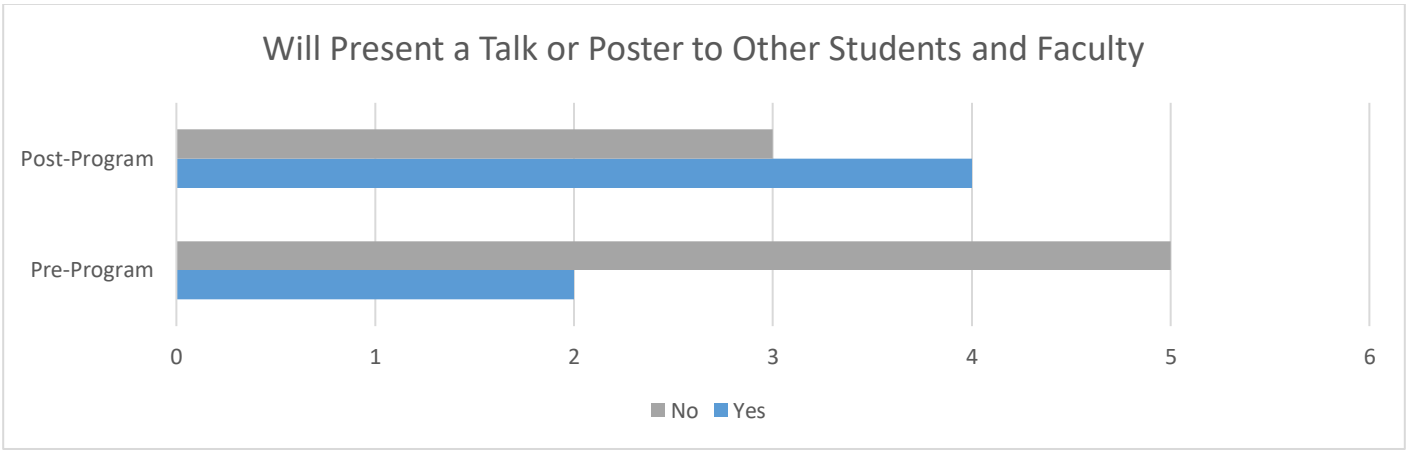
Yes


Will Present a Talk or Poster to Other Students and Faculty
Post-Program
Pre-Program
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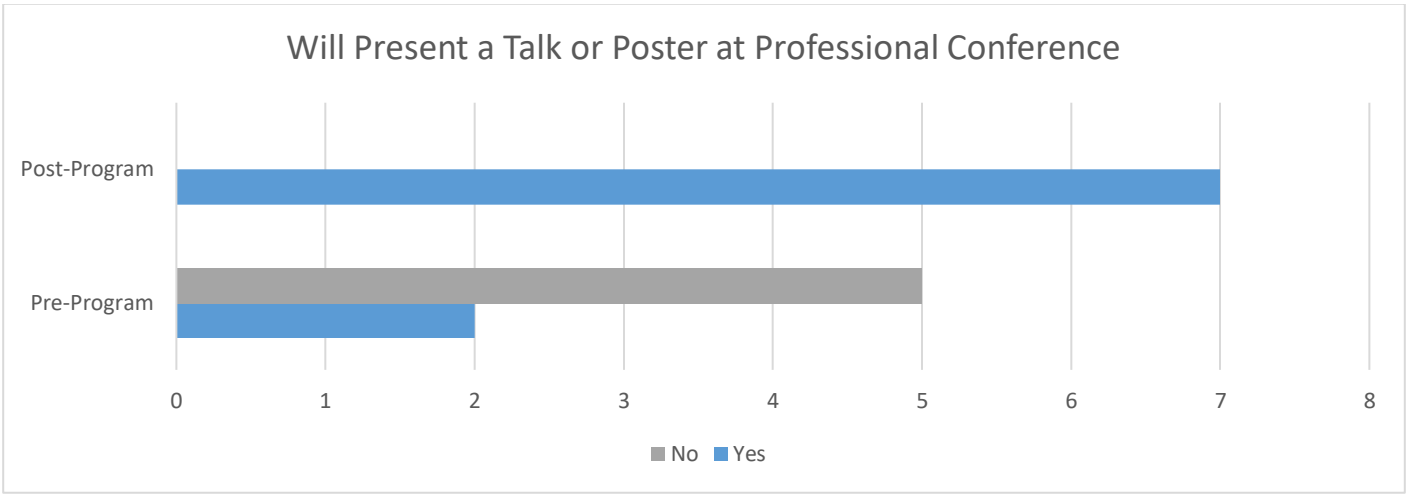
No
Yes


Will Present a Talk or Poster at Professional Conference
Post-Program
Pre-Program
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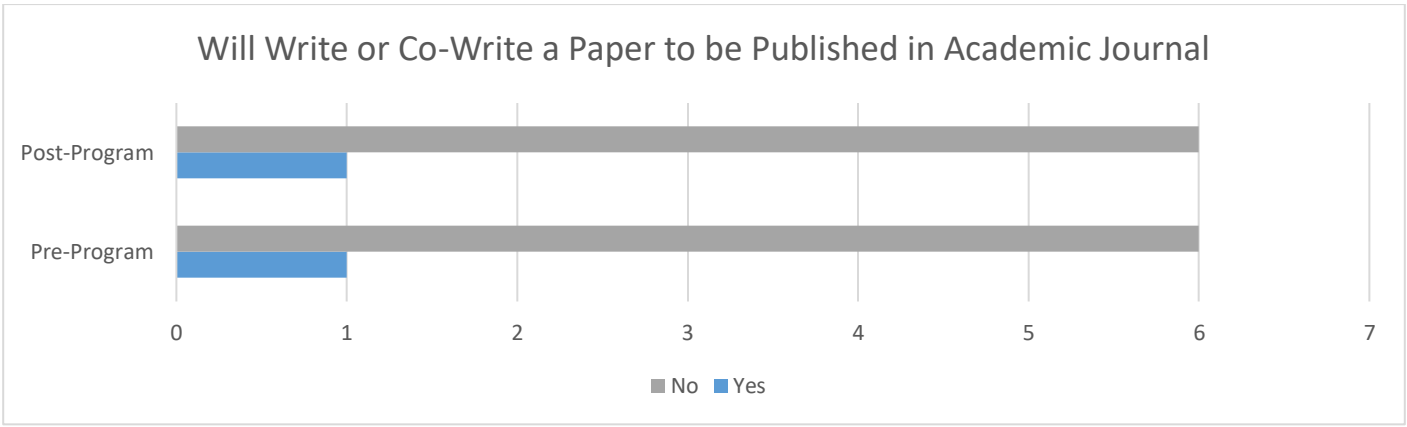
No
Yes


Will Write or Co-Write a Paper to be Published in Academic Journal
Post-Program
Pre-Program
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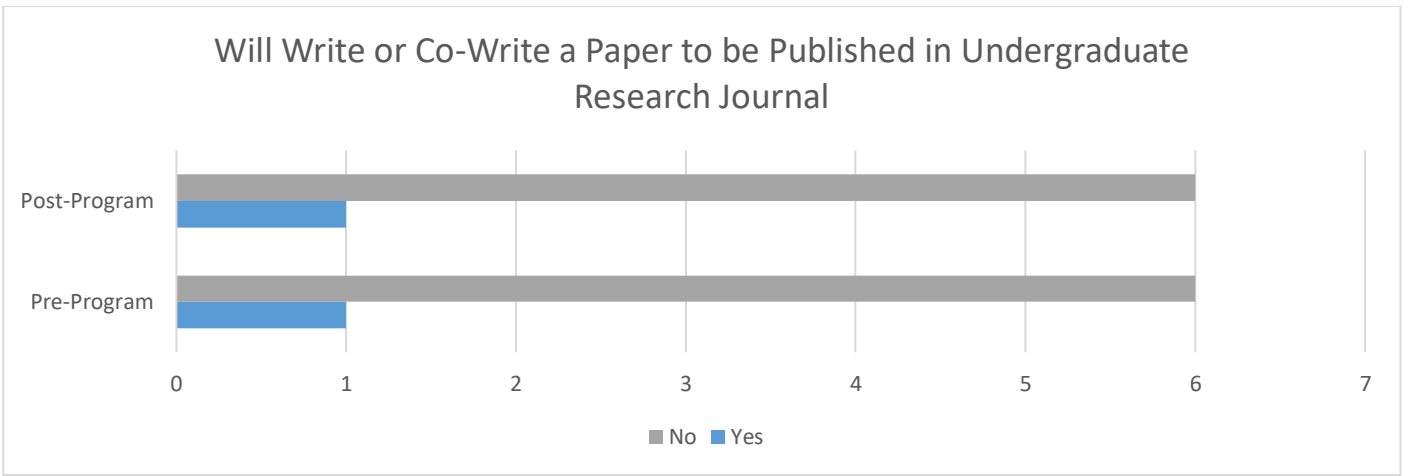
No
Yes


Will Write or Co-Write a Paper to be Published in Undergraduate Research Journal
Post-Program
Pre-Program
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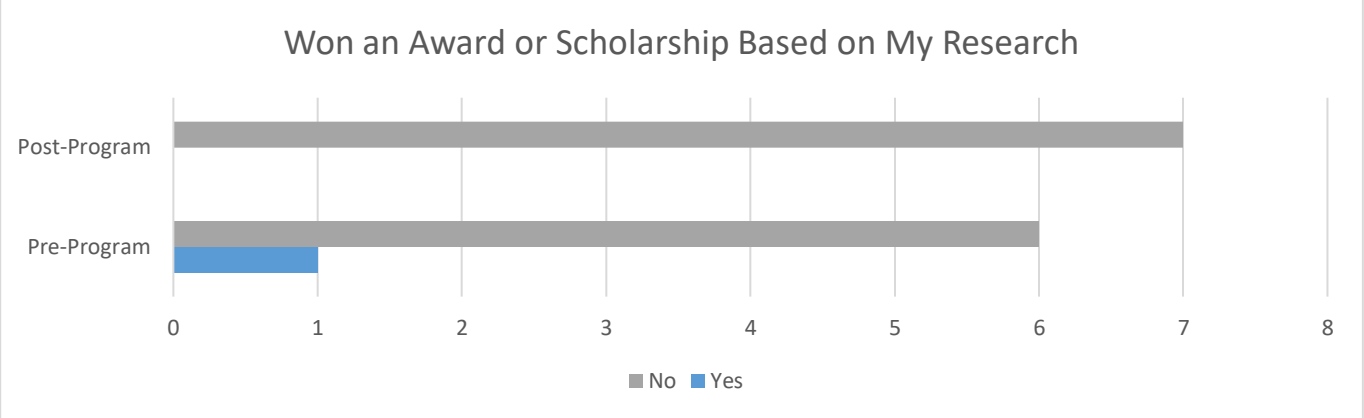
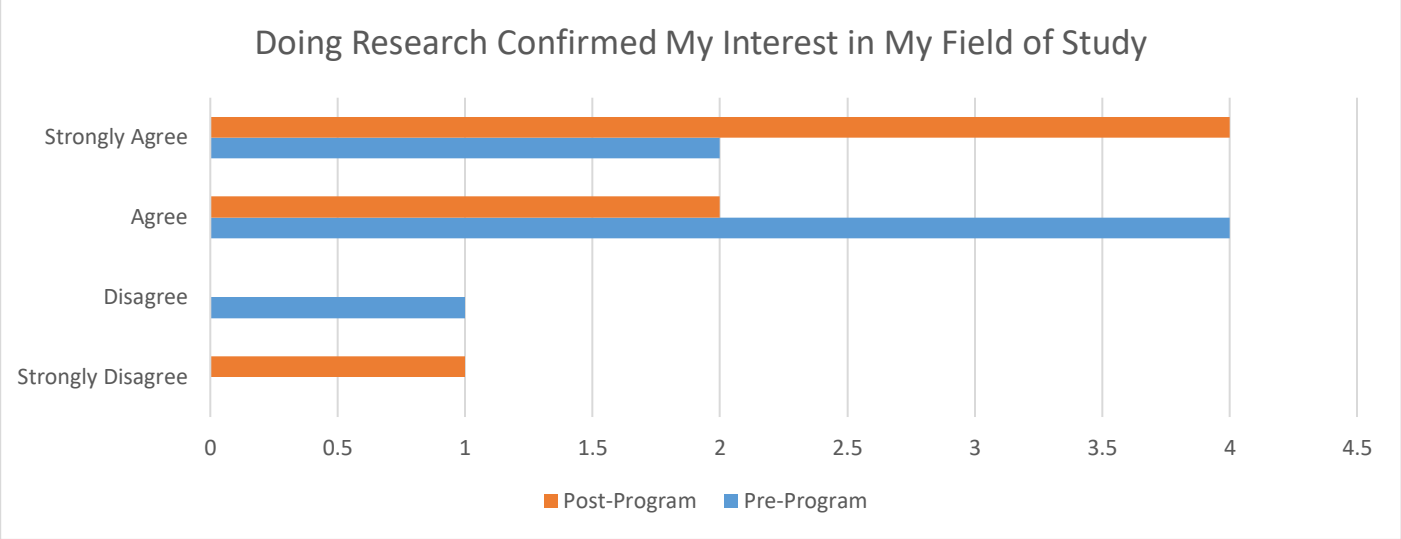
No
Yes



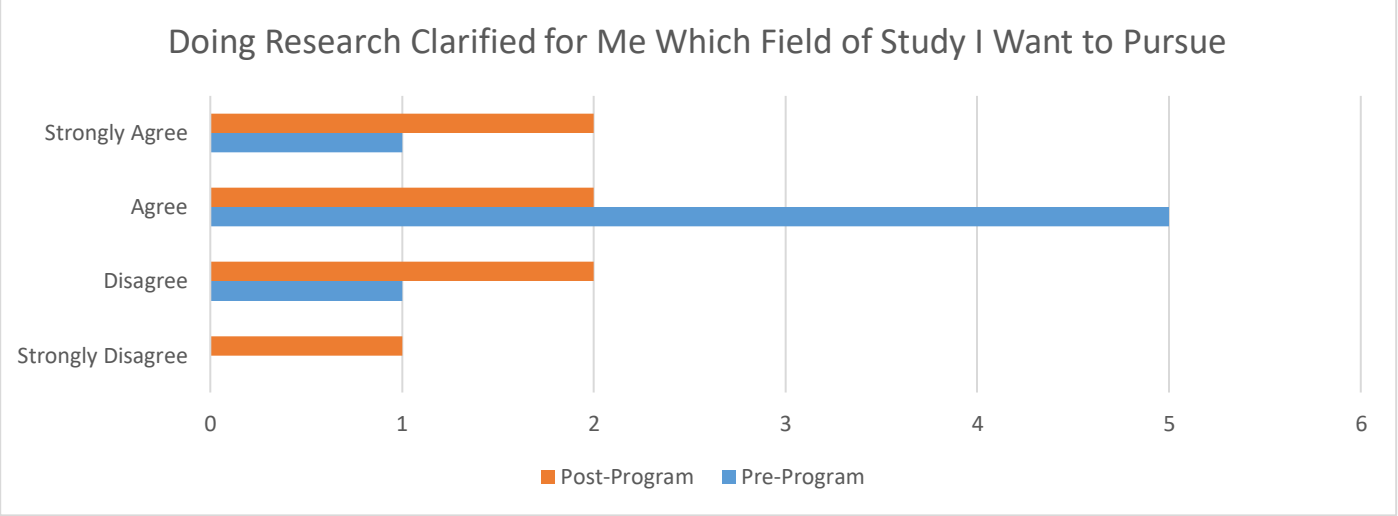
Section Comments and Ideas for Moving Forward: The fact that all students participating in the CAA REU program will present a talk or poster at a professional conference (the 2018 Midwest Archaeological Conference) is one of the strongest outcomes from this program as this activity is a critical part of a researcher's life. However, the fact that only one student is planning to submit a paper for publication in an academic journal and one student is planning to submit a paper for publication in a student journal is a missed opportunity. Writing up research is a challenging, and often under-taught, aspect of conducting science. The staff and faculty of the CAA REU program may wish to add to or enhance a writing component for the 2019 program.

Section on Implications for Future Studies and Current Understanding

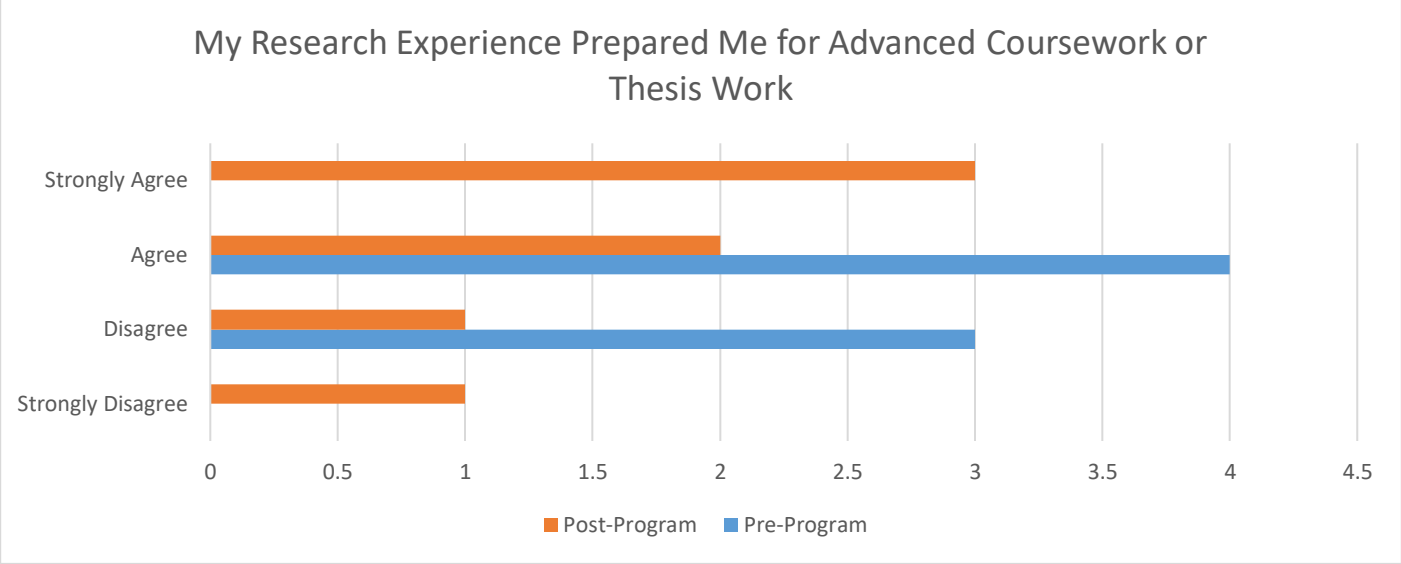
The questions in this section, graphed below, asked the students to rate how much they agreed with the following statements.



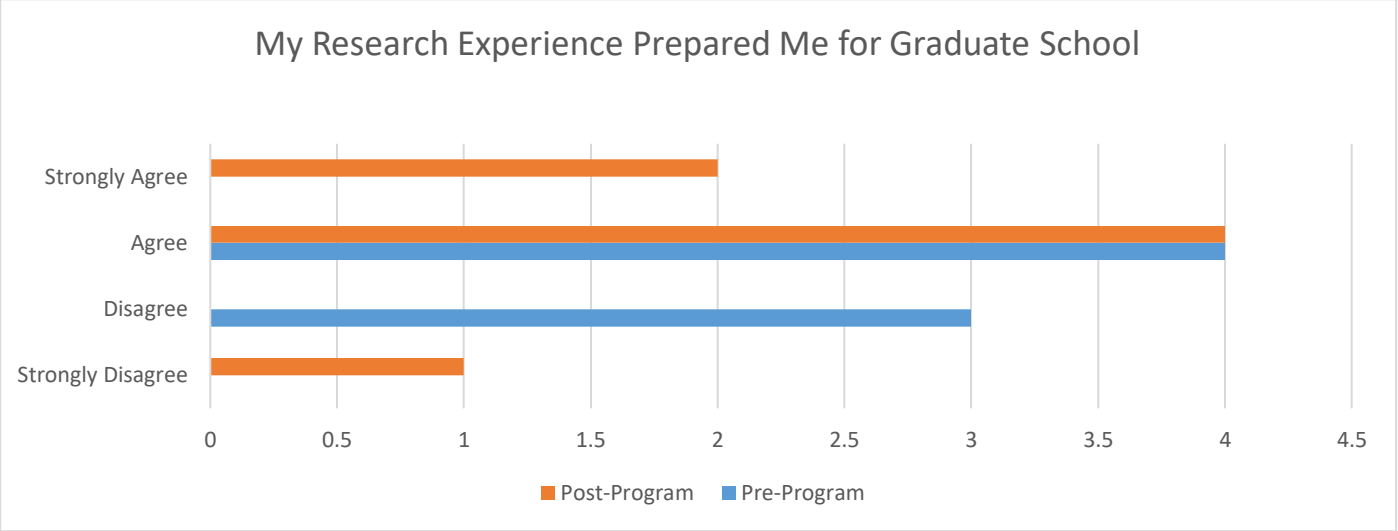
Interpretation: 86% of the students "agreed or strongly agreed" that doing research at the CAA REU confirmed their interest in their field of study.



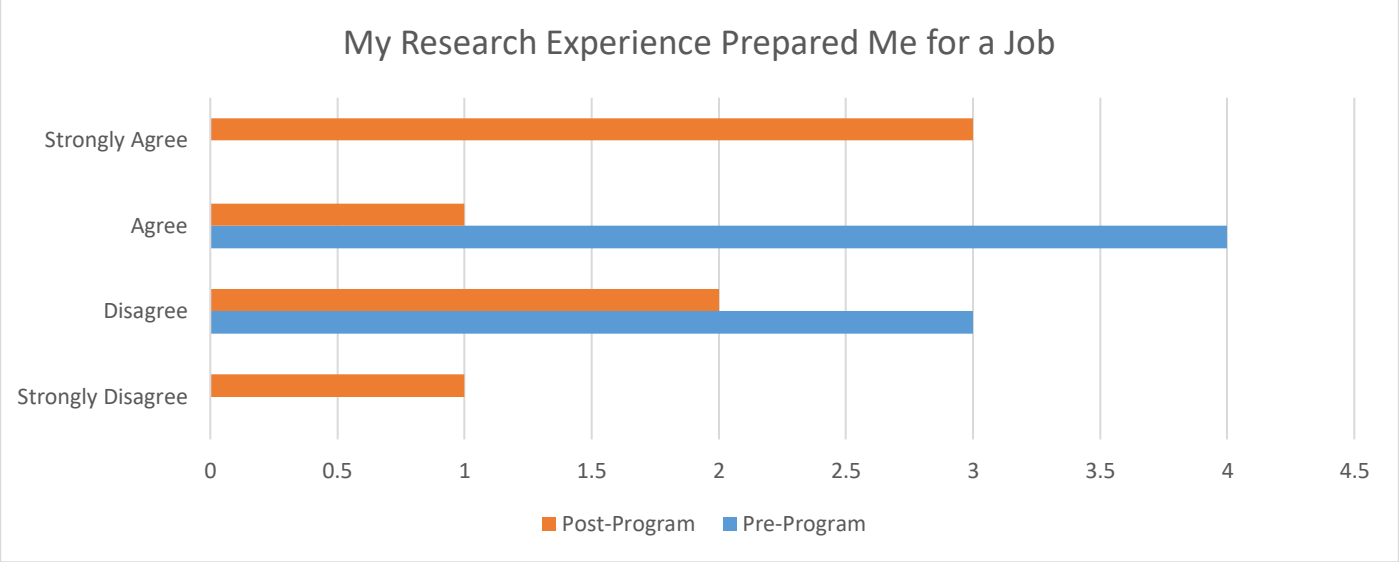
Interpretation: 43% of the students "disagreed or strongly disagreed" that doing research at the CAA REU clarified which field of study they want to pursue. 57% of the students "agreed or strongly agreed" that doing research at the CAA REU clarified which field of study they want to pursue.



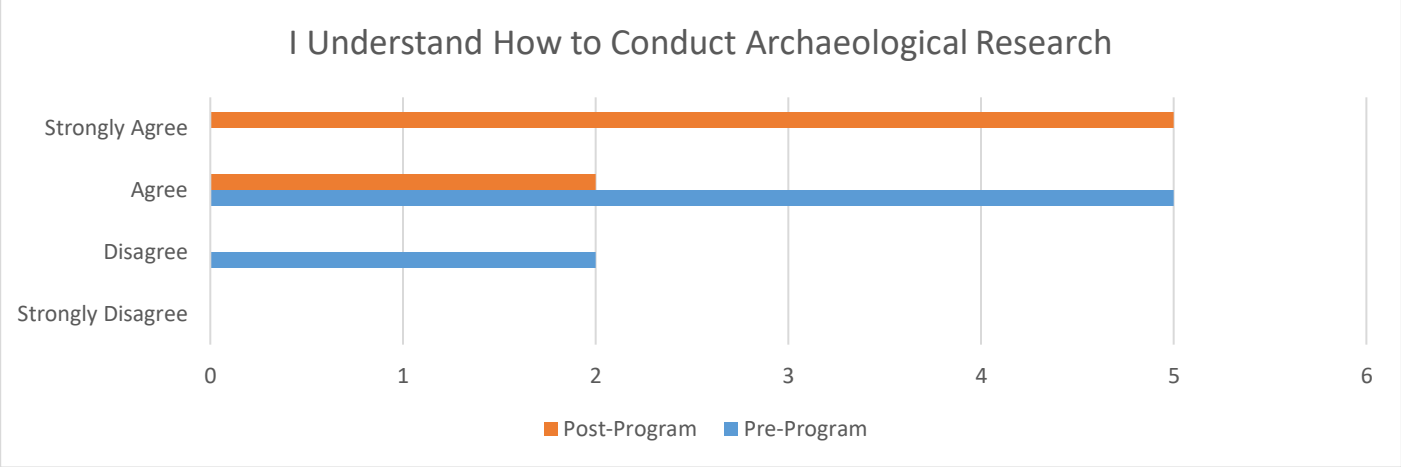
Interpretation: 71% of the students "agreed or strongly agreed" that doing research at the CAA REU prepared them for advanced coursework or thesis work.



Interpretation: 86% of the students "agreed or strongly agreed" that doing research at the CAA REU prepared them for graduate school.



Interpretation: 43% of the students "disagreed or strongly disagreed" that doing research at the CAA REU prepared them for a job. 57% of the students "agreed or strongly agreed" that doing research at the CAA REU prepared them for a job.



Interpretation: 100% of the students "agreed or strongly agreed" that after participating in the CAA REU they understand how to conduct archaeological research.

Within this section, students were asked to provide text responses to the statement "The research experience at CAA met my learning expectations for archaeological research because:" Below are the unedited text comments.

"It gave me experience in both archaeological research as well as geophysical training."

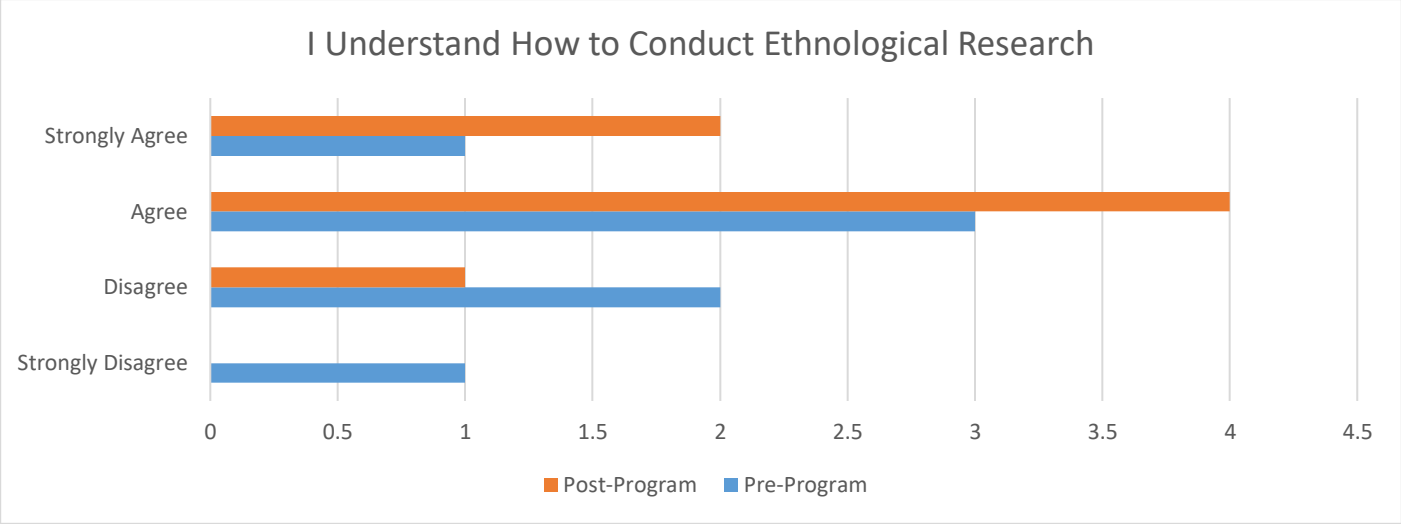
"They introduced to many different concepts related to archaeology"

"There was a lot of intensive field and lab work."

"The amount of time working in the field and lab each day seemed endless, but every hour was worth it and brought about new insight into the field of archaeology. It broadened my horizons for the many possible pursuits that archaeology provides."

“It was in depth, comprehensible, and I feel comfortable conducting or planning future archaeology research.”

“N/A”



Interpretation: 86% of the students “agreed or strongly agreed” that after participating in the CAA REU they understand how to conduct ethnological research.

Within this section, students were asked to provide text responses to the statement “The research experience at CAA met my learning expectations for ethnological research because:” Below are the unedited text comments.

“We did actual fieldwork with community members.”

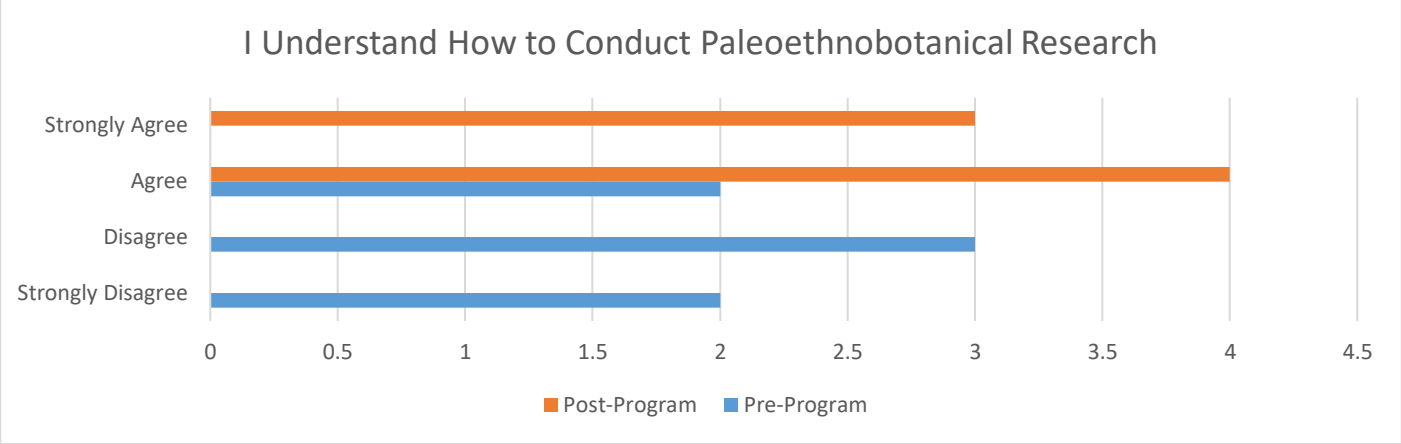
“Learning how to properly transcribe and how much time it takes”

“We got to see how much goes into ethnography.”

“The ethnological research involved a real world problem with real people. This immersed me in the research and made it feel that much more important and relevant.”

“We conducted interviews and compiled the data, but I wish we would have had more time to understand the tactics of interacting with a population and gaining entree.”

“Ethnology and ethnography are separate things.”



Interpretation: 100% of the students "agreed or strongly agreed" that after participating in the CAA REU they understand how to conduct paleoethnobotanical research.

Within this section, students were asked to provide text responses to the statement "The research experience at CAA met my learning expectations for paleoethnobotanical research because:" Below are the unedited text comments.

"We went on many different field trips and learned about the many different aspects of paleoethnobotany."

"Never had any expectations, so I was really pleased the entire time with what I was learning"

"We did a lot of hands on activities."

"This was an extremely new topic to me, but it has turned into a new interest of mine because of the stellar guidance. Outdoor activities also connected the field to the lab."

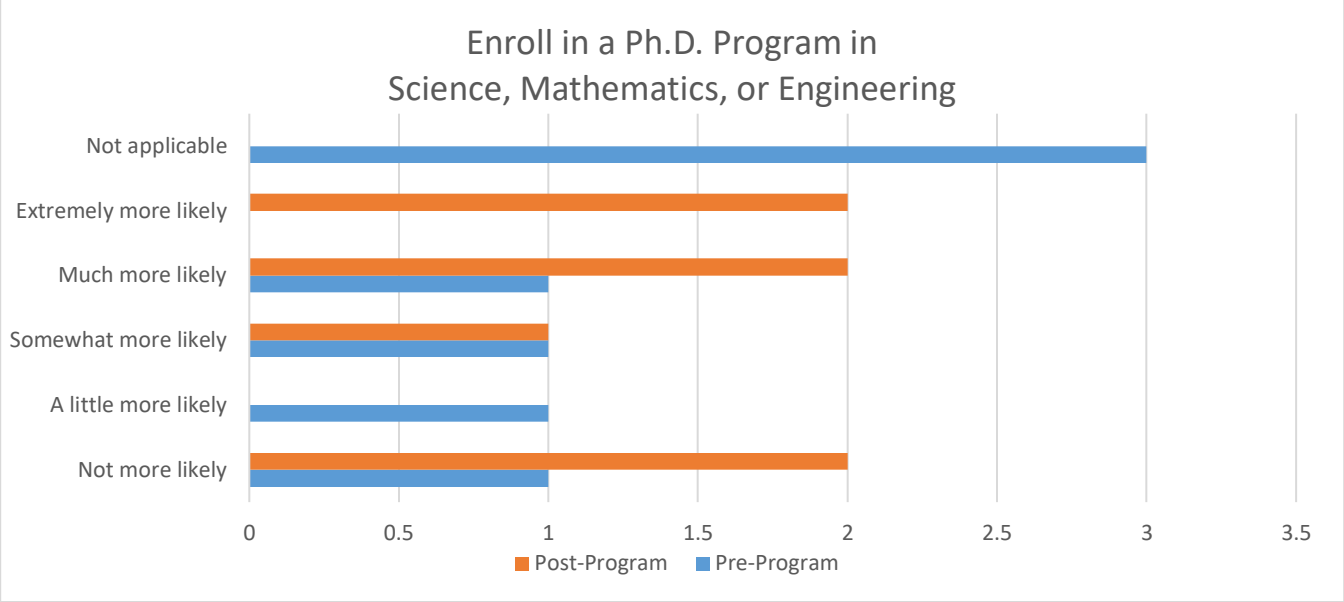
"Not only did I enjoy the paleoethnobotanical research, but my project is focused on it. Through conducting my research and finishing the project I feel very comfortable in conducting paleoethnobotany research."

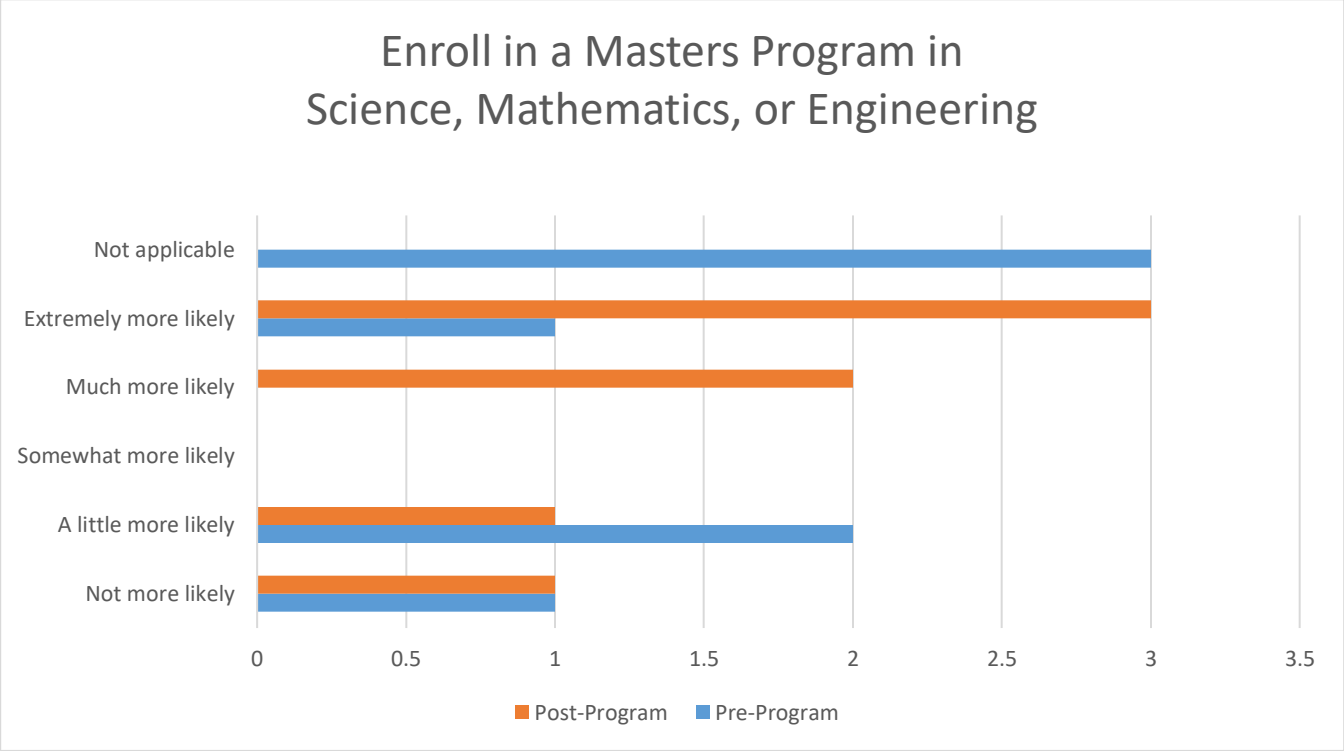
"I didn't know what to expect."

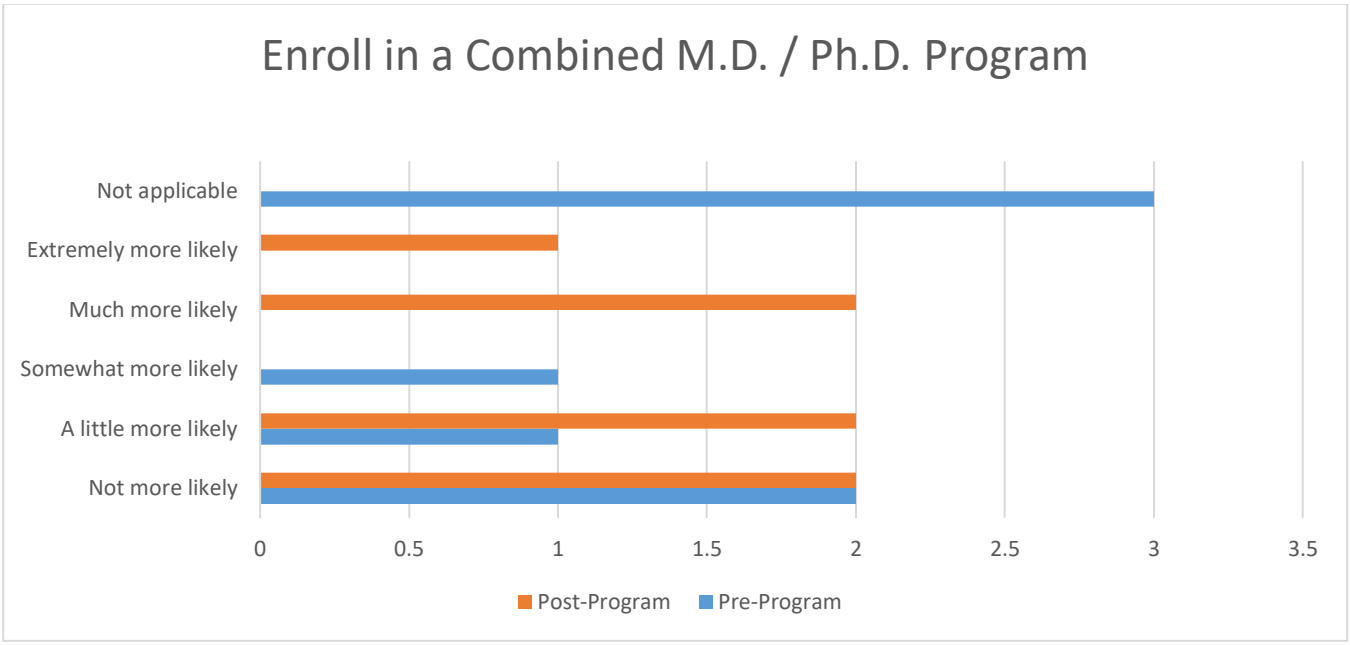
Section Comments and Ideas for Moving Forward: The CAA REU program was successful in teaching students how to do archaeological work, ethnological work, and paleoethnobotanical work. The text answers not only provide a lot of information for the CAA REU staff and faculty, many of the statements can be used in marketing materials for the 2019 program. For example, "This was an extremely new topic to me, but it has turned into a new interest of mine because of the stellar guidance." And, "The ethnological research involved a real world problem with real people. This immersed me in the research and made it feel that much more important and relevant." As these are anonymous comments, the citation should be "Student, 2018 CAA REU Program."

Section on Future Educational Choices

The questions in this section, graphed below, asked "Compared to your intentions before doing research, how likely are you now to:"






Enroll in a Combined M.D. / Ph.D. Program
Not applicable
Extremely more likely
Much more likely
Somewhat more likely
A little more likely
Not more likely
0
0.5
1
1.5
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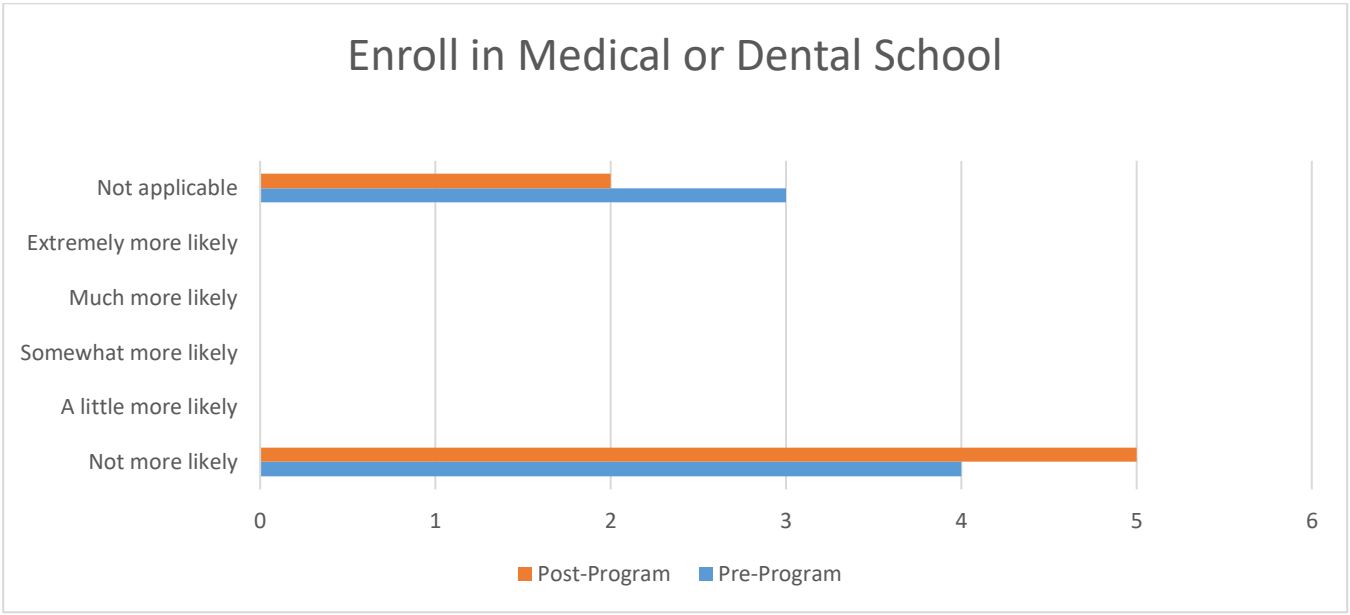
2.5
3
3.5
Post-Program
Pre-Program


Enroll in Medical or Dental School
Not applicable
Extremely more likely
Much more likely
Somewhat more likely
A little more likely
Not more likely
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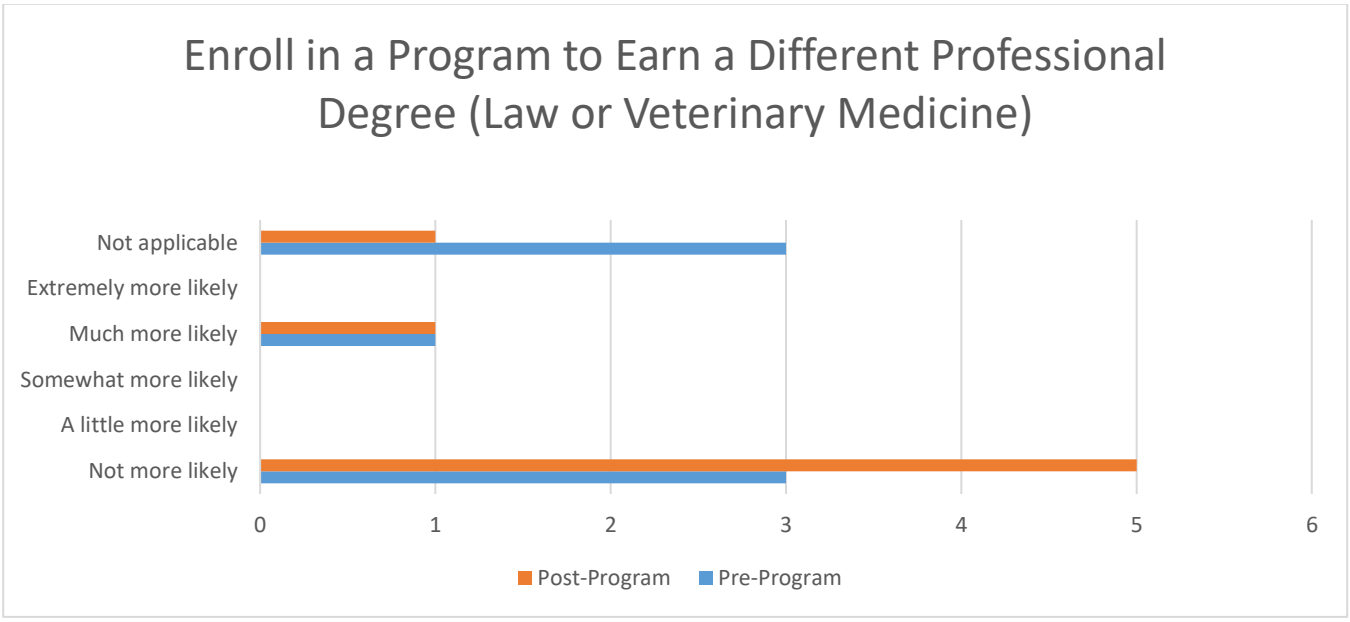
6
Post-Program
Pre-Program


Enroll in a Program to Earn a Different Professional Degree (Law or Veterinary Medicine)
Not applicable
Extremely more likely
Much more likely
Somewhat more likely
A little more likely
Not more likely
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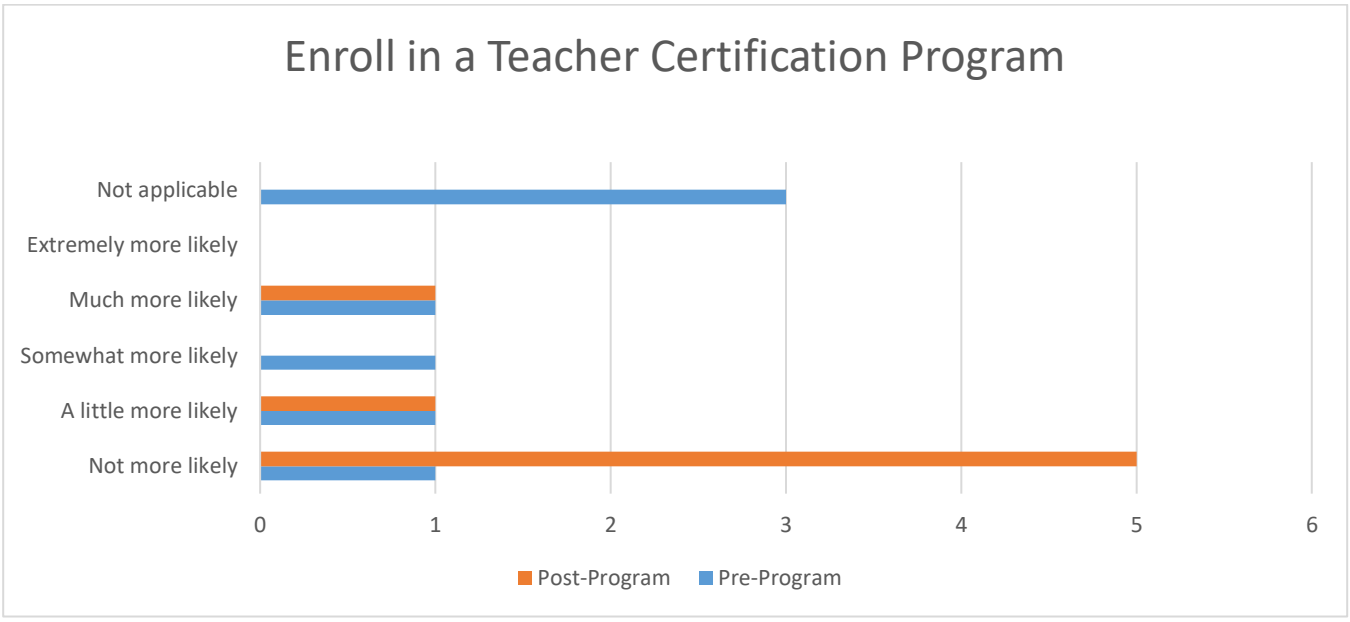
Post-Program
Pre-Program


Enroll in a Teacher Certification Program
Not applicable
Extremely more likely
Much more likely
Somewhat more likely
A little more likely
Not more likely
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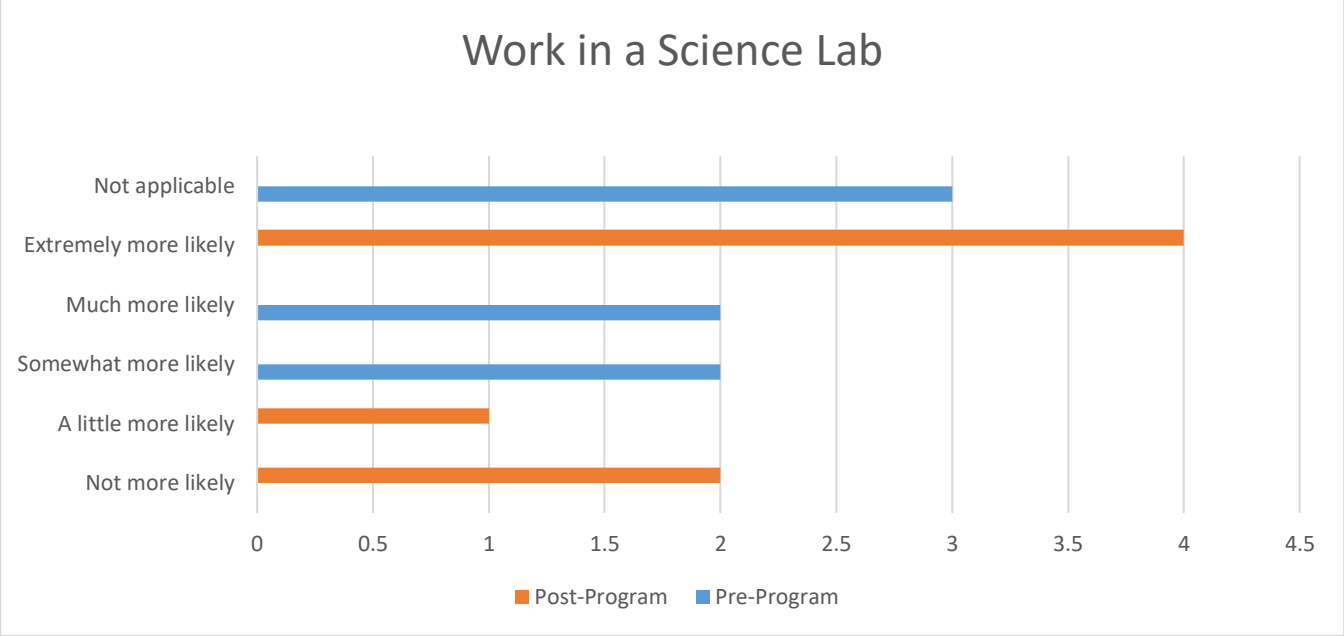
Post-Program
Pre-Program



In this section, students were asked to provide text responses to the question "Please state your intended degree and, compared to your intentions before doing research, how likely are you now to enroll in a graduate program leading to an advanced degree?" Below are the unedited text comments.

"Geology and Anthropology, more likely to look into a Master's program and end there instead of going towards a PHD"

"None."

"I am currently looking to finish my bachelor's, but I want to get a PhD. Doing this research only solidified that there is nothing else that I would rather do with my life."

"Law or business degree; I am slightly less inclined to go to graduate school after this program, and certainly won't go to graduate school for any anthropological degree."

Interpretation: Students participating in the CAA REU are much more likely to pursue advanced degrees in science, mathematics, or engineering than to pursue a profession as a medical doctor, dentist, lawyer, veterinarian, or teacher.

Section Comments and Ideas for Moving Forward: Participation in the CAA REU helped the program participants decide if they want to move towards a science career, a goal of the REU programs.

Section on Future Career Plans

This section asked students to provide text responses to the question "How did your research experience influence your thinking about future career and graduate school plans?" Below are the unedited text comments.

"It further enforced my plans on attending graduate school."

"Made me aware that I need to look into who I want my advisor to be more closely"

"It confirmed my love for archaeological research, and what I do and do not like about anthropology."

"This research experience enhanced the possibility that I pursue a graduate degree in archaeology."

"I want to enroll in grad school and begin my studies in bio archaeology. I want to look into my interests and bring them to light and give back to the communities that are stakeholders."

Section Comments and Ideas for Moving Forward: Participation in the CAA REU helped the program participants decide whether they do or do not (both equally important) want to pursue advanced schooling in anthropology.

Section on Other Gains

This section asked students to provide text responses to the question "Did you make other gains from doing research that we didn't mention? If so, please briefly describe these." Below are the unedited text comments.

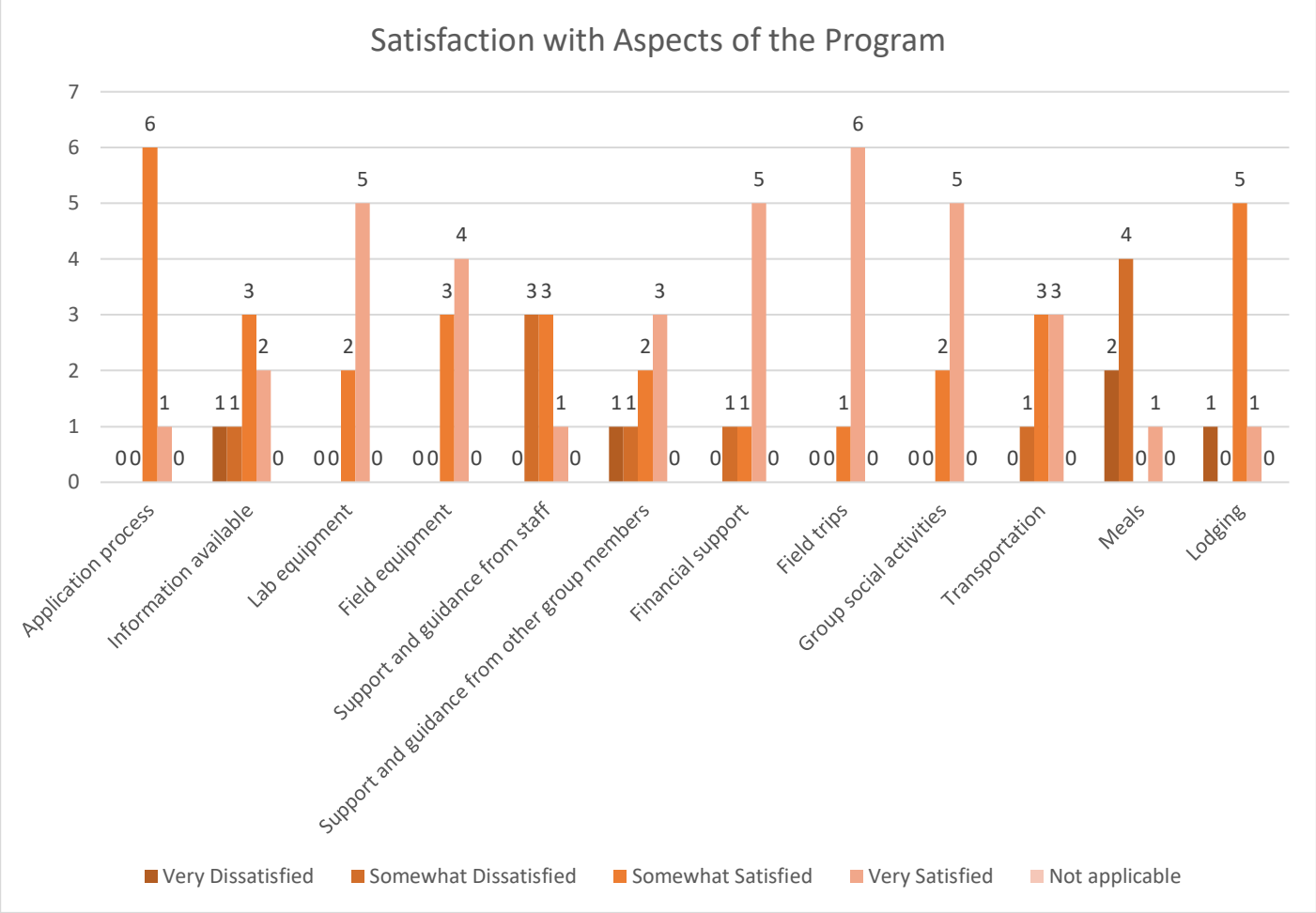
"no"

"Nothing that I can think of right away"

"None."

Section on Aspects of the Research Program

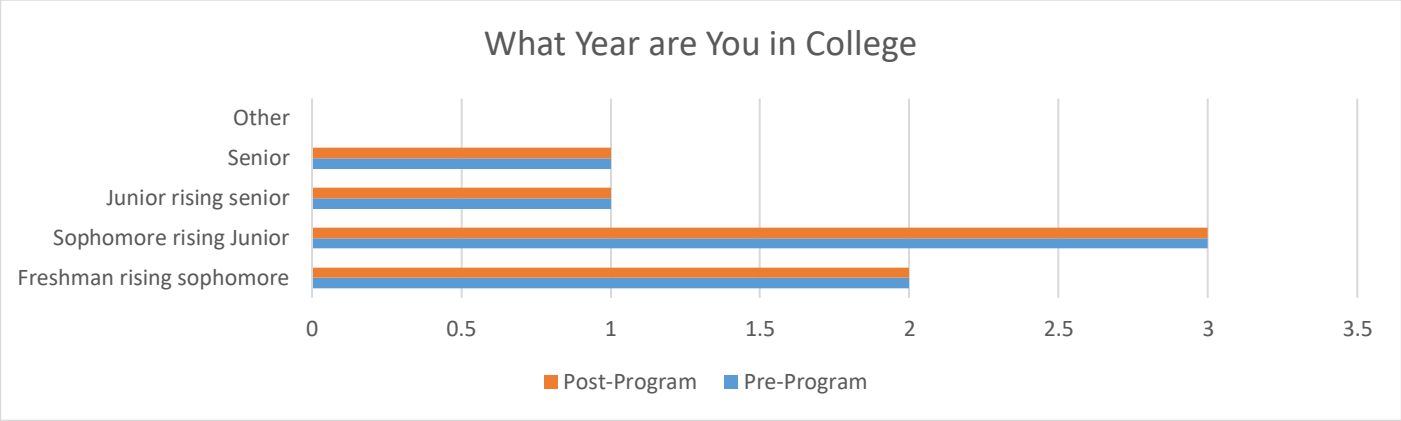
The questions graphed below related to aspects of the research program were only asked on the post-program survey.



<u>Section Comments and Ideas for Moving Forward</u>: The application process appears to have been problematical for students. Although it is possible that applications are simply stressful for students, the CAA process should be assessed carefully prior to the 2019 application season and efforts made to ensure the process works smoothly. The information available (or not, as the case may be) was the second lowest ranked item on this section of the survey. Please see the detailed comments in the section on what would make the experience better (below) for more information on this. Providing comprehensive communication on the daily activities and the expectations of the staff in advance is the best way to prevent students from feeling left out – this is an easy fix. The lowest ranked item on this section of the survey, however, may not be so easy to fix. Six of seven respondents were either "very dissatisfied" or "somewhat dissatisfied" with the meals provided during the program. Although Kampsville is not a hub for restaurants or grocery stores, thought needs to be given to the nutritional needs of program participants (see below for suggestions). The lab equipment, financial support, field trips, and group social activities were all scored positively by the participants.

Section on Year in College

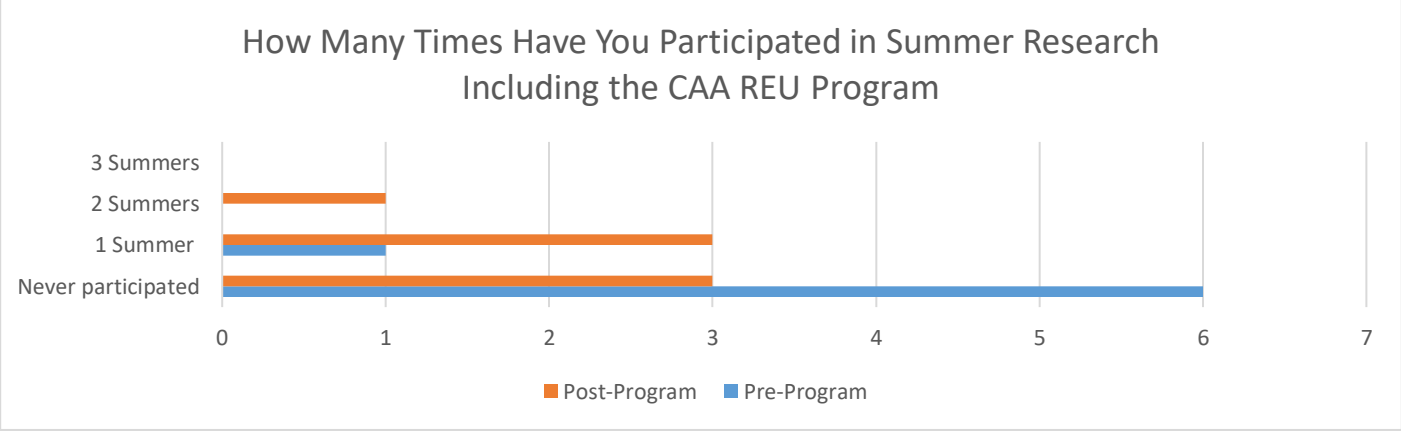
Students were asked to identify their year in college.



Section Comments and Ideas for Moving Forward: The staff and faculty of the CAA REU may wish to assess subjectively from actual experiences during the program whether or not the younger or the older students benefited more from the program. And, thereafter, marketing materials should be adjusted to reflect those conclusions.

Section on Summer research

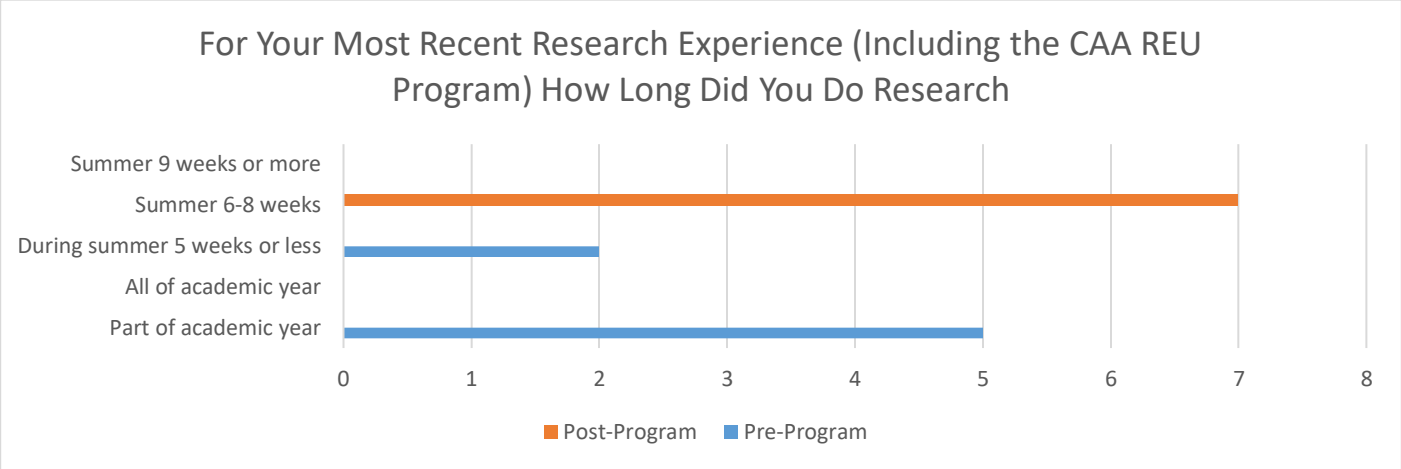
Students were asked to identify how many times, including the CAA REU program, they had participated in Summer research.



Section Comments and Ideas for Moving Forward: It is possible that this survey question was misunderstood as there should have been zero responses of "never participated" in the post-program survey. The question should be re-worded for clarity if this same survey instrument is utilized next year.

Section on Duration

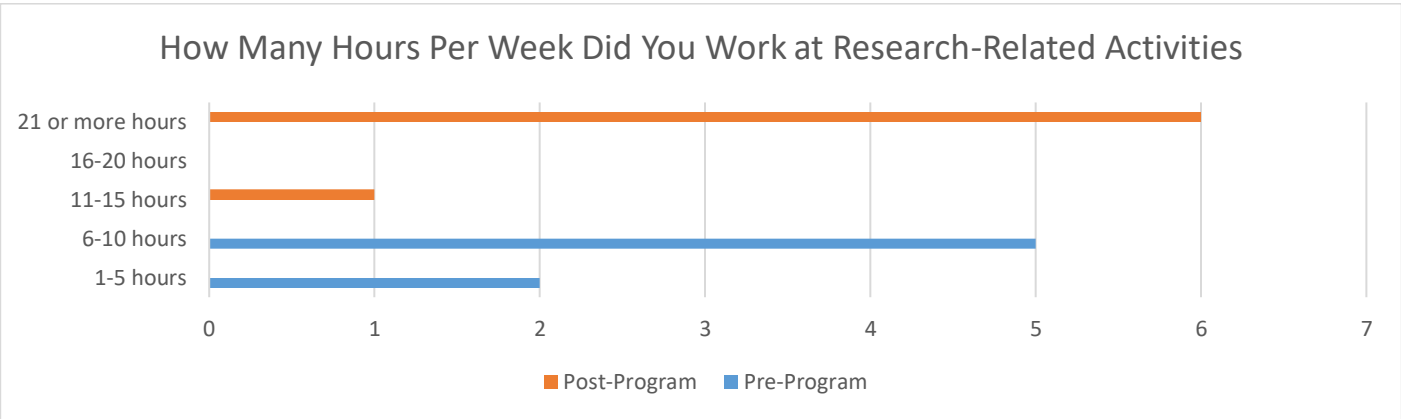
Students were asked about the duration of their research experience including the CAA REU program.



Section Comments and Ideas for Moving Forward: The pre-program data indicated that five of seven students had not participated in a long, summer program prior to attending the CAA REU. Good preparatory materials combined with good communication during the program can mitigate challenges for unexperienced participants. The CAA REU staff and faculty should develop quality printed materials with sufficient details about the program, the facilities, and the expectations of the staff and faculty for use in marketing the 2019 program. During the program, staff and faculty should focus on communicating with students about the details of the program, any changes in activities, expectations, etc. on a consistent basis. In addition to being good teaching, such an approach will make the students feel like they are a part of the research team.

Section on Research Activities

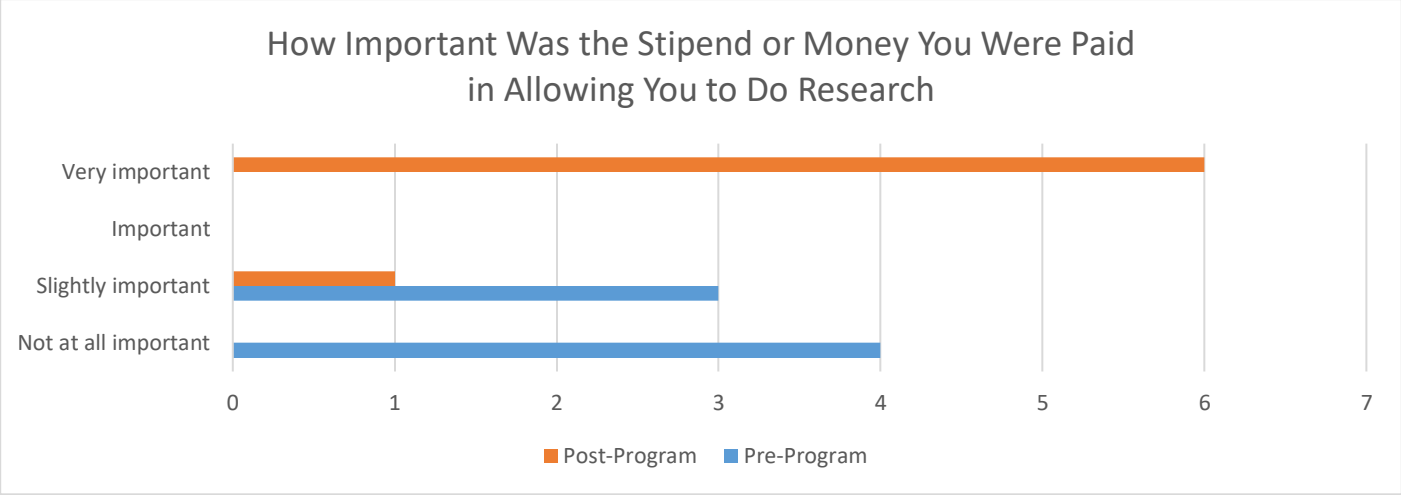
Students were asked about their weekly participation in research activities.



Section Comments and Ideas for Moving Forward: The pre-program data demonstrated that all seven students came into the CAA REU with very little experience in conducting research. Therefore, the staff and faculty of the program may want to consider the inclusion of a program component early in the program focusing on how students should approach scaling up to the level of research expected in this program.

Section on Financial

Students were asked one financial question.



Section on Feedback about CAA's REU Program

Students were asked to provide text responses to the question "What would have made your research experience better?" Below are the unedited text answers.

"14 hour work days were a little long, it would've been more productive to have shorter days, such as maybe moving lab to before supper."

"The people I got tow (sic) work with everyday were a real treat and made the experience"

"Better living situations in the dorm, such as better air conditioning and better showers/bathrooms."

"Better meals would have improved this experience tremendously."

Section Comments and Ideas for Moving Forward: The CAA REU staff and the faculty need to seriously consider the comments made, and, if the comments are determined to be legitimate, changes should be made to how the program is marketed and how the program is administered. For example, housing at CAA is rustic but comfortable and students can be informed of the conditions prior to the program if marketing materials are developed to reflect the actualities of housing. If it is determined that communication of activities and expectations with the students was indeed lacking in 2018, a diligent effort to develop a detailed syllabus/itinerary should be made for the 2019 program. If meals were indeed poor in 2018, other arrangements should be made for 2019 (e.g., taking students to a grocery store once a week, arranging for catering from a nearby community, or contracting with a cook).

Appendix A

Student Project Summaries

Calhoun County Landscape, Infrastructure & Cultural Identity

John Jadrich and Morgan Tanner

In July of 2018, we conducted an exploratory ethnographic research project on behalf of the Center for American Archeology. This research, centered in Calhoun County, Illinois, focused on the natural landscape and the inhabitants of the county. Our research included surveys and structured interviews meant to gather qualitative data about cultural identity, history, and agriculture. Our focus in this research identified the landscape as a prominent factor in shaping the cultural identity of the inhabitants in the region. The geographic isolation of this area has led to a paradox; to maintain their cultural identity, they must sacrifice elements of economic development. In turn, to benefit from economic and infrastructure development, they must give up a part of their cultural identity that they have held since the mid 1800's. In this poster, we explore the common themes that we felt were centered around the landscape and cultural change over time.

Exploring Contemporary Agricultural Identity: Community, Landscape, and Connections to the Past

River Fuchs

Archeologists often perceive a divide between the local community and "arkies," as well as an assumption that private landowners neglect to report finds for fear of outside interference. By exploring the identities, perceptions, and suggestions of local farmers, archeologists can gain insights on how to better relate to and communicate with community stakeholders concerning shared concerns of preservation and stewardship. During the summer of 2018, eight students from the Center for American Archeology conducted exploratory surveys of 11 farmers in Calhoun County, Illinois, in order to understand how farmers identify with their heritage, the landscape, the pre-Columbian past, and the implications of outside influences for archeologists. These exploratory interviews incorporated participant observation, freelists, material probing, and ranked and open-ended questions, yielding preliminary conclusions of the value of heritage, landscape, and personal sovereignty.

Why is Archaeological Little Barley Naked: A Carbonization Experiment

Monica Corley and Kathryn Kuennen

Little barley grains (*Hordeum pusillum*) are frequently found in the archaeological record carbonized and without the hull (naked) or other chaff. Processing experiments with little barley have failed to remove the hull, leading researchers to argue that the ubiquity of "naked" little barley indicates an ancient domesticated variety existed that is now extinct. This domesticated, hull-less variety of little barley would be ideal for its easy harvesting and processing. We wanted to know if the absence of chaff in the archaeological record could be the result of burning. In this experiment, we carbonized modern wild little barley grains at 450º for three and six-hour increments in order to determine whether or not various parts of the chaff would be destroyed during carbonization. Our results indicated that carbonization does not result in "naked" little barley grains, providing further support for the conclusion that archaeological little barley is an extinct domesticate.

Sumac for Food or Ceremony? Paleoethnobotanical Analysis of Middle Woodland Medicinal Plants

Wendi Wingerson

Paleoethnobotanical analysis of Middle Woodland (ca 50 BC - AD 400) sites in the Lower Illinois Valley has focused on revealing patterns in ancient subsistence strategies. While diet and nutrition has been studied in depth, there has been a lack of research on the medicinal uses of plants. To address this gap in our knowledge, two previous paleoethnobotanical analyses were examined and 70 liters of flotation samples from a large feature were analyzed from the Mound House site (11GE7), Greene County, IL. Mound House is a Middle Woodland mound site dating to 50 BC to AD 400 that is theorized to be a floodplain mound center or seasonal civic-ceremonial site. These analyses show concentrations of medicinal plant remains in greater quantities than other Middle Woodland sites. These plants are reported to hold ceremonial or 'alterative' qualities that may have been used during ceremonies at Mound House and sites like it.

The Golden Eagle Site (Illinois): An Attribute Analysis of Lithics

Blaine Burgess and Dana Mineart

The Golden Eagle site (11C120), Calhoun County, IL is a presumed Middle Woodland (ca. 50 cal BC—cal AD 400) mound-and-enclosure site located on the Deer Plain Terrace near the confluence of the Mississippi and Illinois Rivers. Artifacts, while uncommon, are present from the Archaic through Mississippian periods. Lithics can be used to interpret technological, cultural, and chronological patterns. Because lithics are the dominant artifact type at Golden Eagle, this is a promising approach for understanding this enigmatic site. We conducted an attribute-based analysis of debitage from 41 excavation units, and applied attributes to 2372 lithics: chert type, weight, cortex, retouching, heat treatment, average thickness, and whether it is uniface or biface. Our goal is to understand lithic accumulation temporally and spatially in order to reveal cultural tendencies, which can help determine the function of the site on its own and place it in regional context.

Appendix B

Dear Students:

We have created an online survey to help assess your learning gains during the 2018 Center for American Archeology's (CAA) Research Experiences for Undergraduates (REU) Program. Please fill out the pre-program survey carefully.

The pre-program survey will be open from Thursday May 24, 2018 to Thursday May 31, 2018.

Please follow the instructions below to access the pre-program survey:

* Go to https://salgsite.net/student
* Fill in your email address
* Enter the instrument number: 82019
* Provide the instrument password: PRECAAREU2018

Your responses are completely confidential: We can tell who has filled out the survey but cannot tell which answers belong to which person.

As this is a pre-program survey, many of the sections MAY NOT apply to you. As indicated in the student instructions on the survey, choose "not applicable" for any questions that do not apply to you. For the 2018 CAA REU program, it is important that we compare your most recent research experience via this pre-program survey with your CAA REU experience which will be assessed via a post-program survey.

Please email mereaconsulting@gmail.com with any survey questions you may have.

Respectfully,

Phil Baca & Lynn Thompson Baca
MEREA Consulting, LLC
www.mereaconsulting.com
+1 (505) 660-7984

Appendix C

Please take a few minutes to fill out the CAA REU Post-Program survey, using the instructions below. To complete the survey, you will need to:

* Go to https://salgsite.net/student
* Fill in your email address
* Enter the instrument number: 82007
* Provide the instrument password: CAAREU2018

It should take about 15 minutes to complete, perhaps more if you use the comment boxes extensively. **The survey will be open from Saturday, August 04, 2018 to Saturday, August 11, 2018.**

As with the pre-program survey, the survey is completely confidential: I will know who filled out the survey, but I will not know which answers are yours.

Thank you in advance for your cooperation in this effort to evaluate the effectiveness of the CAA REU. Your input will help us make this an even better experience for future students!

Respectfully,

Phil Baca
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