Crafton Hills College
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Research Brief

Results from the 2015 Sci Fri Event Evaluation for High School Students Interested in STEM

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Purpose of Brief

Approximately 161 high school students attended Crafton's Third Annual Sci Fri event. Sci Fri is the college's spring outreach event targeting local high school students who express an interest in pursuing a STEM major. Students listened to a keynote speaker and participated in workshop sessions related to STEM. This brief examines the results of the event's evaluation completed by 62 students who participated in the 2015 Sci Fri Event.

Summary of Findings

Student Plans after Graduating High School

The most prominent plans after high school graduation were:

- Attend Crafton Hills College (43%)
- Attend another community college (30%)
- Attend a 4-year college or university (30%)

Overall Event Satisfaction

Over 90% of the respondents agreed or strongly agreed with the following statements:

- After today's visit, I learned more about the STEM programs at Crafton Hills College.
- Overall, I am satisfied with today's visit to Crafton Hills College.

The respondents *were least in agreement* with:

- I felt motivated by the keynote speaker to pursue an education in science, technology, engineering and/or mathematics (STEM) (69%)

Workshop Sessions

90% rated the Chemistry Workshop as *"Good"* or "Excellent"

77% rated the Microbiology Workshop as *"Good"* or "Excellent"

68% rated the Computer Science Workshop as *"Good"* or "Excellent"

Overview

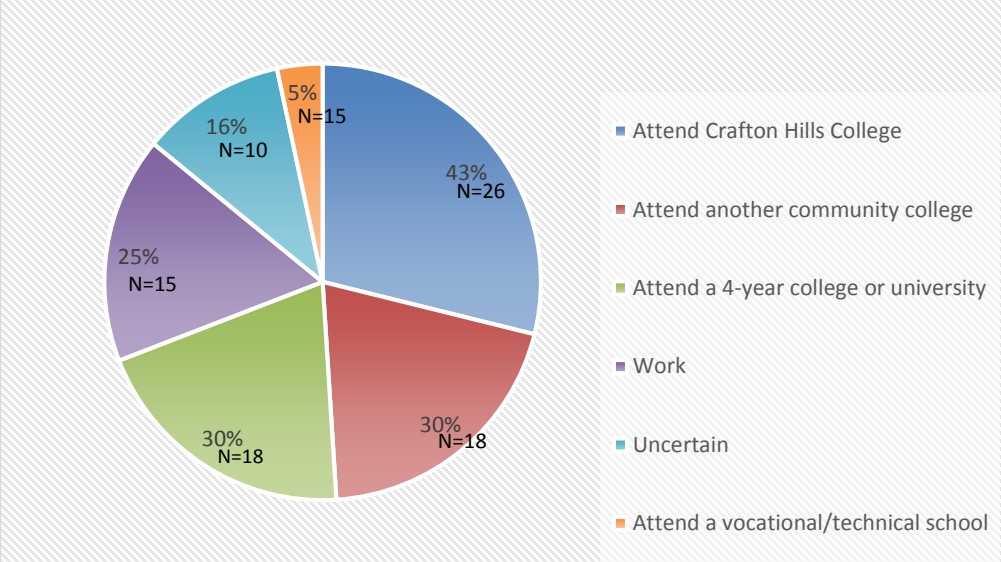
Figure 1, and Tables 1 and 2 illustrate results from the Sci Fri event evaluation completed by local high school students who participated in the 2015 Crafton Hills College Sci Fri event. The event presented students with an opportunity to learn more about Science, Technology, Engineering and Mathematics (STEM) majors and education at Crafton through several related activities. The evaluation prompted respondents about their future plans after graduating from high school, their level of agreement with four statements about the event activities, and ratings of four different workshop sessions, including the keynote address.

Findings

Students who responded to the survey were very satisfied with the SciFri event. The results indicated that the Chemistry workshop was the most influential for students. In addition, students suggested to have a shorter introduction from the keynote speaker and more hands-on activities.

Students were asked what their plans were after high school. They were able to choose more than one answer. Forty-three percent of students plan on attending Crafton Hills College. Thirty percent plan to attend another community college and 30% plan on attending a 4-year college.

Figure 1: Respondent plans after high school graduation.



Note: Some respondents selected more than one category for their plans after HS

Students were asked if they agreed with the statements below. Ninety-two percent either strongly agreed or agreed that they were satisfied with the visit to Crafton Hills College. In addition, 95% either strongly agreed or agreed they learned more about the STEM programs at Crafton Hills College.

Table 1: Respondents level of agreement with statements about the 2015 Sci Fri event.

	Strongly Agree		Agree		Disagree		Strongly Disagree	
Statement	#	%	#	%	#	%	#	%
Overall, I am satisfied with today's visit to Crafton Hills College.	40	64.5	17	27.4	4	6.5	1	1.6
After today's visit, I learned more about the STEM programs at Crafton Hills College.	29	47.5	29	47.5	2	3.3	1	1.6
Today's visit increased the likelihood I will major in a STEM field in college.	16	27.1	27	45.8	13	22.0	3	5.1
The keynote speaker was informative and interesting	14	22.6	37	59.7	7	11.3	4	6.5
I felt motivated by the keynote speaker to pursue an education in science, technology, engineering and/or mathematics (STEM).	14	22.6	29	46.8	13	21.0	6	9.7

Note: The total number of responses to each question varies because respondents did not answer every question.

Students rated each session they attended. Ninety percent rated Chemistry either excellent or good, 77% rated Microbiology either excellent or good, and 68% rated Computer Science excellent or good.

Workshop Sessions

Table 2: 2015 Sci Fri session ratings for Chemistry, Microbiology and Computer Science.

	Excellent		Good		Average		Poor	
Session	#	%	#	%	#	%	#	%
Chemistry	46	74.2	10	16.1	3	4.8	3	4.8
Microbiology	28	45.2	20	32.3	12	19.4	2	3.2
Computer Science	12	19.4	30	48.4	14	22.6	6	9.7

Students responded to what they enjoyed the most at the Sci Fri event. The responses were categorized in groups by Chemistry, Labs, Engagement with others, Computer Science, Food and additional comments.

Responses to open-ended questions

When respondents were asked what they enjoyed most about the Sci Fri event the Chemistry portion and labs received the highest responses with both having 19 responses. All responses are provided below as well as additional comments that were not within the themes.

Chemistry (n=19)

- Chemistry
- Chemistry and lunch
- Chemistry experiments
- Chemistry!
- I enjoyed the most SciFri is how to see the different changes in Chemistry.
- I enjoyed doing the lab in Chemistry.
- I enjoyed the Chemistry lab.

- I enjoyed the Chemistry where she tied in the lab with CSI
- Lunch time and I really enjoyed Chemistry.
- The Chemistry
- The Chemistry class was very interesting.
- The Chemistry lab.
- The Chemistry labs.
- The Chemistry labs are really fun. Computer Science was interesting.
- The Chemistry portion.
- The Chemistry section.
- Chemistry workshop I found interesting.
- The enthusiasm from Chemistry was cool.
- The led test for Chemistry.

Labs (n=19)

- Finding the criminal.
- I enjoyed the labs more.
- I enjoyed participating in the activities
- I enjoyed the hands on labs.
- I enjoyed the labs in all of the courses. The Professors were excellent! Lunch was also awesome.
- I got to do hands on activities.
- I liked the interactive things, and I lied the interaction the teachers had with us. Food was great.
- I liked Microbiology lab. It was really interesting.
- Insecting
- Make an app on the computer.
- Making my own app.
- Seeing the students in the bio and chem lab, working together, practicing what they know but also learning.
- Taking apart a termite.
- The different types of activities, it gives us a preview of what we can expect in college.
- The Forensics part
- The instructor and activities.
- The labs and activities. The helpful instructors and lunch.
- The labs were good, teachers were easy to follow.
- What I enjoyed most was microbiology because we got to experience and learn new things about led.

Engagement with others (n=4)

- I loved meeting the teachers. I like to connect with my teachers.
- Being around others who care.
- I enjoyed being around people and learning new stuff.
- Meet people, learned new things.

Computer Science (n=4)

- I enjoyed the computer science a little more due to the fact that I enjoy creating programs.
- The computer science
- The computer lab
- The crime scene aspect of Chemistry, why microbiology is important, and fun way to use computer science.

Food (n=3)

- Cuca's burrito
- Food
- The Forensic lab, food & snacks

Additional comments

- I enjoyed everything.
- I enjoyed how well each session was explained.
- I got to learn more things about it.
- Informative, fun, interesting, the hands on!
- The experience itself

Respondents were also asked how Sci Fri can be improved. Respondents proceeded additional comments. Most of the suggestions involved the labs (N=13) followed by the opinion that improvements were not needed (N=11), and the keynote speaker (N=8). Specifically, respondents felt that the labs needed to be more fun and the keynote speaker needed to be more informative and interesting.

Labs (n=13)

- By making the other labs more fun.
- Don't make the labs boring.
- Have more time to do the activities.
- Have more hands-on activities.
- Interesting stuff to do.
- Less slideshows and more hands on.
- Maybe have a more interesting Chemistry workshop.
- Maybe with the Computer Science they should help more on how to make the apps they just said go to the website and pretty much said figure it out.
- More group activity time, less lecturing.
- More varieties of Science.
- They need to give a bit more direction.
- Try a different lab instead of science app maker.
- You guys could put more activities.

No improvement needed (n=11)

- All went well and was fun.
- Everything is great
- I liked it a lot. I don't believe that it needs improvement. Also, the professor were really fun and nice.
- I was satisfied with SciFri.
- It seems great
- It's fine as is.
- It's perfect to me.
- Nothing
- Nothing, it's most interesting.
- Nothing, keep up the good work.
- You don't have to improve it.

Keynote speaker (n=8)

- Don't spend 40 minutes talking about one topic, in the beginning, because it wasn't interesting and I didn't understand most of it.
- Have more interesting speaker.

- I believe the keynote could've been more informative on how to utilize STEM in careers. It felt like a class lecture I couldn't understand.
- Intro speech more interesting.
- Keynote speaker not to talk too much, and microbiology explain what words mean.
- Make it less boring and tedious in the beginning.
- More hype speakers. Too dull.
- Short talks or multiple keynote speakers.
- The Keynote speaker was a little too specific. Lost most students. More general towards graduates.

Food (n=4)

- Better food!
- Chips from Cuca's
- Fix vending machines.
- More snacks. An outside activity.

Additional Comments

- Computer science was very frustrating. Listing possible careers that would be available if we were to major in field. Talk more about STEM programs and benefits!
- Have more time to socialize with Students and Faculty.
- Interesting stuff to do.
- Less slideshows and more hands on.
- Maybe with the computer science they should help more on how to make the apps they just said go to the website and pretty much said figure it out.
- More discipline for students. (e.g., no phones during keynote speech)
- More dissecting
- More participants.
- More varieties of science.
- More variety of the STEM fields.
- The programming section was not up to my expectations.
- They need to give a bit more direction.
- To put games
- Try a different lab instead of science app maker.
- We can improve Sci Fri by recycling and save energy.
- You guys could put more activities

Methodology

The Sci Fri event occurred on the Crafton Hills College campus, during two days, February 20 and 27, 2015. The students who participated completed an evaluation where they provided valuable feedback on the event. The evaluation consisted of a multiple-choice question to determine the respondent's plans after graduating from high school. Respondents were also asked to rate their level of agreement with four statements about the event on a Likert four-point scale, 4 = Strongly Agree; 3 = Agree; 2 = Disagree; 1 = Strongly Disagree, and rate the four sessions they participated on the following four-point scale; 4 = Excellent; 3 = Good; 2 = Average; and 1 = Poor. In addition, the evaluation gave respondents the opportunity to provide open-ended feedback on what they enjoyed the most and how Crafton could improve the Sci Fri event.

Any questions regarding this report can be directed to the Office of Institutional Effectiveness, Research, and Planning at (909) 389-3331 or you may send an email to cgundersen@craftonhills.edu.