



THE
PAST FOUNDATION

Clean Technologies Early College High School

2017 Alumni Survey Report

Ballston Spa Central School District
Ballston Spa, New York
Dr. Joseph P. Dragone, Superintendent

KNOWLEDGE CAPTURE PROGRAM

PAST Foundation

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Clean Technologies Early College High School: 2017 Alumni Survey Report

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Clean Technologies & Sustainable Industries Early College High School Program

Evaluation of Student Alumni Survey

The Clean Technologies & Sustainable Industries Early College High School Program (Clean Tech ECHS), in partnership with the PAST Foundation Knowledge Capture Program, conducted a survey of Clean Tech alumni to gather data regarding particular aspects of the Clean Tech student experience during enrollment at the ECHS and post graduation as college students or in their current work/job experience. The survey was designed to identify key measures of impact of the ECHS experience for graduates as they pursue post-secondary education goals, explore career options, and continue to develop as young professionals entering STEM fields. This evaluation report integrates quantitative and qualitative data to create a holistic understanding of the Clean Tech post-graduate experience.

The document provides a short narrative analysis of survey findings and also includes three additional sections:

- Infographic Report with a subset of eight questions focused on significant aspects of the Clean Tech student experience and comparative view of alumni current experience in college and/or benefits of the Clean Tech program for job and career development (see *Appendix A: Clean Tech Alumni Survey: Infographic Summary of Survey Data*).
- A survey report presenting the complete set of survey questions (n=37) and responses (see *Appendix B: Alumni Survey Report, July 21, 2017*).
- A survey instrument designed for use in 2017 for the Clean Tech Program to conduct in future years to develop comparative data sets of program outcomes for Clean Tech graduates as they pursue college and career goals (see *Appendix C: XX*). This survey instrument includes 19 questions that were originally developed for use in prior years by the Clean Tech Program providing comparative data with earlier surveys.





The survey was conducted over a 40-day period (May 3 – June 12, 2017) via SurveyMethods®, a web-based secure survey platform. Outreach to Clean Tech student alumni was conducted by the Clean Tech Program via email, Facebook, and (other modes of outreach?). An estimate of the total number of alumni receiving the survey invitation ($n=X$) is based on the Clean Tech Alumni contact list. A total of 15 alumni completed the survey for a response rate of $x\%$. Based on current studies of externally conducted surveys (including web-based surveys), study findings show that this mode of conducting an external survey typically results in a small response rate (as low as 10%). In comparative analysis of surveys with lower response rates and those receiving higher response rates, study findings show little difference in analysis of data collected at a higher response rate. Therefore a small response rate offers a valid representation of views of the larger targeted group (add citation).

Other factors to consider are the high percentage of respondents who are currently enrolled in college (13 of the 15), as they are more likely to be focused on active career planning and development. Of the (15) respondents (12) are male, and of the total respondents 73% are graduates of the Clean Tech ECHS class of 2015. Additionally, of the (15) alumni, 60% ($n=9$) of those completing the survey were interested in becoming mentors of current Clean Tech students and provided information in order to be directly contacted by the Clean Tech Program to follow-up to initiate involvement as mentors in the program (see *Appendix A: Infographic Summary of Data*, pg. 3, "Who took this survey?").

Clean Tech Alumni: Perceptions of College and Career

Table 1: "Credits Earned and Credits Transferred," integrates survey Qs 6-8 based on college credits earned at Clean Tech. Of the (14) respondents currently enrolled in college, respondents were asked how many credits transferred to their current college program. Of the (15) respondents, five earned 21 to 26 credits, and three earned 16 to 18 credits, and five earned 5 to 7 credits or were unable to state how many credits earned while at Clean Tech. Table 1 also shows that three students transferred approximately 18-24 credits, while four students transferred 9-16 credits, and three transferred 3-7 credits. Only one student was unable to transfer credits to their college program (24 early college credits). It is likely





that this student enrolled in a college program outside the region of colleges associated with the Clean Tech ECHS.

Table 1: Early College Credits Earned and Transferred

Question 6: How many college course credits did you earn through the Clean Tech program? (n=13)	Question 7: Are you currently enrolled in college? (n=14)	Question 8: How many of the Clean Tech college course credits did you transfer to your college? (n=13)
Not sure	Yes	Very few
21	Yes	21
I don't know	Yes	13
16	Yes	10
16	Yes	12
Approx. 21	Yes	3
24	Yes	Most
18	Yes	18
26	Yes	9
Approx. 5	Yes	All except for 1 class
24	Yes	16
7	Yes	7
	No	
24	Yes	0





Questions 9-11 asked respondents to indicate their college major, degree, and expected year of graduation. Table 2 shows that nearly half at 40% (n=6), are enrolled in an engineering program and expect to graduate between 2018-2020.

TABLE 2: College Major, Anticipated Degree and Year of Completion

Question 9: What is your college major?
 Question 10: When do you expect to graduate?
 Question 11: What degrees are you planning to complete?*(n=13)

		College Majors, Year and Degree Anticipated					
		Engineering (Civil, Mechanical, Chemical, Biomedical) (n=6)	Business Administration, Finance (n=2)	Music Industry (n=2)	Liberal Arts, Math & Science (n=1)	Nursing (n=1)	Atmospheric Sciences (n=1)
Anticipated Degree	A.A.S.				2017	2018	
	B.A.	2020					
	B.S.	2018, 2019, 2020	2019	2018			2019/2020**
	M.S.	2019	2021				
	M.B.A.	2020***					

*Respondents were given the option of selecting more than one response category if applicable.

**One participant indicated graduation is anticipated in 2019 or 2020.

***Respondent is completing a B.S. in Civil Engineering and is planning to earn a Masters in Business Administration.

Table 3: College Major and Career Aspirations, integrates survey Qs 9, 20, & 24, including current job title. While 85% (n=13) report that they are currently working part time (Q19), less than half (40%) report they are currently working in a STEM field in their current employment. When asked about career interests (Q24), 70% (n=10) indicated an interest in pursuing a career in a STEM field, with the remaining three reporting an interest in Marketing or Human Resources.





TABLE 3: College Major and Career Aspirations

Question 9: What is your college major? (n=13)	Question 24: Which of the following best describes the industry or type of business you plan to pursue as a career in the future? (n=10)	Question 20: What is your current job title? (n=12)
Biomedical Engineering	Biopharmaceutical Nanotechnology	Lab Supervisor
Music Industry	Marketing	Specialist
Music Industry	Marketing	Specialist
Business Administration		Sales Associate
Civil Engineering Technology	Civil Engineering	Intern
Atmospheric Sciences and Electronic Journalism Arts	Climatologist	Wait staff
Nursing	Human Resources	Cashier
Liberal Arts Math and Science	Dept. of Environmental Conservation Officer	Cashier
Civil Engineering		Cashier; Summer Camp Staff
Civil Engineering	Sustainable Home and Product Design	University Office of Student Life/Student
Finance		Family Business (No title specified)
Chemical Engineering	Environmental Engineering	N/A
Mechanical Engineering	Clean Energy	





Clean Tech Alumni Survey: Infographic Summary of Survey Data

Appendix A presents a series of four one-page graphics with summary of data on reported student Clean Tech experiences including:

- “Who took this survey?” showing a one-page overview of characteristics of the (15) respondents (survey Qs 2,3,6, and 7).
- “Success in the Clean Tech Program,” comparing benefits of experience with program components for success in high school and importance of those experiences in pursuing college education and career development (Qs 27 and 28).
- “Clean Tech Teacher Impact,” giving alumni the opportunity to reflect on the ways in which Clean Tech teachers interacted with them as students and particular ways they may have been influenced by their teachers (Q29).
- “Applying Skills in College and Career,” (Q33) presenting a list of 14 skills and their frequency of use as a college student or on the job.

The infographic report is intended to be used as a standalone document focused on specific aspects of the Clean Tech Program and particular significance for pursuing college success and career aspirations.

Respondents were asked to rate the importance (*Very Important* to *Not Important*) of ten specific components of the Clean Tech Program (Q27 and Q28). In Q27, “**Exposure to learning in a different style in a unique environment,**” and “**Gaining college experience prior to high school graduation,**” were identified by 92% of alumni (n=12) to be *Very Important or Important* to success they experienced while enrolled as students at Clean Tech.

In comparing responses between Q27 (success at Clean Tech) and Q28 (success in college and career development), one category, “**School work involving research about real world problems,**” was identified by 92% of respondents (n=12) to contribute to success in both their work at Clean Tech and also in their current experience in pursuit of a college degree and preparing for a career.





Regarding impacts of teacher interaction while at Clean Tech, 100% of alumni (n=12)

Strongly Agreed or Agreed that teachers:

- **cared about their ability to succeed**
- **encouraged them to improve**
- **conveyed high expectations for accountability and professional conduct in school**

Among the seven categories regarding teacher interaction with students, 92% of alumni (n=12), *Strongly Agreed or Agreed* that teachers:

- **cared about their career aspirations**
- **inspired them to think outside the box**
- **challenged them in their studies**

Students were asked to identify skills gained while a student at Clean Tech from among a list of 14 particular skills (see Q32, n= 11 respondents). **Research skills**, and **team work/collaboration** were selected by 100% of respondents. Two other areas, **problem solving**, and **learning to communicate effectively with others/developing interpersonal skills** were identified by 91% of respondents (n=10). Developing **leadership skills** was identified by 82% of alumni (n=8).

A follow-up question (Q33) is presented in the infographic summary showing how often alumni currently use these particular skills in their college work and career development. Choosing from the same list of 14 skills potentially gained while enrolled at Clean Tech 100% of alumni (n= 11) reported they *Always* or *Very Often* use skills associated with **time management** and **problem solving**.

Additionally 91% of alumni (n=10) identified six skills gained from their experience at Clean Tech that they report currently using *Always* or *Very Often* including:

- **research skills**
- **ability to assess credible information**
- **confidence to persevere in unpredictable situations**
- **team work and collaboration**
- **effective interpersonal communication**
- **self-advocacy to achieve goals**





Conclusion

The 2017 Alumni Survey is designed to build on past efforts and expand a systematic process of tracking student experiences beyond graduation from the Clean Tech ECHS. The challenges associated with reaching out to alumni once they leave the Clean Tech Program can potentially be supported by new strategies to improve ways to remain connected with Clean Tech alumni. Additionally, gaining access to nine alumni who are interested in becoming mentors for current Clean Tech ECHS students is a major benefit of the 2017 survey event, and can also help in building a network of Clean Tech alumni, forming a high impact resource for current and future students of the Clean Tech ECHS.





APPENDIX:

Clean Technologies Early College High School: 2017 Alumni Survey Report

Appendix A:

Clean Tech Alumni Survey: Infographic Summary of Survey Data

Appendix B:

Clean Tech 2017 Alumni Survey Report





Appendix A: Clean Tech Alumni Survey: Infographic Summary of Survey Data





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Clean Tech Alumni Survey

Infographic Summary of Survey Data

by Monica Hunter, PhD., Maria Green Cohen,
Kayla Galloway, and Grayson Rudzinski



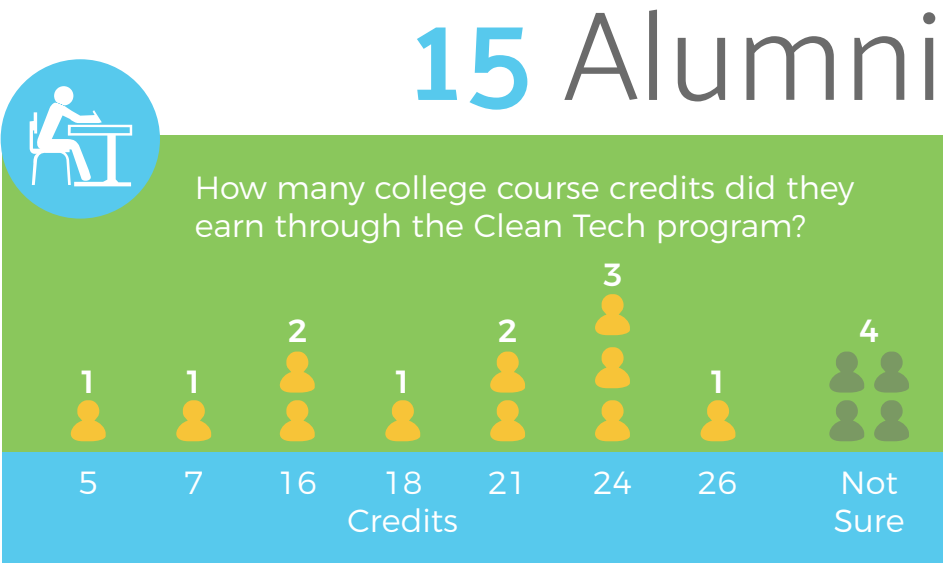
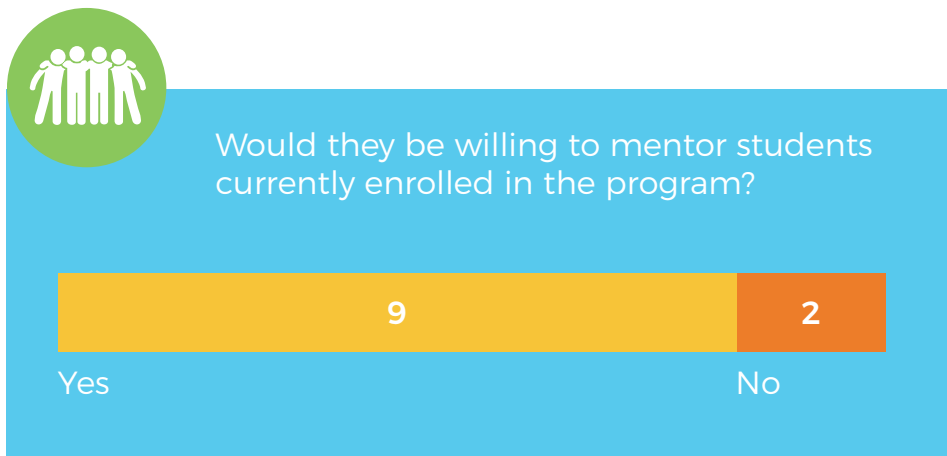
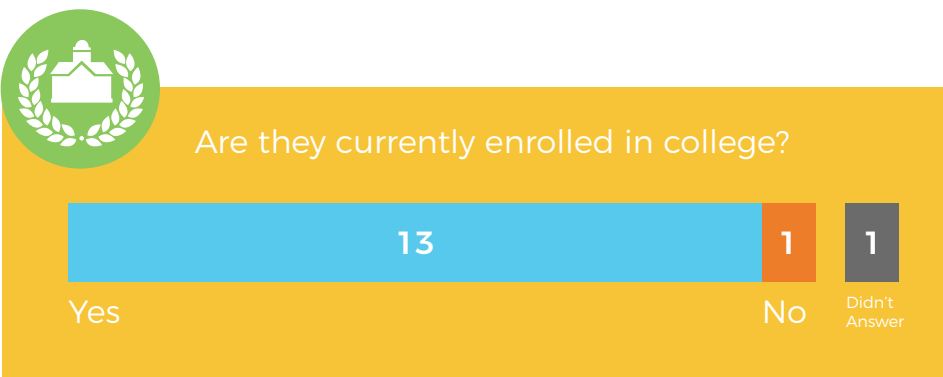
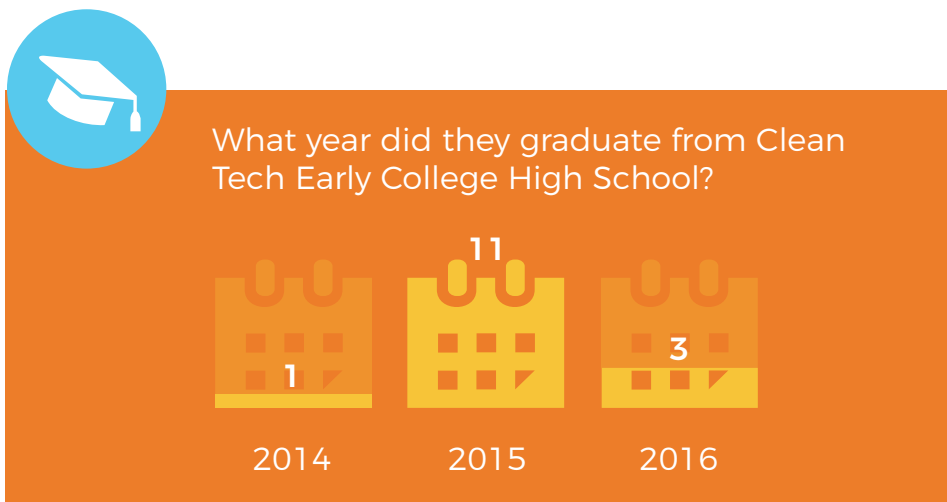
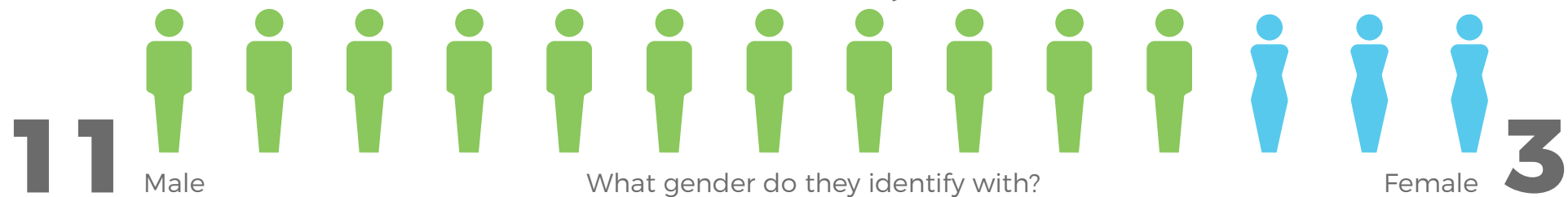
Objective:

This report is based on Clean Tech Alumni survey data from June 2017. This summary of data highlights views of Clean Tech graduates about particular aspects of their early college high school experience that contributed to gaining essential skills to prepare for success in college and career.

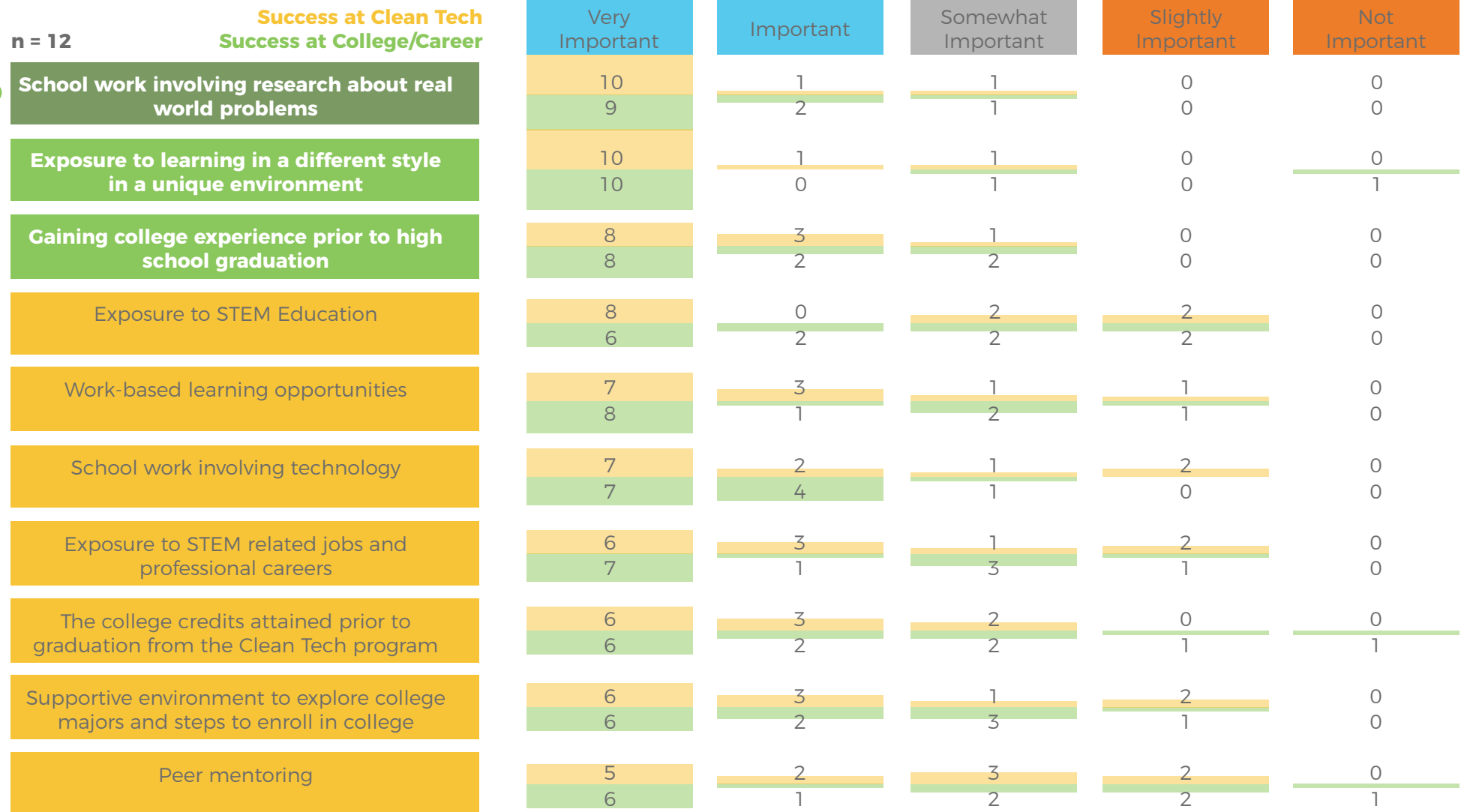
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Who took this survey?



Success in the Clean Tech Program



92%

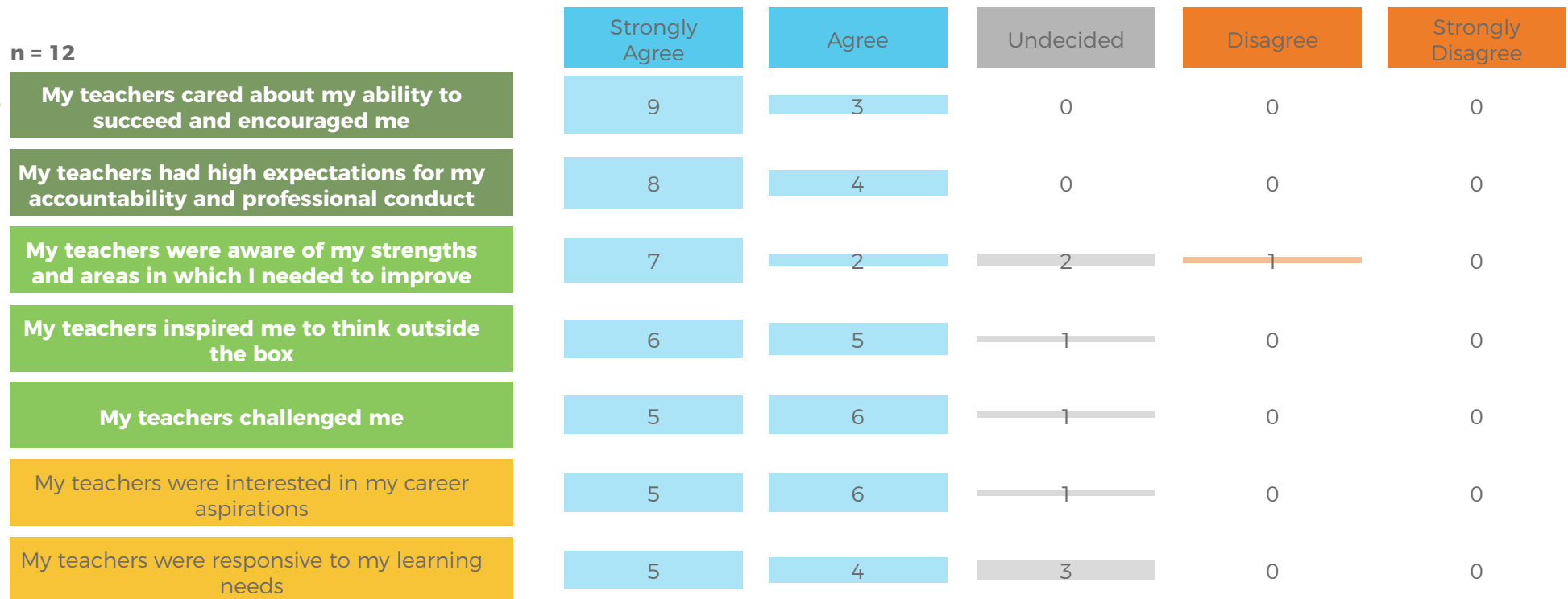
...of alumni thought exposure to unique **learning styles/environments** and **early college experience** was *Very important* or *Important* for success at **Clean Tech**.

...of alumni thought that work involving **technology** is *Very important* or *Important* for success in **college/career**.

...of alumni thought work involving research on **real world problems** was *Very important* or *Important* for success in **both** Clean Tech and in college/career.

Clean Tech Teacher Impact

n = 12



100%

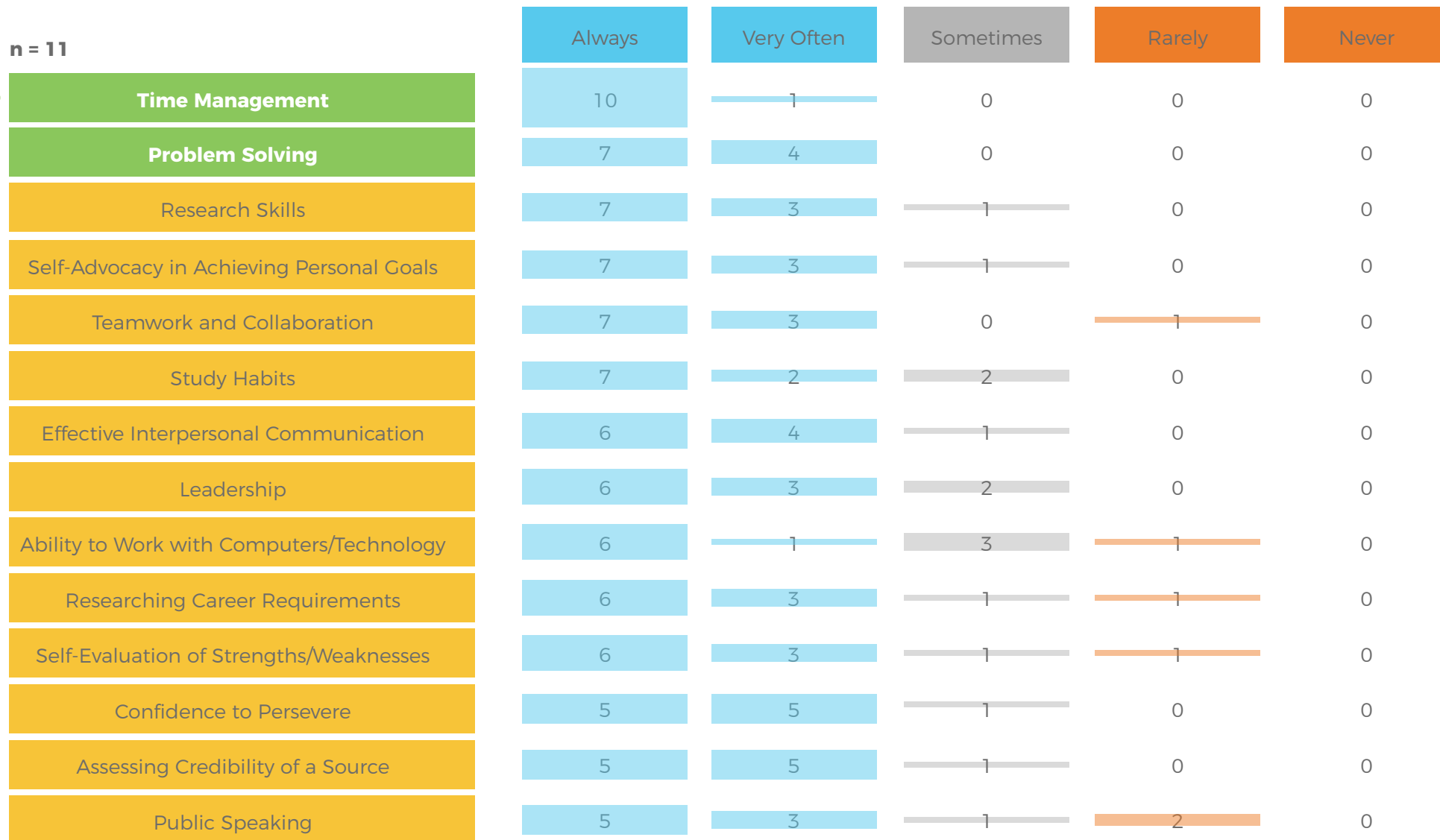
...of alumni *Strongly Agreed* or *Agreed* that teachers cared about their ability to succeed, encouraged them, and had high expectations for their accountability and professional conduct.

92%

...of alumni *Strongly Agreed* or *Agreed* that teachers cared about their career aspirations, inspired them to think outside the box, and challenged them in their studies.

Applying Skills in College/Career

n = 11



100%

...of alumni *Always* or *Very Often* use problem solving and time management skills at college or on the job.

Our Methodology:

The Clean Technologies and Sustainable Industries ECHS Alumni survey was launched on Wednesday, May 3 and closed on Monday, June 12. The survey was administered via a secure web-based platform (SurveyMethods®) designed for conducting a confidential and anonymous survey. Survey participants were asked to review survey protocols prior to voluntary agreement to participate in the survey.

About PAST KC:

PAST Foundation has over 17 years of experience working in schools nationwide. The Knowledge Capture Team provides evaluation services necessary to support project implementation and grant reporting.

Through our work, we have seen this approach guide real-time course correction, advancing both short-term and long-term goals that achieve critical outcomes.

Our Knowledge Capture program includes systematic analysis of transformative processes supporting successful K-12 STEM education initiatives. This is especially important for multiple-year implementation processes that often rely solely on student performance on standardized tests as the only measure of positive change.

PAST can help you track and prove your success.



Appendix B: Clean Tech 2017 Alumni Survey Report





Clean Technologies and Sustainable Industries ECHS Alumni Survey Report June 12, 2017

This document provides a report of survey responses for the Clean Technologies and Sustainable Industries ECHS Alumni Survey. The survey was completed by 15 Clean Technologies ECHS Alumni (n=15).

This report presents bar charts for survey responses to Qs 2-5, 12, 18/19, 21-26, 30, 32, 34, 36 and 37. Brief open-ended responses are presented in tables (Qs 6-8, 9-11). Brief open-ended responses can also be found in the Narrative Report (Tables 1, 2, and 3). Open-ended responses (Qs 31 and 35) are presented in a bullet point format. Qs 13-17 were intended for alumni who completed college, and no responses were recorded in the survey.

Appendix A also presents an Infographic Report consisting of a series of four one-page graphics providing a summary of a subset of survey data including Qs 2, 3, 6, 7, 27-29, and 33. The Infographic Report is intended to present particular data key to understanding how the Clean Tech experience has benefitted students pursuing college/career after graduation.

SURVEY PROTOCOL

The Clean Technologies and Sustainable Industries ECHS Alumni survey was launched on Wednesday, May 3rd and closed on Monday, June 12th. The survey was administered via a secure web-based platform (SurveyMethods®) designed for conducting a confidential and anonymous survey. Survey participants were asked to review survey protocols prior to voluntary agreement to participate in the survey.

SUMMARY OF SURVEY QUESTIONS AND ISSUES

Qs 2-5 are profile questions.

Qs 6-17 are questions regarding college status. Alumni were asked how many college course credits they earned through the Clean Tech program, and if they were currently enrolled in college. If respondents indicated they are currently enrolled in college, they were asked about transferring course credits to their college, their college major, when they expect to graduate, and degree they are planning to complete. If respondents indicated they are not currently enrolled in college, they were asked if they completed college.

Qs 18-26 are questions regarding employment status. Alumni were asked if they are currently employed. If respondents answered "Yes," they were asked if employed full-time or part-time, their current job title, if they are employed in a field they plan to build a professional career, if their current job is in a STEM field, if





Knowledge Capture

they plan to enter a STEM field in the future, and indicate from a drop-down menu which option best describes the industry or type of business they plan to pursue as a future career. Alumni who answered that they are not currently employed were asked if they plan to develop a career in a STEM field and which option from a drop-down menu best describes the industry or type of business they plan to enter in the future.

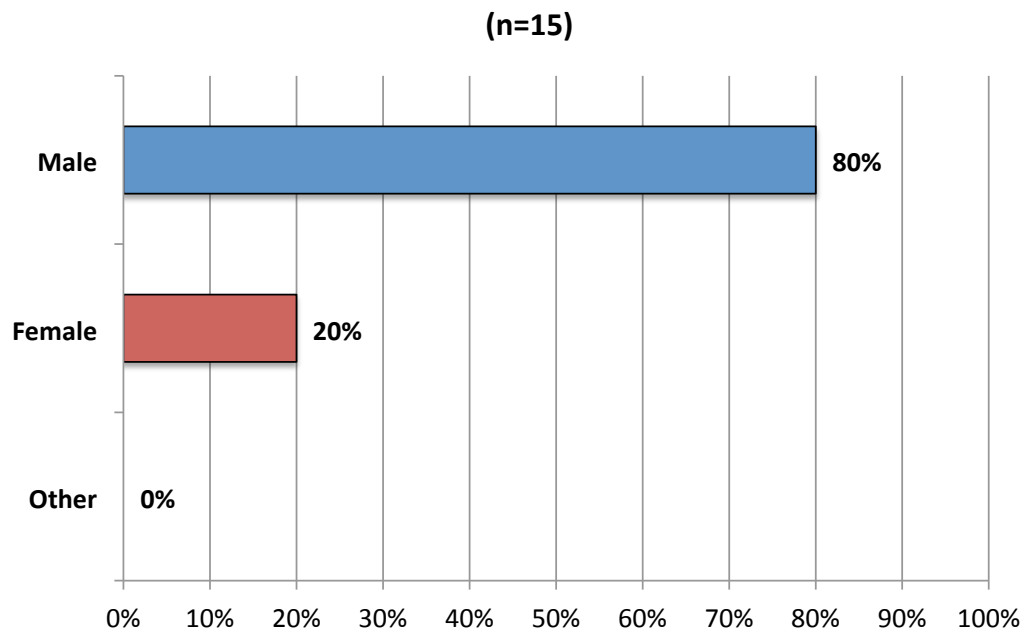
Qs 27-36 asked alumni to reflect on their Clean Tech Program Experience. Q27 and Q28 asked respondents about the importance of specific aspects of the program in relation to their overall experience as Clean Tech students, and the impact on their success in college and/or career. Q29 asked alumni about teacher engagement, and Q30 asked alumni about the importance of relationships developed while Clean Tech students. Q31 is an open-ended question asking alumni if someone inspired them during their time in the program, and if so why and/or how they were inspired. Q32-34 gathered feedback from the alumni about skills they gained through their experience at the Clean Tech program, how often they use those skills in their current college course work and/or job, and what Clean Tech experience helped them improve their skills and abilities as students. Q35 is an open-ended question asking alumni what advice they would give to a current Clean Tech student. Q36 asked alumni to rate the importance of Clean Tech high school and college courses to their overall success in the program.

Q37 asked alumni if they would be willing to mentor students currently enrolled in the program. The alumni who responded "Yes" to the question were rerouted to another survey on the same platform to enter their contact information, maintaining anonymity for Alumni Survey respondents.





Q2: What gender do you identify with?



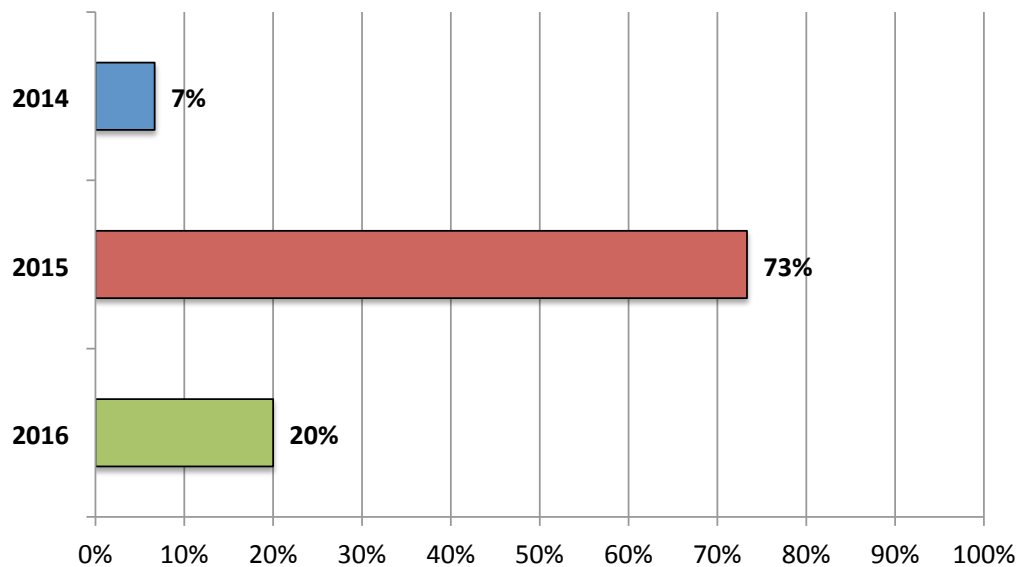
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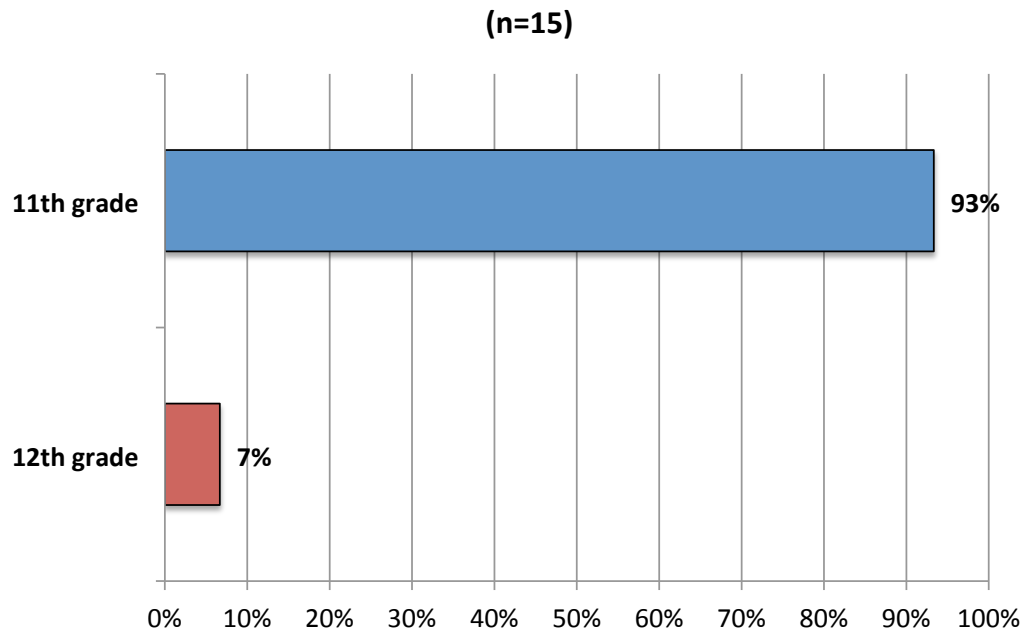
Q3: What year did you graduate from Clean Tech Early College High School?

(n=15)



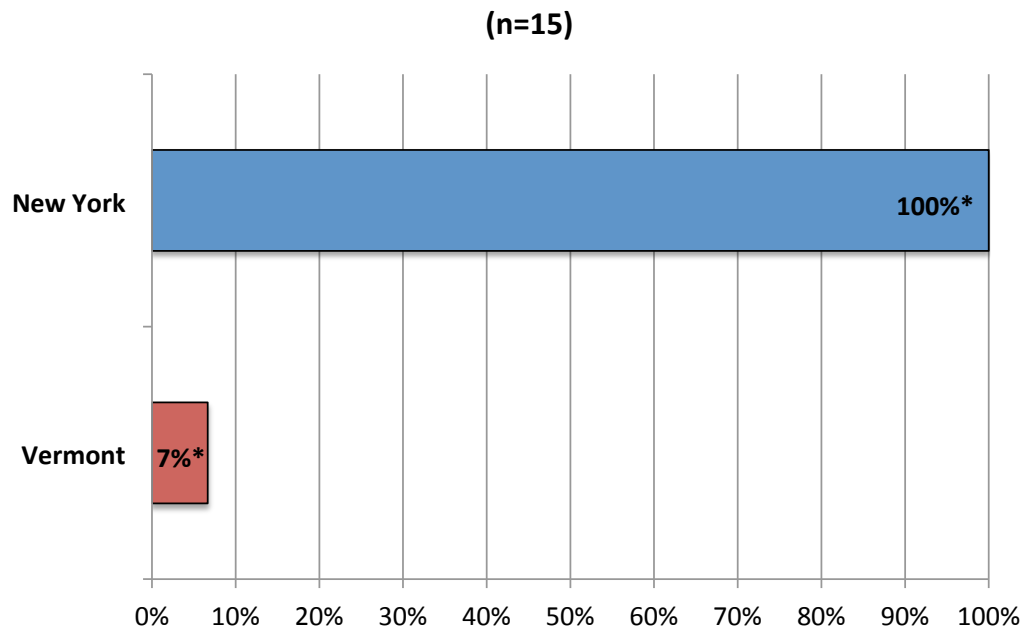


Q4: What grade level did you enter?





Q5: What is your current state of residence?



*One respondent answered that he or she is a resident of both the state of New York and the state of Vermont.





Qs6-8:

Question 6: How many college course credits did you earn through the Clean Tech program? (n=13)	Question 7: Are you currently enrolled in college? (n=14)	Question 8: How many of the Clean Tech college course credits did you transfer to your college? (n=13)
Not sure	Yes	Very few
21	Yes	21
I don't know	Yes	13
16	Yes	10
16	Yes	12
Approx. 21	Yes	3
24	Yes	Most
18	Yes	18
26	Yes	9
Approx. 5	Yes	All except for 1 class
24	Yes	16
7	Yes	7
	No	
24	Yes	0

(See also Table 1: Early College Credits Earned and Transferred, page 3 of the narrative report.)





Qs9-11:

Question 9: What is your college major?

Question 10: When do you expect to graduate?

Question 11: What degrees are you planning to complete?*(n=13)

		College Majors, Year and Degree Anticipated					
		Engineering (Civil, Mechanical, Chemical, Biomedical) (n=6)	Business Administration, Finance (n=2)	Music Industry (n=2)	Liberal Arts, Math & Science (n=1)	Nursing (n=1)	Atmospheric Sciences (n=1)
Anticipated Degree	A.A.S.				2017	2018	
	B.A.	2020					
	B.S.	2018, 2019, 2020	2019	2018			2019/2020**
	M.S.	2019	2021				
	M.B.A.	2020					

*Respondents were given the option of selecting more than one response category if applicable.

**One participant indicated graduation is anticipated in 2019 or 2020.

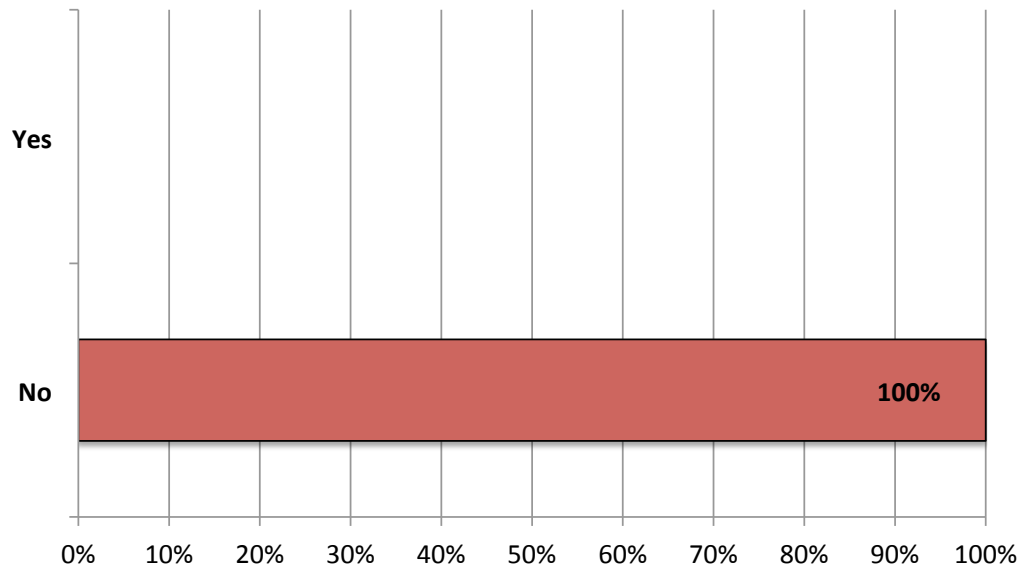
Q9 is also presented in *Table 3: College Major and Career Aspirations*, page 8 in the narrative report.





Q12: Did you complete college?

(n=14)

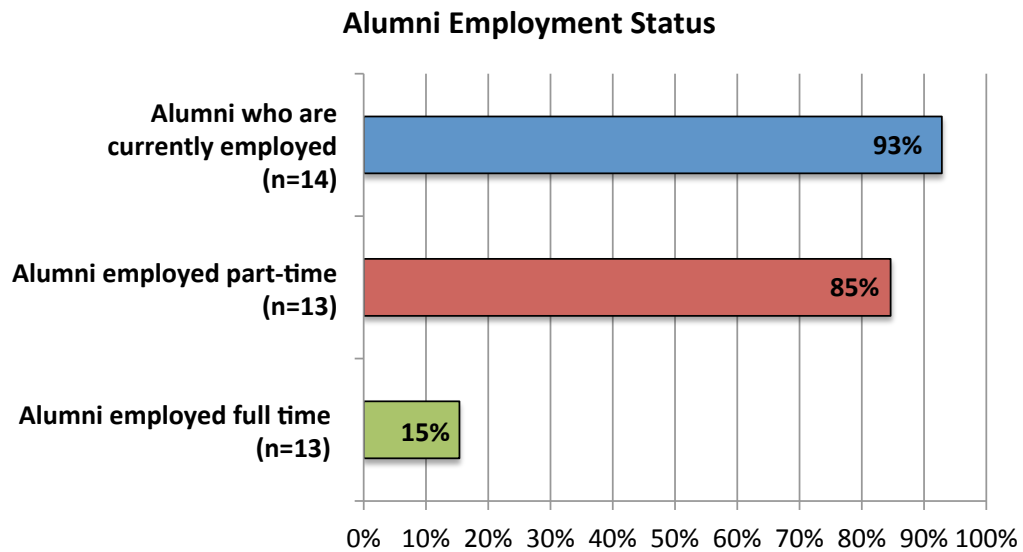


Note: Qs13-17 are not included in this report because none of the respondents have completed college.





Q18/Q19: Alumni Employment Status





Q20: What is your current job title? (n=13)

See *Table 3: College Major and Career Aspirations*,
page 8 in the narrative report.

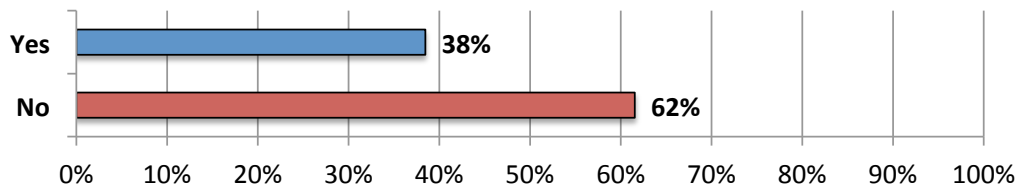
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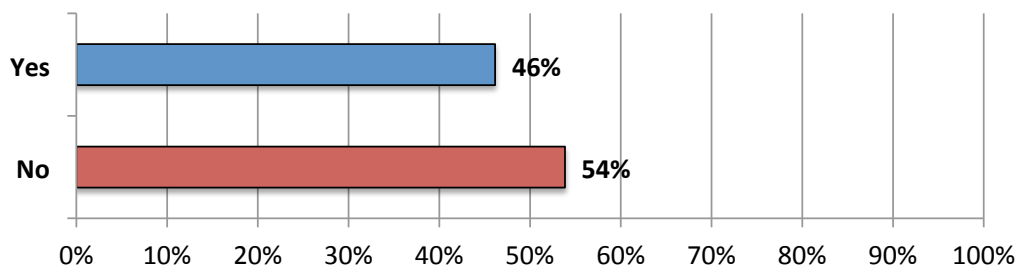


Qs21-23 and Q25: Employment Question Set

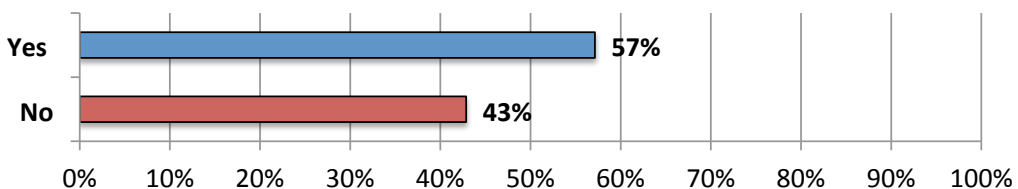
Are you employed in a field in which you plan to build a professional career?
(n=13)



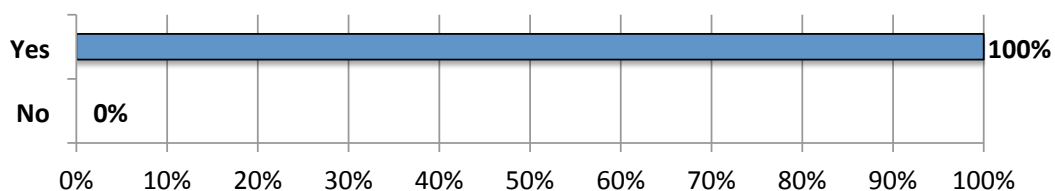
Do you think your current job is in a STEM field? (n=13)



If it is not in a STEM industry or business, do you plan to enter a STEM field in the future?
(n=7)

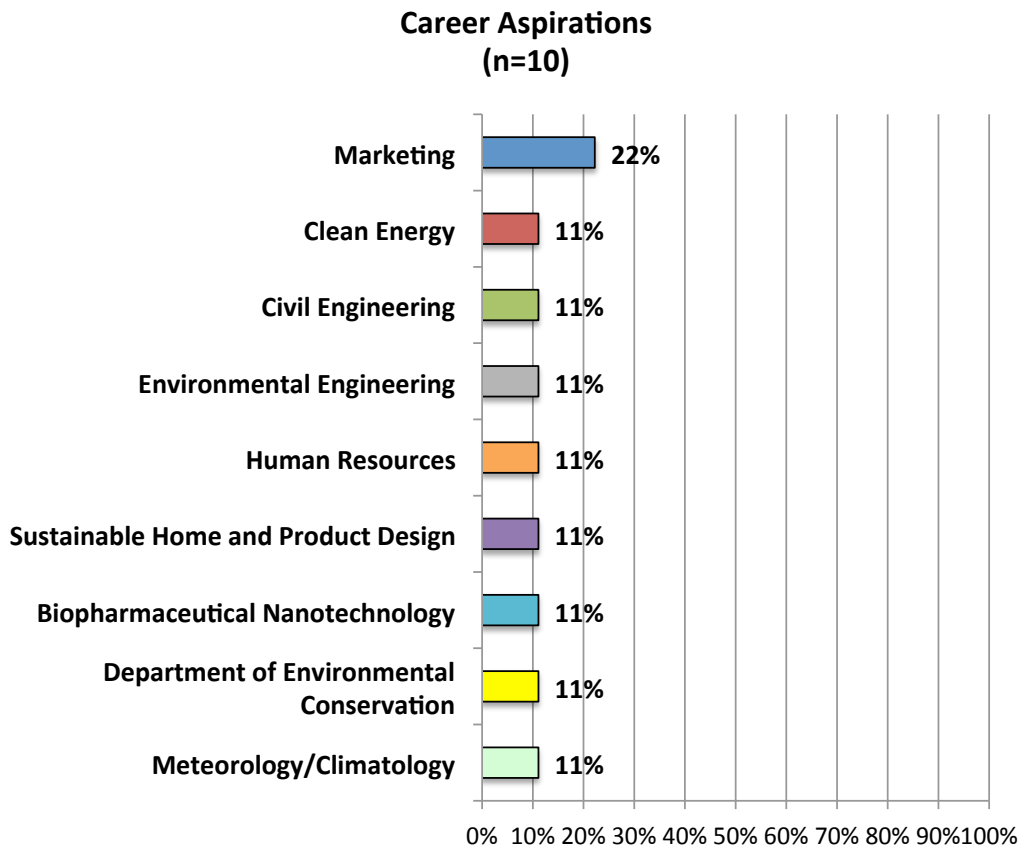


If you are not currently employed, do you plan to develop your career in a STEM field?
(n=9)





Q24/Q26: Which of the following best describes the industry or type of business you plan to pursue as a career in the future?



See Table 3: College Major and Career Aspirations, page 8 in the narrative report.





Q27: Which of the following were important aspects of your experience as a student in the Clean Tech program?
(n=12)

See Infograph "*Success In The Clean Tech Program*,"
page 20 in the Infographic Report, Appendix A.

Q28: In looking back at the Clean Tech program, which of the following do you think were important for success in college and/or career?
(n=12)

See Infograph "*Success In The Clean Tech Program*,"
page 20 in the Infographic Report, Appendix A.

Q29: Do you agree with following statements about your Clean Tech experience?
(n=12)

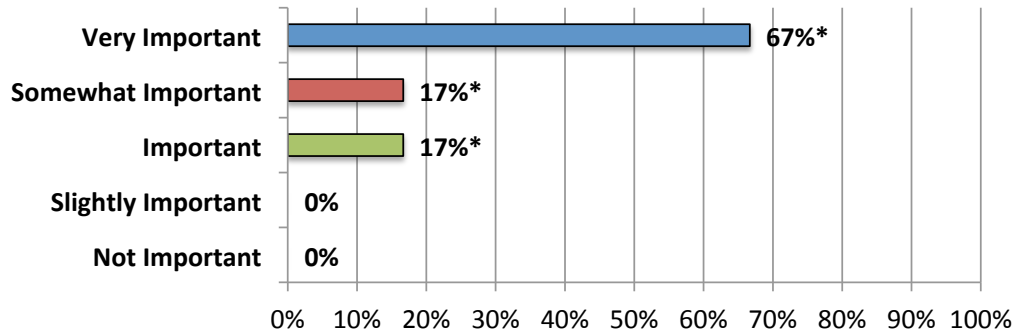
See Infograph "*Clean Tech Teacher Impact*,"
page 20 in the Infographic Report, Appendix A.



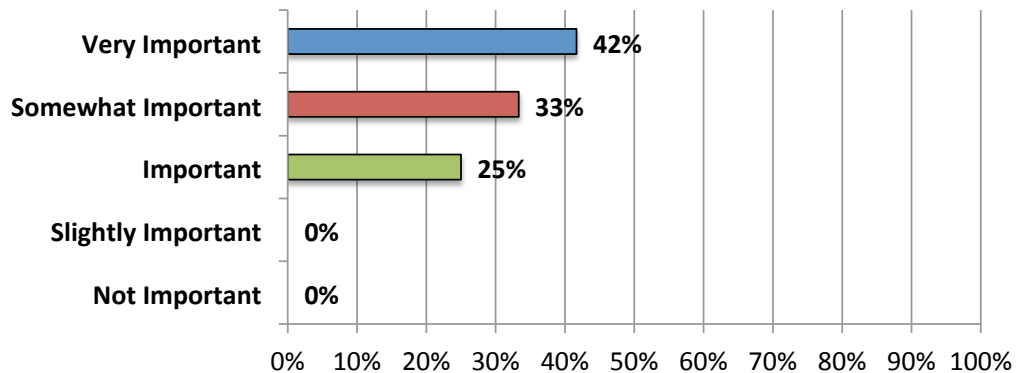


Q30: How would you rate the importance of the following aspects of your experience at Clean Tech? (n=12)

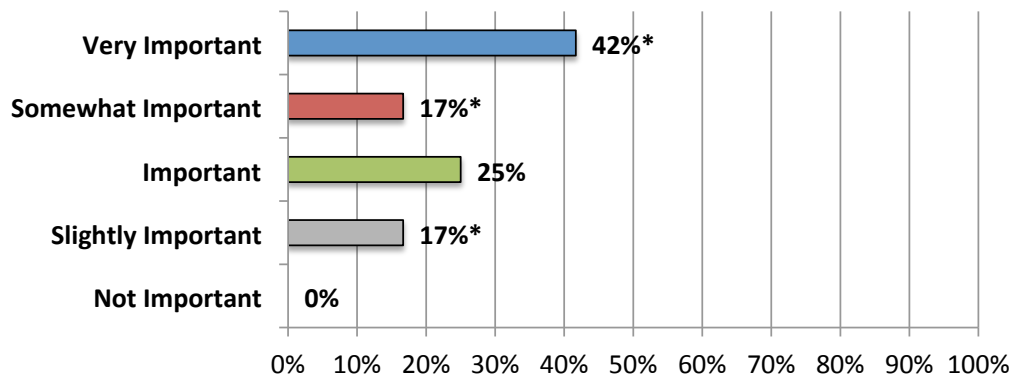
The relationships I formed with other students from different schools:



The relationships I formed with my teachers:



The relationships I formed with college professors:



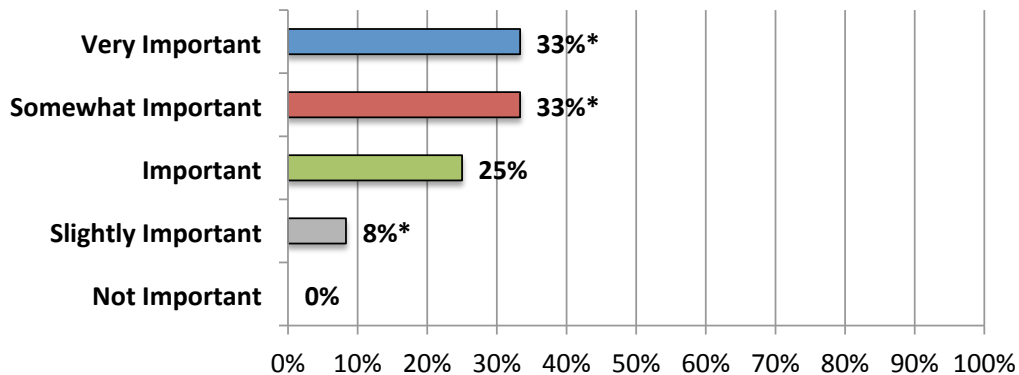
*All data is rounded to the nearest percentage point.



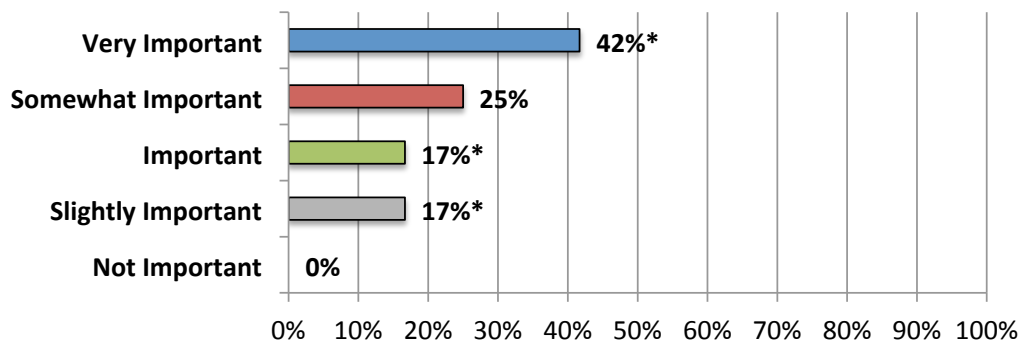


(Continued) Q30: How would you rate the importance of the following aspects of your experience at Clean Tech?
(n=12)

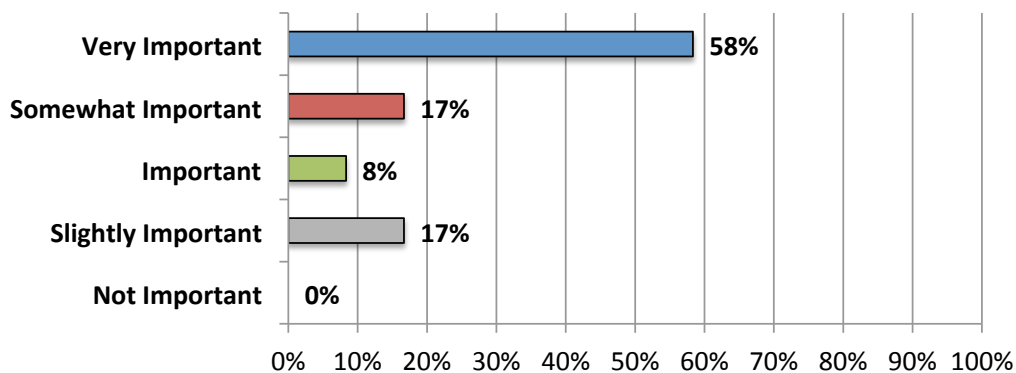
My school counselors/program advisors:



Meeting and engaging with STEM professionals and Clean Tech partners:



Creating networking opportunities:

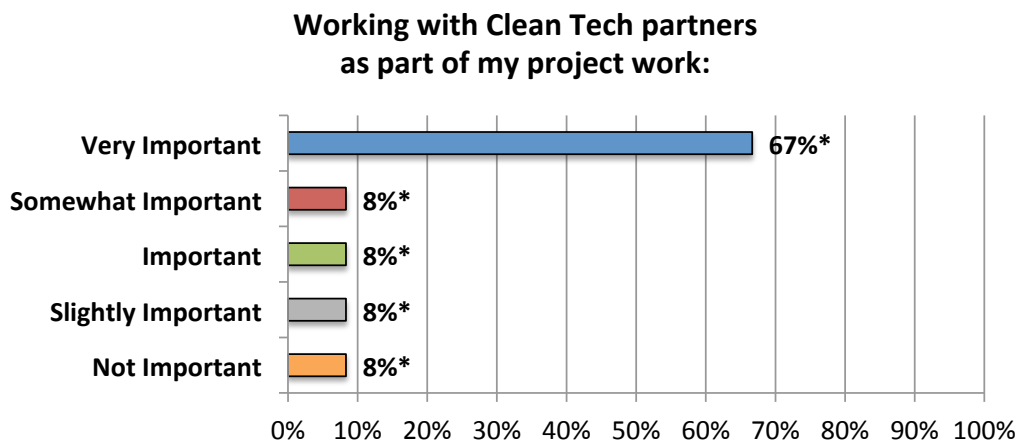


*All data is rounded to the nearest percentage point.





(Continued) Q30: How would you rate the importance of the following aspects of your experience at Clean Tech?
(n=12)



**All data is rounded to the nearest percentage point.*





Q31: Is there someone who inspired you during your time in the program,
and why and/or how were you inspired?
(n=8)

*Teachers**

- P-TECH 9/English 11 (n=5)
- Student teacher (n=2)
- P-TECH 10/Green Economics & Public Policy (n=1)
- P-TECH 10/Exploration of Nanotechnology (n=1)
- Name not found on website (n=1)
- All teachers in the program (n=1)

* current position listed on the Clean Tech website

Teacher Engagement

- Mentoring
- Working with students on individual basis
- Working alongside students
- Encouraging
- Making sure students know the material
- Helpful; identifying areas needing improvement
- Challenging students to improve

Student Growth

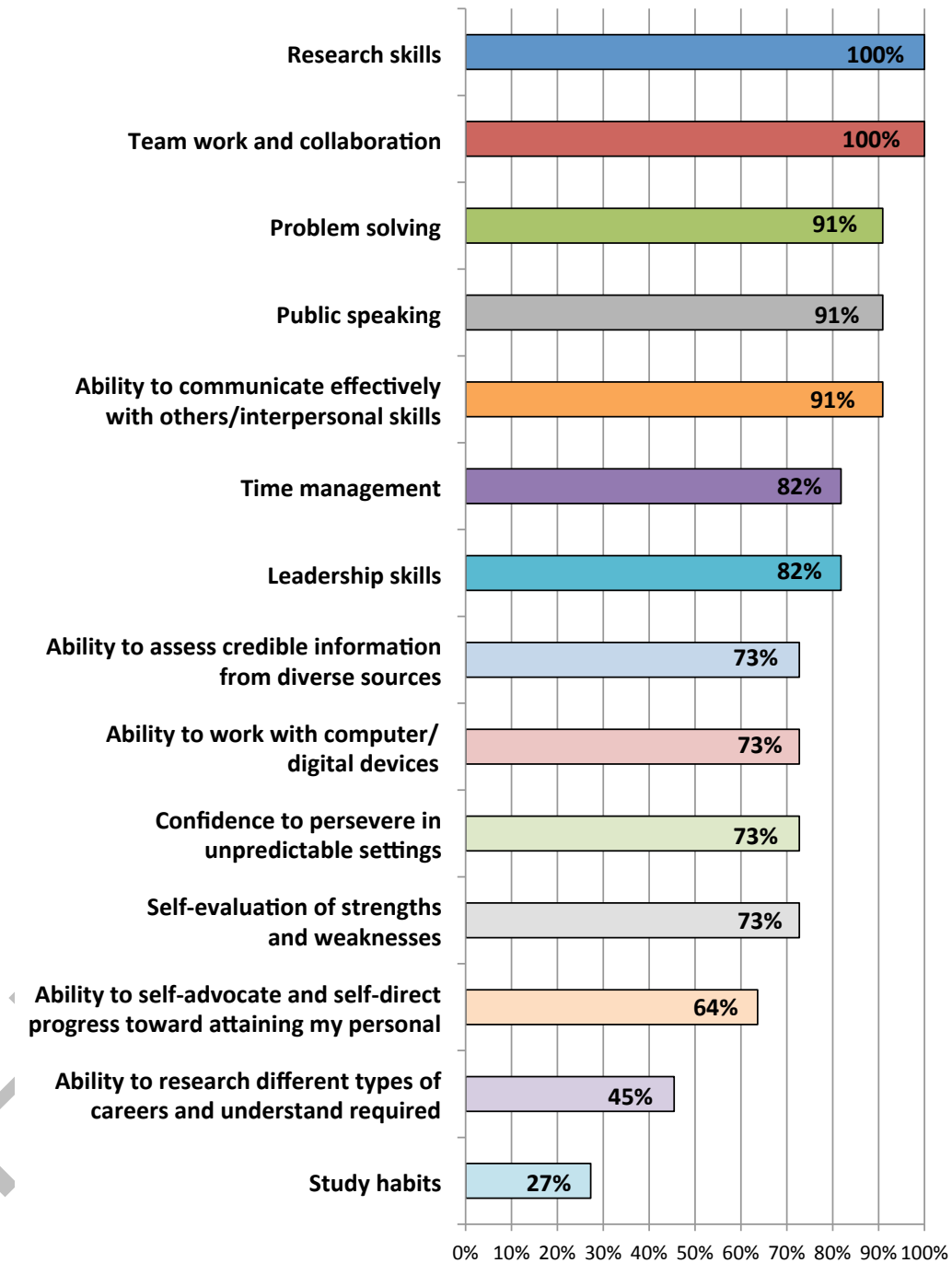
- Developing work ethic
- Building self-confidence
- Inspiring creativity
- Inspiring students to learn new things and excel





Q32: Which skills do you believe you gained through your experience at the Clean Tech program?

(n=11)



Note: Respondents were given the option of selecting more than one response category if applicable.





Q33: How often do you use these skills
in your current college course work and/or job?
(n=11)

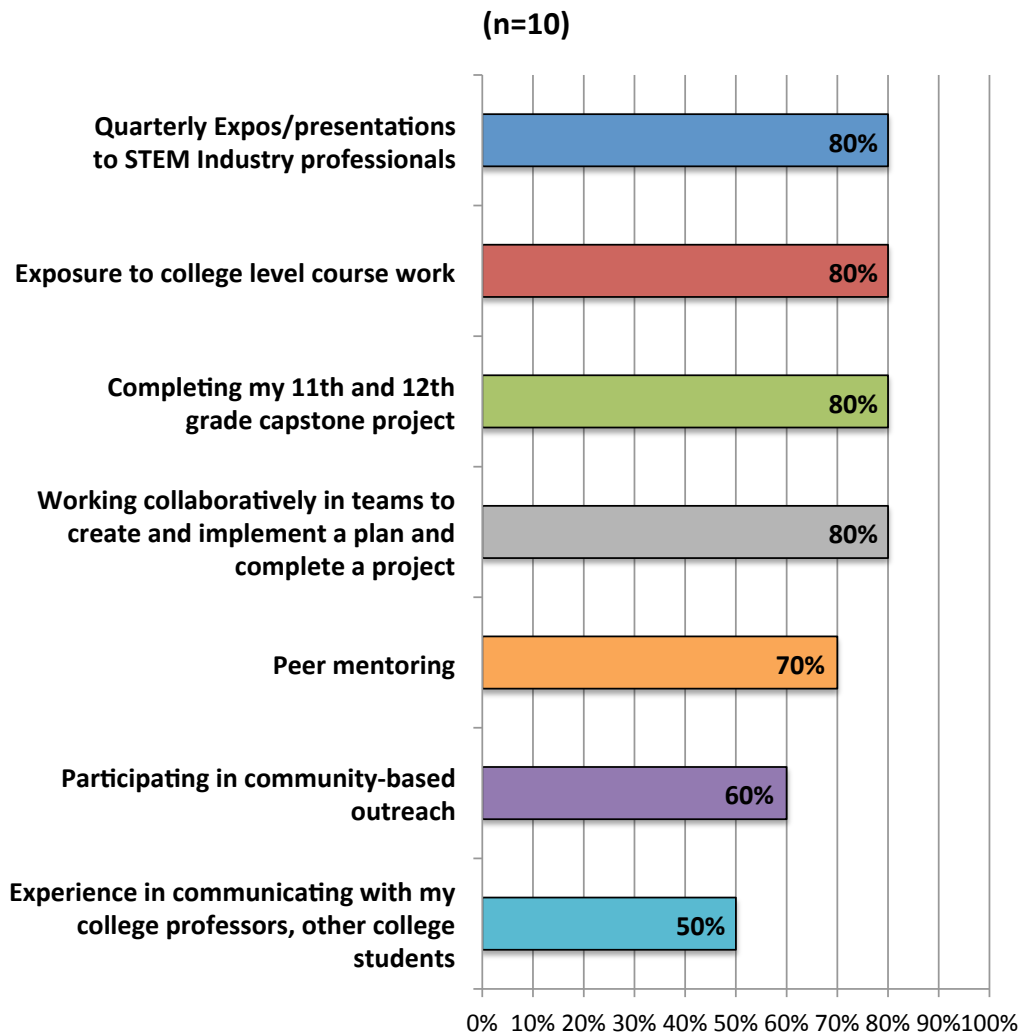
See Infograph "*Applying Skills In College/Career*,"
page 22 in the Infographic Report, Appendix A.

FINAL DRAFT





Q34: Which of the following Clean Tech experiences helped you improve your skills and abilities as a student?



Note: Respondents were given the option of selecting more than one response category if applicable.





Q35: What advice would you give to a current Clean Tech student? (n=9)

At ECHS

- Document your work in accessible non-HVCC location
 - Once you graduate you cannot access your materials
- Persevere
- Take advantage of all opportunities
- Rise to meet challenges
- Do not procrastinate
- Listen to feedback from instructors and peers
- Have a strong work ethic

After ECHS

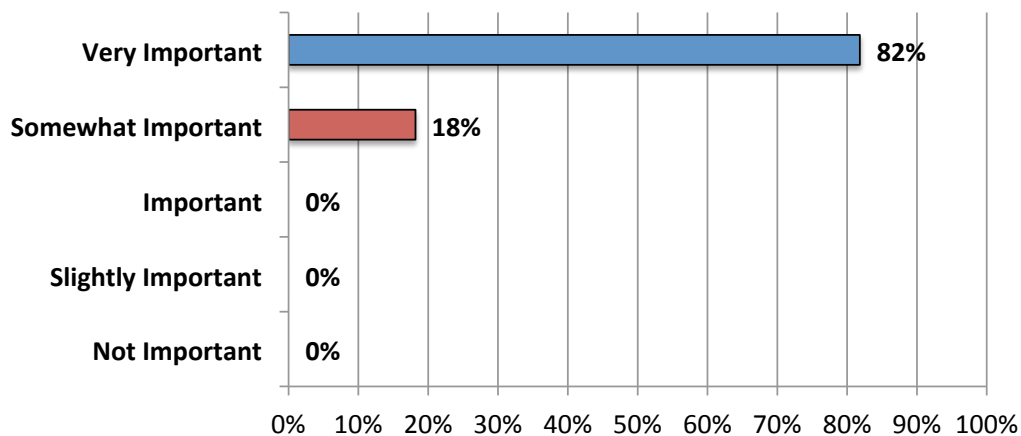
- College is "tough" but do not get discouraged
- Get involved in clubs and organizations early
- Clean Tech ECHS is unlike the usual college experience, so be prepared for:
 - Lectures
 - Busy work
 - Sitting in classrooms
 - Working on projects that do not interest you
- Share project work with your college professors to showcase:
 - Research skills
 - Problem solving
 - Designing/prototyping
- Organize and complete your work
- Do not be afraid to try new things



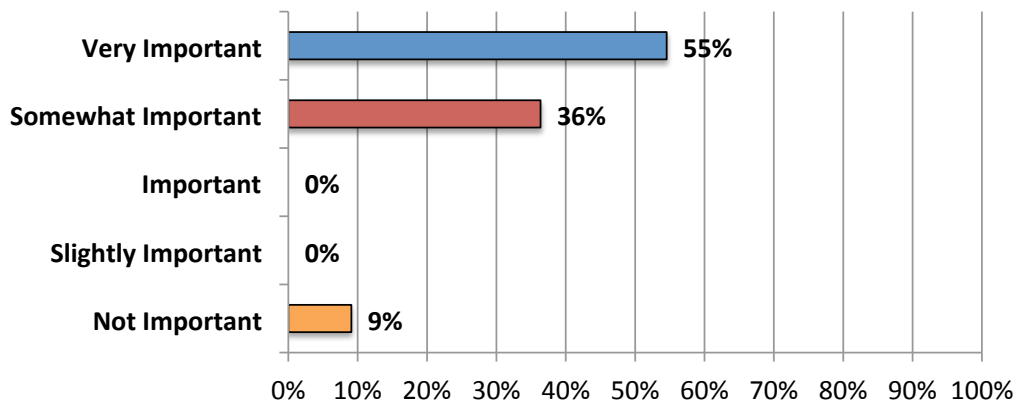


Q36: Which courses would you say were important to your overall success at Clean Tech?
(n=11)

High School courses at Clean Tech

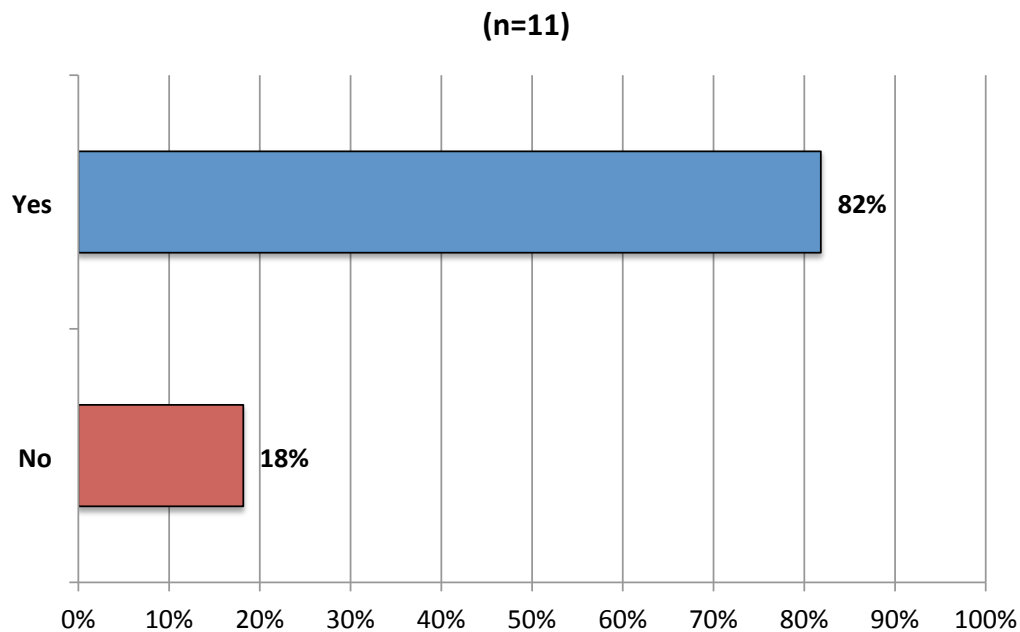


College courses at Clean Tech





Q37: Would you be willing to mentor students currently enrolled in the program?



Note: Names and contact information for students responding "Yes" were submitted to Clean Tech Staff as a separate list with personal data for follow-up.

