



STEM CareerX

Project Report

Jan 2022 - May 2023



Channing Street Copper



All Power Labs



Twelve



SkyDeck

California State University East Bay
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Project Summary

THE PARTNERSHIP

The Institute for STEM Education at Cal State East Bay developed the STEM CareerX project as part of a collaboration with Bayer, the City of Berkeley Office of Economic Development, Berkeley Startup Cluster, Berkeley High School Career Technical Education (CTE) and Wareham Development

MAIN GOALS

The main goals of this project are to expose underrepresented students in STEM to diverse STEM-based applications and careers in their community, empower and inspire them to pursue STEM education pathways, and strengthen the long term connection between Berkeley High School CTE and local STEM companies

THE PROJECT

The project was launched in January 2022, and during the initial months, we focused on testing and modifying the administration, design, and implementation of school visits to local STEM-based companies. This summary covers the period from January 2022 to May 2023, during which we achieved the following:

- ❖ Participants: 226 students, 16 educators, 12 companies
- ❖ Conducted 13 visits with a total of 658 hours of STEM engagement for students and educators
- ❖ Facilitated more than 100 informal conversations between students and professionals
- ❖ Enabled more than 50 academic and career path discussions between students and professionals

School	Company	Participants	Who are the students?
Berkeley High School	Cell Valley Labs	15 Students 2 Educators	National Society of Black Engineers Jr. Club
Berkeley High School	All Power Labs	25 Students 3 Educators	Students interested in Energy tech companies
Berkeley High School	Caribou Biosciences	16 Students 3 Educators	Biotechnology Academy Juniors and Seniors
Berkeley High School	Novel Farms	15 students 2 Educators	National Society of Black Engineers Jr. club
Berkeley High School	Meyer Sound	11 students	Digital Sound track

		1 Educators	
Berkeley High School	UC Berkeley Bakar Labs	23 students 3 Educators	Biotechnology Academy Seniors
Berkeley High School	GiG Car Share	13 students 1 Educator	Hispanic Engineering and Science club
Berkeley High School	Channing Street Copper	15 students 1 Educator	National Society of Black Engineers Jr. club
Berkeley High School	Conception	23 Students 3 Educators	Biotechnology Academy Seniors
Berkeley High School	Twelve	17 Students 1 Teacher	Hispanic Engineering and Science club
Berkeley High School	SkyDeck	20 Students 1 Educator	Computer Science class seniors
Berkeley High School	Ambi Robotics	19 Students 2 Educators	Robotics, Mechatronics, NSBE jr.
Emery High	All Power Labs	14 students 2 Educators	Students from Freshman to Senior classes

The City of Berkeley Office of Economic Development established connections with all 12 companies. Berkeley High School CTE participated in 12 visits and Emery High School in 1 visit. Each visit, except one, lasted approximately 3 hours long and included a tour of workspaces and labs, informal conversations with employees, demonstrations, hands-on activities, and career path discussions

OUTCOME: HIGHLIGHTS

- ❖ Over 90% of the students expressed their interest in participating in additional company visits.
- ❖ More than 85% of the students indicated that the visits helped them understand that career paths are not always straightforward and that there are different ways to get to the same job
- ❖ Students found the site tours and career path conversations highly valuable.
- ❖ Students showed continued interest by seeking further conversations with employees after the visits.
- ❖ Students demonstrated agency by proactively approaching the companies and inquiring about internship opportunities.
- ❖ All 12 participating companies recognized the value of the visits for their employees and community connection. They expressed their interest in establishing long-term partnerships with the school.

What did students share about their experience?

"I learned that it may take time to find something you enjoy to work on, but if you put in effort you can do a lot of things"

"Grades should not define you, career path could always change. You have to take multiple chances and go in different directions"

"Even though Gig Car is a simple idea, there is a lot of tech and complications included"

"I loved the tour and being able to apply our coursework to a professional setting"

"I found it interesting that the lab technicians perform similar procedures to what I'm currently learning"

"Meeting and talking helps with discerning pathways"

"I learned about how within a larger company there is a smaller group that works on innovation. I also learned about different members of a team and how all their roles came together to make a product"

"I learned that it can take a while to find what you want to do but just follow your interests and look for jobs that support those interests"

"I learned the versatility in mechanical engineering; We can always use problem solving skills in any career path"

"I was surprised by how cohesive the work between team members seemed. The implementation of practices and utilizing individuals expertise was striking"

"I learned that it's possible to just ask professors for a couple of hours a week in a lab"



GiG Car Share



Bakar Labs



Ambi Robotics

"I learned about what accelerators and incubators are, and how they help start-ups start their company and market their products"

What did educators share about their experience?

"Learning about next gen sequencing was a big highlight as we can't really show nor teach that. It was so great that they had a diagram on a white board ready to teach it"

"The lab tours were awesome. It's so great to see the bigger version of equipment they are familiar with as well as new equipment and the flow of movement to prevent contamination post PCR"

"The most valuable part was the career panel. It was a great mix of inspiring and realistic stories about what life after high school may be like"



Cell Valley Labs

What did companies share about their experience?

"I am glad that we were able to provide a positive experience for the kids. I saw there were even a few kids who have already reached out to Wild Earth for internships. If there is ever a need to bring in another field trip feel free to reach out and we will make it happen"

"I'm glad that the students enjoyed their visit today. Since the students were from the Biotechnology program, their level of interest and engagement was much higher than other student visits. Our company wants to support our local community and STEM education. We would like to continue participating in this program"

"I feel fulfilled that we were able to participate in your efforts for community development. We all reflected at how lucky those high school students are to be a part of such a program. You all are doing incredible work"

"It was great working with your team to make this event happen. I think our team got as much out of the afternoon as the students!"



Conception



Twelve

KEY LEARNINGS

The following key learnings emerged from the project:

- ❖ Providing students with the opportunity to physically experience a local working space and engage in conversations with professionals about their work while receiving career path advice is an empowering experience.
- ❖ Investing time and effort into finding the right match between students and companies is crucial. When students perceive the relevance of the visit to their lives, they feel empowered and have a sense of agency.
- ❖ Informal conversations between students and employees in their workspace significantly engage and empower students.
- ❖ Participating in hands-on activities on the company's floor using tools or equipment has a powerful impact on students' experience.

Survey Form (Jan-May, 2023)

Thank you for participating in the visit today.

Our goal is to make these visits as useful and meaningful as possible and we would appreciate your help by answering the following questions:

1. Please rate your level of agreement with the following statements. For each statement, select the option that best represents your level of agreement, from 1 for 'Strongly Disagree' to 5 'Strongly Agree'.

1

2

3

4

5

Strongly Disagree

Strongly Agree

- 1. The visit met my expectations
- 2. I learned something new about STEM companies
- 3. The visit helped me understand the connection between what I am learning and its application in the workplace
- 4. The visit helped me learn about job roles or careers that are new to me
- 5. The visit helped me understand that career paths are not always straightforward and that there are different paths to get to the same job.
- 6. I had the opportunity to speak with employees at the company and learn about their career paths.
The information provided me with insight that will help me with my career goals.
- 7. I would recommend other students to participate in a visit to a company
- 8. Overall, I had a positive experience visiting the company

2. Please share two things that you learned during the visit that surprised you or that you found particularly interesting?

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3. How can we improve this visit experience? Please share your ideas - we appreciate any feedback on how to make it more useful.