

# Counselors and Computer Science



**CS LISTEN UP Conference**  
**May 18, 2022**



## Overview of Slideshow:

1. Background Information
2. Research and Findings
3. Conclusions and Recommendations

**Research Question:  
What do Counselors know  
about Computer Science?**



# CHULA VISTA HIGH SCHOOL CS LISTEN UP PARTICIPANTS

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Bueno Ashley  
Callejas Alejandro  
Cano Gabriel  
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Pena Ashley  
Quinonez Eric  
Reyes Jose Luis  
Sanchez Alvaro  
Tovar Rylan

## *Teacher*

Trevor Neeb

## *UCSD Coach*

Professor Beth Simons

## *District TOSA Computer Science*

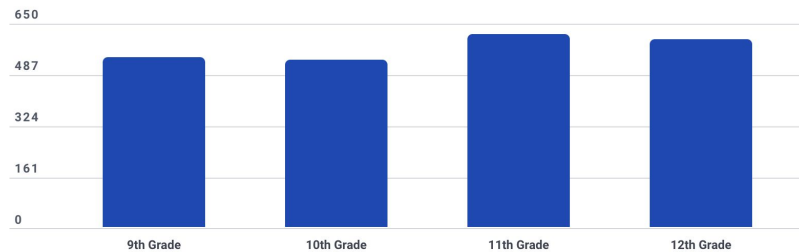
Art Lopez



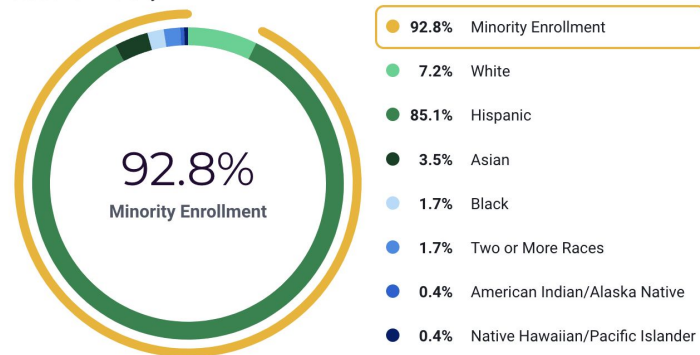
# Chula Vista High School

Total Enrollment **2,271**

Student Enrollment by Grade



Student Diversity



Gender Distribution



Total Economically Disadvantaged (% of total) **70%**

Free Lunch Program (% of total) **61%**

Reduced-Price Lunch Program (% of total) **9%**

Full-Time Equivalent Teachers **102**



# Background Information in Computer Science at Chula Vista HS

- AP Comp Sci Principles has been taught for 6 years
  - Exam passage rate is +/- 60%
  - Annual enrollment is ~80 students
  - approx. 25% female, 75% male
- AP Comp Sci A has been taught for 5 years
  - Exam passage rate is +/- 20%
  - Annual enrollment is ~20 students
  - approx. 6% female, 94% male
- CVHS has a robotics club



**Research Question:**

**WHAT DO COUNSELORS KNOW  
ABOUT COMPUTER SCIENCE?**

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## Background

Our research question was, “*WHAT DO COUNSELORS KNOW ABOUT COMPUTER SCIENCE?*”

At Chula Vista High School, we conducted nine interviews with over 20 questions for counselors and administration. The questions ranged from their knowledge of computer science classes to their feelings towards computer science in general.



# Methodology: Interviews

- Interviewed counselors at a planned time
- Interviewed counselors with a set of questions that we went over during CS Listen meetings
- During the interview, students were assigned to ask at least 10 questions and include follow-up questions (if possible)

Topics covered:

- Knowledge that counselors had about Chula's CS courses
- When do counselors recommend CS?
- Potential CS career pathways
- Were students made aware that a CS class can replace 3rd year science/4th year math classes?
- Discussion on adding more CS classes in the future





# Background

Unfortunately, one of the administrators that we were going to interview was unable to participate.

From the eight counselors/admin, we noticed some misconceptions as to what CS really offers to students and a consistent desire to mainly suggest CS to students interested in the course.



# Preliminary Findings & Conclusions

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# Findings: Interview Question 1

## “When do you recommend computer science to students?”

Most Common Response	Surprising Response	Quotes	% of responses out of 8 interviewees
<b>Students who show interest in Math, Design, Coding, and Science.</b>	<b>Ideally we want to shoot for higher grades (11th and 12th) but are also asking ninth graders that are wanting to take the course.</b>	<i>“If they say they're interested in mathematics and programming, anything within the realm of computer science”.</i> <i>“I find characteristics to recommend to them, I will review their math and science.”</i>	<b>37%</b>

## Conclusion: Interview Question 1

- Students may be offered CS options if they show an inclination towards CS already
- We wonder how this may impact students who are unaware of CS or did not have early exposure to CS
- **We recommend:**
  - Counselors encourage and suggest CS to more students so they can learn more and see if CS is of interest to them
  - Provide more 9th and 10th grade opportunities to explore CS



# Findings: Interview Question 3 “Describe what you know about Chula’s Computer Science courses.”

Common Responses	Surprising Responses	Quotes	% of responses
Two CS Courses: Principles and A.	Thought we have aerospace engineering.	<p><i>“Honestly not very much. What I’ve been told is in the sequence with the computer science principles and then move onto computer science A.”</i></p> <p><i>“We know that we have two courses in computer science, principles of Computer science and then AP computer science .”</i></p>	50% of the counselors knew that we have CS principles & CS A.

## Findings: Interview Q3: “Describe what you know about Chula’s Computer Science courses.”

Most Common Responses	Surprising Responses	Quotes	% of responses
I did not know about the course	Previous knowledge of Computer Science due to taking programming and coding classes.	<b><i>“I’m still trying to figure out. Certain things that I need help with. If I had known maybe a few things about computers and programming I wouldn’t be stuck in a rut and trying to call other people from IT to help me figure that out.”</i></b>	50% either don’t know much, or are trying to figure out more information

## **Conclusion** Interview Question 3: “Describe what you know about Chula’s Computer Science courses.”

- We noticed that 50% of the counselors we interviewed were not aware of CS classes.
- This may impact their ability to suggest CS to students (especially if students have specific questions around the class)
- **We recommend:**
  - Provide Counselors training & workshops to learn about CVHS CS courses, equity access, and addressing gender and diversity gaps.



## Interview Question 4

“Are students aware that taking AP Computer Science Principles can replace a 3rd year science (D) for the A-G course requirements for the UC Portal? And AP Computer Science A can replace a 4th year math (C) for the A-G course requirements?”





## Findings: Interview Question 4

Most Common Responses	Surprising Responses	Quotes	% responses out of 8 subjects
<p>All the people interviewed did know about it but they rarely promote it.</p> <p>Don't promote it because they prefer students to take all three years of math.</p>	<p>One of the counselors said "I don't know".</p>	<p><i>"Yes, actually yes."</i></p> <p><i>"Yeah we inform them of that. I usually don't. I go based on interests, but if I, for example, was looking for a third year of science and they're more future oriented rather than like being into the traditional sciences, then I'll bring it up."</i></p>	<p>70%</p>

## Conclusion: Interview Question 4

- We noticed that many counselors were aware of the opportunity that CS classes provides to replace 3rd year science class
- It was interesting that not many counselors promote this to students

### **We recommend:**

- Continued research into counselor preparation and training to explore the ways counselors can promote CS to students

# Findings: Interview Question 5 What do you know about the AP CS coursework for either AP CSP or AP CSA?

Response	Quotes	% of responses out of 8 subjects
They knew very broad information, but most of the details eluded them.	“It's almost like if you asked me what I know about AP calculus. I know that teaching calculus but I can't go in and teach you”	12.5%

Note: Out of the 8 staff interviewed, only 1 answered.



## Interview Q5: What do you know about the coursework for either AP CSP or AP CSA?

*“To be honest, I know about the course and the general part of it, but I do need to go more in there to see specifics. It's almost like if you asked me what I know about AP calculus. I know that teaching calculus but I can't go in and teach you okay, this is a theorems that they use every day, and so I didn't need to do a better job of going in there to check out the curriculum, but I do know how to access it I knew that if I go on the district website, I can always find information about the actual course.”*



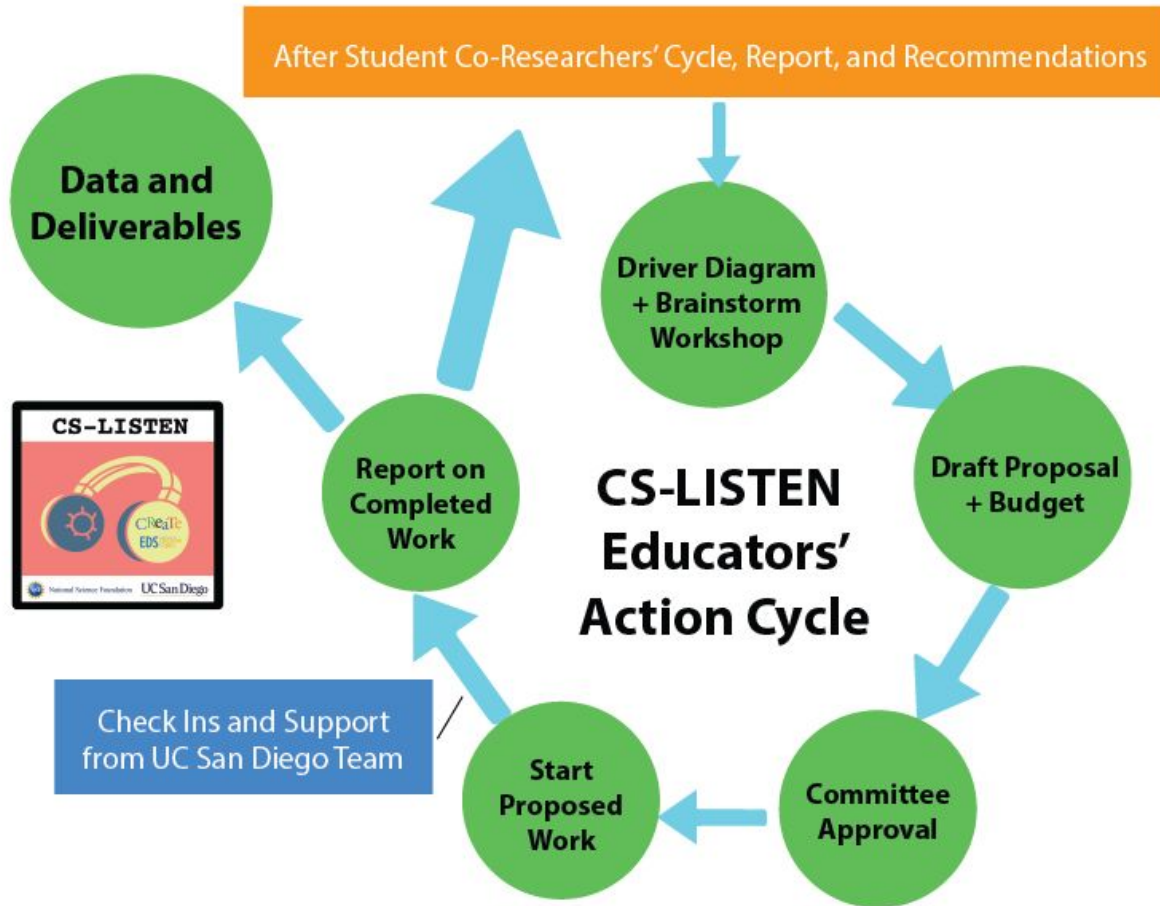
## Conclusion: Interview Question 5

- Most counselors have a very basic understanding of the CS Coursework, though not much beyond that.

### **We recommend:**

- Counselors gain a deeper understanding of CS, so that they can answer most questions a student may have about it.





# Overall Conclusion

- Counselors are a critical part of student engagement and awareness of CS and they need to have the most up to date information to best provide to all students
- Many students may not have had early exposure to CS and counselors can be a bridge to introduce and help students explore CS



# Recommendations for Action Cycles

- Informational posters for classrooms and all around the school campus
- Have counselors and administrators take CS course seminars to learn about the benefits of CS for students so that they can better inform students about CS
- CS course description videos with student anecdotes that can be shown to students by counselors and educators, and over student-run news





# Recommendations for Action Cycles

- Have counselors and administrators come in CS classes and watch the course in action so they can relay the information to potential students



# Questions?

