Computer Science Education Engagement Session

Career Connected

Thursday, January 5, 2023

Introductions & Gratitude

1. Please update your Zoom Name

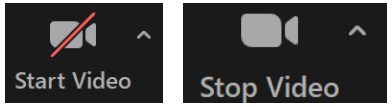
First Last (Pronouns) Organization, Title

Example: Jenn Smith (she/they) Oregon Academy, Principal

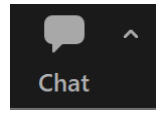
2. Introduce Yourself

In the chat, share your name and what brought you here today.

Logistics

Video: 

Audio: 

Chat: 

Captioning: Available

Interpreters: Available

Engagement Session Agenda and Flow

- Background and Framing
- Computer Science Experiences and Goals
  - *Breakout Rooms: Share Out*
- Computer Science Hopes and Priorities
  - *Breakout Rooms: Share Out*
- Closing and Next Steps

Background and Framing

Oregon's Timeline and Commitment to Computer Science Implementation (2022-23)

MAY 2022

Governor Brown signs **Computer Science Directive**

JUNE 2022 – SEPT 2023

STEM Hubs submitted **proposals** in June 2022 with the goal of **increasing access and participation** in computer science in their regions. These projects will continue through September 2023.

DEC 2022 – JAN 2023

ODE and HECC facilitate **Phase I Engagement** focused on learning from education partners, career connected partners, students, families, and community members about their experience with computer science

FEB 2023 – MAR 2023

ODE and HECC identify a consult team (based on applications) and **draft the Computer Science Implementation Plan. Phase I Engagement summary shared publicly.**

APR 2023 – JUNE 2023

ODE and HECC facilitate **Phase II Engagement** focused on getting feedback on the draft implementation plan. **Phase II Engagement summary shared publicly.**

JULY 2023 – AUG 2023

ODE, HECC, and the Consult Group respond to feedback on the implementation plan and write the **final implementation plan**

SEPT 2023

Publish Computer Science Implementation Plan

Why Computer Science? A National Perspective

- Pandemic school closures put laptops in the hands of 90% of students.
- US has 700,000 open computing jobs but only 80,000 computer science graduates.
- Remote work has expanded the opportunity for even the smallest towns to become tech hubs.

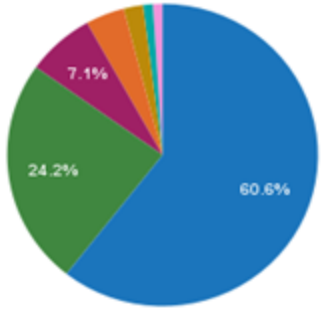
Code.org, CSTA, & ECEP Alliance (2022). 2022 State of Computer Science Education: Understanding Our National Imperative.

Who We Serve

560,907 Students

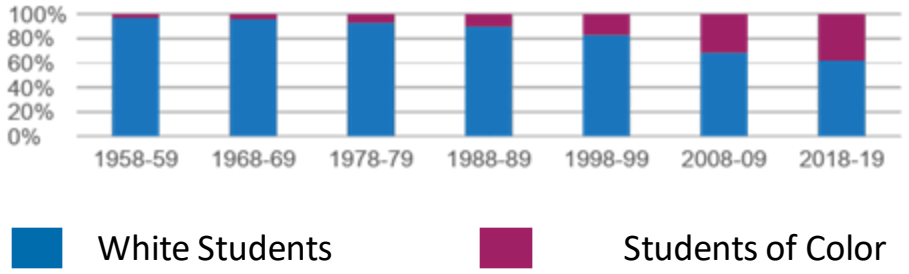
More than 200 languages spoken

- Economically Disadvantaged: 53%
- Ever English Learners: 18%
- Homeless: 3%
- Lesbian/Gay /Bisexual: 12.6%
- Mobile Students: 11%
- Students with Disabilities: 15%



- White (60%)
- Hispanic (24%)
- Multi-Racial (7%)
- Asian (4%)
- African American/Black (2%)
- American Indian/ Alaska Native (1%)
- Native Hawaiian/ Pacific Islander (1%)

Rapidly Diversifying Population



Oregon Department of Education, 2020-21 School Year

What Do Computer Scientists Do?

- Develop ways to keep your emails and phone calls secure.
- Develop digital tools that can be used to create realistic 3D animations and images.
- Figure out how to link computing devices so you can monitor your home from anywhere in the world.
- Make it easier for people to use computers by learning how computers and people interact.
- Use artificial intelligence to understand and process video or sound.

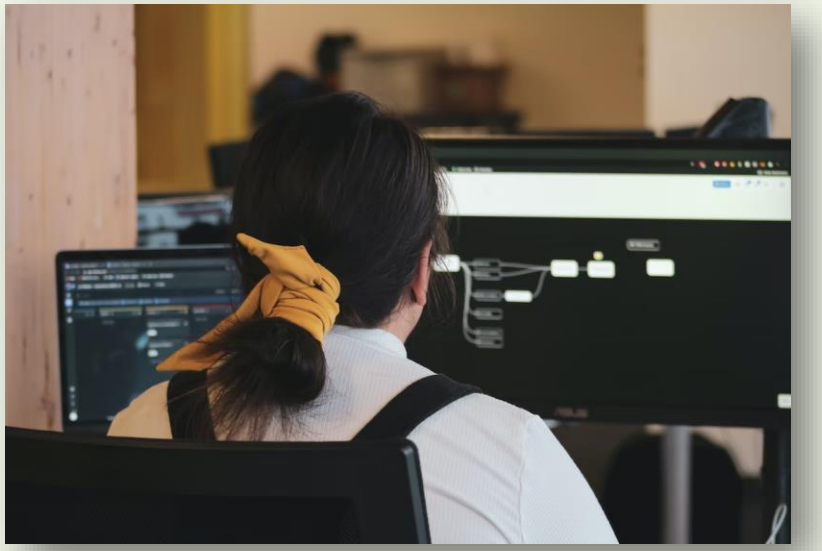
Foundational Computer Science Access and Participation in Oregon

Oregon Department of Education

86.6% of Oregon high school students attend a school that offers foundational computer science, but only 7.2% of students are enrolled in a computer science course.

Code.org, CSTA, & ECEP Alliance (2022). 2022 State of Computer Science Education: Understanding Our National Imperative.

Disparities in Computer Science Courses in Oregon



Black/African American students, Latino/a/x students, students identifying as female, students with disabilities, and multilingual learners are significantly underrepresented in computer science courses.

Female-Identifying Student Representation in Computer Science Courses in Oregon

Male-identifying high school students are approximately 2 times more likely to be enrolled in a computer science course than female-identifying students

Male-identifying

4 out of 25 male-identifying high school students were enrolled in a computer science course in the 2021-22 school year compared to 2 out of 25 female-identifying high school students.

Female-identifying

Oregon Department of Education Administrative Data (2022)

Racial and Gender Disparities in AP Computer Science

In 2019, 369 high school students took the AP Computer Science exam. Of those students:

- 17% of the students were female
- Less than 1% of students were Latino/a/x
- No Black students took the AP exam.

Geographical Disparities in Advanced Computer Science Courses in Oregon

High school computer science students in urban areas are approximately 4 times more likely to be taking an advanced computer science course compared to high school computer science students in rural areas.

Rural

1 in 50 rural high school computer science students were enrolled in an advanced computer science course in the 2021-22 school year compared to 4 out of 50 urban high school computer science students

Urban

Oregon Department of Education Administrative Data (2022)

Female-Identifying Student Representation in Postsecondary Computer Science CTE Programs in Oregon

Female-identifying participate in postsecondary Computer Science CTE Programs at a rate slightly more than male-identifying students.

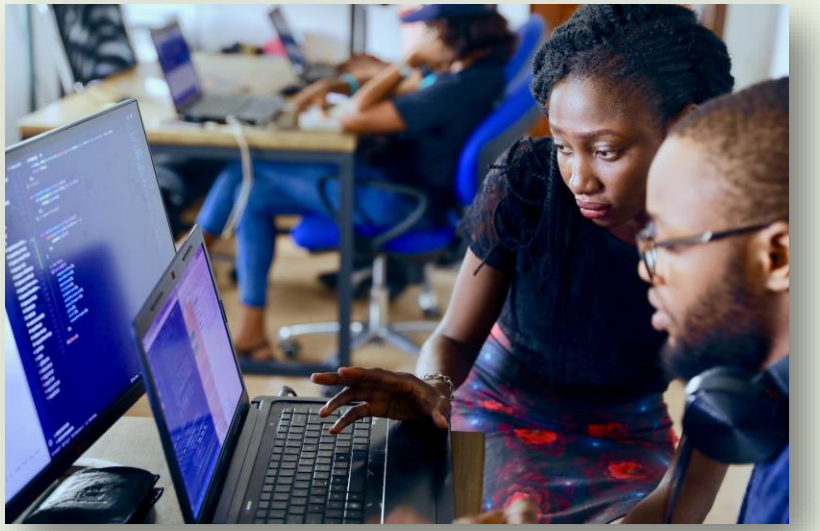
Male-identifying

Approximately 2 out of 25 male-identifying CTE Participants were participating in a Computer Science CTE Program in the 2021-22 academic year, compared to almost 3 out of 25 female-identifying CTE Participants.

Female-identifying

Source: HECC analysis of community college student-level data.
Notes: CTE Participants must have earned one or more credits in CTE Courses. Computer Science CTE program includes programs with a CIP family of 11, 14, 30, 38, or 52.

Postsecondary Participation in Computer Science in Oregon

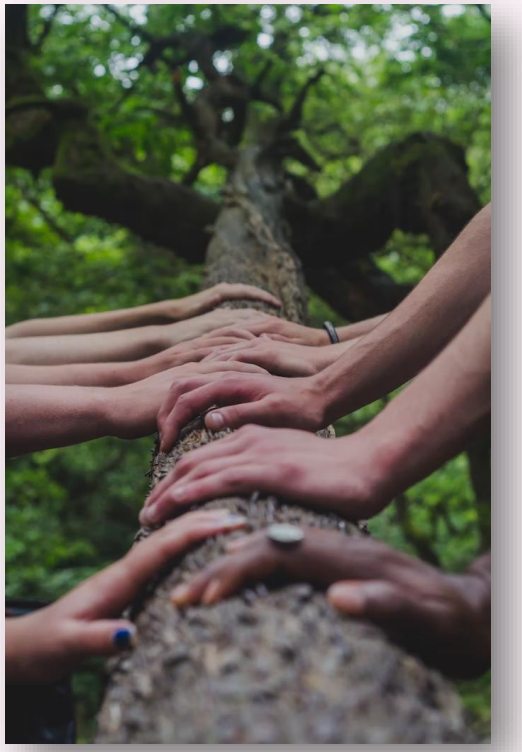


Of the 42,599-community college CTE (Career Technical Education) participants enrolled during the 2021-22 academic year, 9.5% participated in a Computer Science CTE program.

Source: HECC analysis of community college student-level data. Notes: CTE Participants must have earned one or more credits in CTE Courses. Computer Science CTE program includes programs with a CIP family of 11, 14, 30, 38, or 52.

Breakout Room Discussions

Offerings for Today



- Stay focused on **students**
- **Listen** and ask **questions**
- Share the airtime
- Respect **differences of opinion**
- Accept that not all questions have **clear answers**

First Breakout Discussion: Computer Science Experiences and Goals

- What **goal(s) for computer science education** in Oregon do you think is the most important to attend to in the implementation plan?
- What do you see as the **central challenge(s)** to ensuring equitable opportunities and outcomes in computer science?
- What **promising practice(s)** have you experienced or learned about with regards to broadening participation in computer science?

OREGON
DEPARTMENT OF
EDUCATION

Break

Second Breakout Discussion: Hopes and Priorities

- What do you see as the most important topic to be included in the Computer Science Implementation Plan?
  - What immediate actions/next steps do you see as important to implement within Oregon?
  - What long-term changes do you see as important to implement within Oregon?
- What do you hope that the Oregon Department of Education and the Higher Education Coordinating Commission considers or understands when developing the Computer Science Implementation plan?

OREGON
DEPARTMENT OF
EDUCATION

Closing and Next Steps

Next Steps

MAY 2022

Governor Brown signs **Computer Science Directive**

JUNE 2022 – SEPT 2023

STEM Hubs submitted **proposals** in June 2022 with the goal of **increasing access and participation** in computer science in their regions. These projects will continue through September 2023.

DEC 2022 – JAN 2023

ODE and HECC facilitate **Phase I Engagement** focused on learning from education partners, career connected partners, students, families, and community members about their experience with computer science.

FEB 2023 – MAR 2023

ODE and HECC identify a consult team (based on applications) and work with the consult team to write a **draft implementation plan. Phase I Engagement summary shared publicly.**

APR 2023 – JUNE 2023

ODE and HECC facilitate **Phase II Engagement** focused on getting feedback on the draft implementation plan. **Phase II Engagement summary shared publicly.**

JULY 2023 – AUG 2023

ODE, HECC, and the Consult Group respond to feedback on the implementation plan and write **final implementation plan**

SEPT 2023

Publish Computer Science Implementation Plan

Lend Your Voice: Computer Science Consult Group

- **Who:** Oregon-based partners including teachers, school/district administrators, teacher licensure representatives, instructors, professors, teacher preparatory program representatives, CTE Regional Coordinators, and computer science education experts existing across the P-20 education age range, as well as business/industry representation.
- **What:** The group will review engagement summaries, draft recommendations, and advise the Oregon Department of Education (ODE) and Higher Education Coordinating Commission (HECC) staff.
- **When:** The group will meet virtually on a regular basis from February 2022 through August 2023.
- **How:** Membership on the Consult Group will be by application, and members will be selected by ODE/HECC staff. Applications are due by January 23, 2023.

Closing

- Please consider applying for the Computer Science Consult Group.
- We will reach out to all of those who participated in Phase I engagement for participation in Phase II engagement in the spring.
- If you would like to receive direct notifications about upcoming Computer Science work, please join the Computer Science listserv.
- You can find additional information on our Computer Science website.
- If you have any questions, please reach out to the ODE Computer Science Inbox ode.csinitiative@ode.oregon.gov
- Our gratitude for your time, voice, and input today