

BPC Plan Computer Science Department University of Southern California

Effective dates of plan: 2021-2024

Revision of plan will begin: June 2023

Contact: Brandi Jones (*Vice Dean for Diversity & Strategic Initiatives*), Cristina Cucueco-Fong (cristinjf@usc.edu, *Departmental Plan Coordinator*)

Context

USC is in the city of Los Angeles. 48.6% of the city is Hispanic/Latino and 8.9% is African American. The Los Angeles Unified School District serves a population that is 74% Latino and 8% African American. The Los Angeles Community College district has similar demographics with 54.9% Hispanic/Latino and 4.9% African American.

At USC's CS department, Hispanic/Latino students account for 9% of undergraduates and 2% of MS and PhD students, below the national average of 13% and 3% respectively. The same is true of African-American students: 2% of undergraduates and 0.4% of graduates (national average of 5% and 4% respectively). In CS, women account for 28% of undergraduates, 31% of Masters students, and 26% of PhD students. The national average for women undergraduates in engineering is 21%. Hispanic/Latino and African-American women are about 12% of the total number of women undergraduates.

In the most recent cohort, USC's retention stands at 84.4% across the entire population and is slightly lower for women (83.5%) and significantly lower for Hispanic/Latino and African-American students (77.8%).

Goals

USC's CS department will focus on increasing the participation of Hispanic/Latino and African-American people in computing at all levels. While we have improved gender representation in Computer Science at USC, we believe it is important to continue to emphasize gender diversity. In this plan, we focus on intersectionality, and include goals and activities targeted towards increasing gender representation among Hispanic/Latino and African-American students in CS.

We aim to: **(1)** Increase awareness of computer science in LAUSD schools with the goal of increasing the number of Hispanic/Latino and African-American students from these schools applying to four-year colleges nationwide in computer science by 15%. **(2)** Increase the representation of Hispanic/Latino and African-American students applying to CS programs at USC by 25%. **(3)** Strive to retain Hispanic/Latino and African-American students in CS at USC at the same rate as the general student population, across all levels. **(4)** Encourage more Hispanic/Latino and African-American students to apply to USC's CS PhD program and to our faculty position openings.

Activities and Evaluation

Collect metrics to inform goals (Cristina Fong, new): Design and administer a climate survey among students and faculty to assess structural barriers to equity in the department and compare with national surveys (e.g., from NCWIT). Collect statistics for CS applicants from LAUSD schools and community colleges.

Work with K-12 teachers to assist them in CS curriculum development (Goal 1, Katie Mills, ongoing): Leverage our partnership with code.org and local K-12 institutions to assist in CS education. Activities include help in CS curriculum development, in-class assistance, and mentoring students.

Introduce school students to research in computer science (Goal 2, Malancha Gupta, new): Bring motivated local public school students to USC to do hands-on research under the guidance of faculty and graduate students. Assign them small research projects, instill CS thinking and communication skills.

Organize summer camps to involve students in coding or research projects (Goal 2, Jeff Miller, ongoing): Bring local high school students for the entire summer for a more immersive programming and/or research experience. Mentor them to produce projects to enter in science fairs and local competitions.

Mentor underrepresented USC students towards academic excellence (Goal 3, Traci Navarro, new): Volunteer to conduct a workshop on how to develop academic skills. Use contacts in industry to bring speakers that can highlight inclusivity practices in the tech industry. Help form clubs for underrepresented groups focused on specific technical topics. Mentor individual students on specific topics or to help them navigate job interviews. Work with existing women's organizations on campus to increase representation from the intended populations.

Provide research opportunities for USC students, and those from local community colleges (Goal 4, Traci Navarro, new): Conduct a mini-seminar with research readings during the summer. Define a research project for a team of students with the goal of producing a publishable paper. Mentor students to develop an artifact (e.g., a library or a device) that can be released for use by other researchers.

Evaluation Plan. The Departmental Coordinator will take the lead in creating numerical goals and overseeing the implementation of the BPC data collection plan. The Office of Diversity and Strategic Initiatives and other ongoing programs will assist in collecting the following metrics for CS undergraduate and graduate students: enrollment by demographic group, GPA, time to graduation, retention data, as well as student placement. This data will enable us to track changes to enrollment of the intended populations, their retention rates, and whether they were planning to join graduate school. We will also participate each year in the Computing Research Association (CRA) Data Buddies project, which will inform the evolution of our activities, and will indicate areas of improvement.