

BPC Plan - Department of Computer and Data Sciences - Case Western Reserve University

Effective Dates of Plan: July 2021 - June 2025

Revision of the Plan Will Begin: September 2023

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Context

Case Western Reserve University is a private, research intensive, university located in Cleveland, Ohio. The Department of Computer and Data Sciences (CDS) was established in 2019 within the Case School of Engineering (CSE) to house programs in computer science (BA, BS, MS, PhD) as well as the newly created BS in data science. Computer science has become the most popular undergraduate major on campus; however, computer science at CWRU has had low participation by women-identifying students, Latinx students, and Black students. As of fall 2020, 21% of students majoring in computer science identify as women, 5% as Black and 7% as Latinx. For women and Latinx students, the rate of participation is lower than in the school and university. For CSE, the undergraduate student percentages are 30% women, 4% Black and 11% Latinx while the university undergraduate population is 46% women, 6% Black, and 12% Latinx¹. The numbers for data science undergraduate students (20% women), CS graduate students (19% women), and CDS faculty (13% women) are similar, and currently none of the 22 domestic data science students, 19 domestic graduate students, or 16 faculty identify as Black or Latinx.

The department and school have begun concerted efforts to increase participation by underrepresented groups. In 2018, the university launched the Women in Tech Initiative to give women a supportive network of peers and mentors. In 2019-2020, the department participated in the NCWIT² Learning Circle. As part of this program, the department launched a webinar series targeting prospective women students, began collecting data on the student experience, and pushed for a school level diversity award for faculty and staff to draw attention to the importance of increasing participation. In 2020, we saw the percentage of women students in computer science increase to 21% after being at 18% (plus/minus 1%) for the previous five years.

Goals

The department BPC mission is to meaningfully foster an inclusive community of respect and support. The immediate goals of the BPC, outlined in this report, is to increase participation in the undergraduate program. We have longer term goals to address the graduate program and faculty.

Goal 1: To address issues related to **climate** for women, LGBTQ+ and URM³ students and to improve **retention** of women, LGBTQ+ and URM students across all levels. CDS will develop the means to identify and track the retention rate of our undergraduate students, and the initial target is to have the **retention rate of undergraduate women, LGBTQ+ and URM students in the major match that of all undergraduate students in the major by 2025**.

Goal 2: To improve the outreach to and recruitment of women and URM students into the undergraduate major. The short term goal is to **increase the percentage of women students in the major to 25% by 2025**, and to **increase the percentage of URM students in the major to 15% by 2025**. The goal is to have the percentage of women majoring in computer science match the percentage in CSE by 2030, and for the percentages of women and URM students to match the percentages in the university by 2045.

¹ <https://case.edu/ir/cwru-facts/student-facts>, CWRU 2020 Taulbee Report. Race percentages are of US citizens and permanent residents who identified one race.

² National Center for Women & Information Technology, www.ncwit.org

³ URM (Underrepresented Minorities) in this context refers to Black, Latinx, Pacific Islander, and Native American.

Activities and Evaluation

Goal 1: Climate and Retention

Data Collection (new and ongoing, led by Soumya Ray and Heather Smith) We are continuing to develop anonymous surveys to track student retention, to identify department climate issues and to track progress on those issues over time. We have created an anonymous survey of students enrolled in the first required course of the major and a survey given to students who leave the program. We are developing a climate survey to be given yearly to all junior and senior computer science students. We plan to have all surveys in operation by 2021.

Diversity Training for Faculty (new, led by Fanny Ye) We will develop a customized diversity training for all department faculty that we plan to have implemented in the 2021-22 academic year. We will develop the training in coordination with the university's Office for Inclusion, Diversity, and Equal Opportunity, and the university's LGBT Center. The training will focus on the climate issues for women, LGBTQ+, and URM students identified in the climate survey including microaggressions and micro-affirmations. The training will be assessed by the number of faculty who participate.

Diversity Training for Teaching Assistants (new, led by Fanny Ye) We will create the protocols to require all graduate student teaching assistants to attend a diversity training prior to their initial teaching assignment and to keep track of the number of teaching assistants who complete the training. The goal is to have the protocols in place by 2022, and progress will be assessed by the number of graduate teaching assistants who complete the training.

Goal 2: Recruitment

Major Declaration Survey (ongoing, led by Heather Smith) We have begun collecting information from students when they declare the computer science or data science major to determine what factors influenced their decision. We will use this data to evaluate our recruitment efforts.

Webinars for Prospective Students (new and ongoing, led by Fanny Ye) We have hosted and will continue to host one webinar each semester through Undergraduate Admissions for woman-identifying prospective high school students. The webinars feature department faculty and students and change themes with fall webinars aimed toward prospective students and spring webinars aimed toward admitted students. The overall webinar focus is highlighting challenges and opportunities for women-identifying people in computing and to demonstrate that we are committed to fostering their personal growth and education despite systemic obstacles. We will develop a similar series of webinars, but now directed toward the specific challenges and opportunities for URM students. We plan to create and launch this webinar during the 2021-2022 academic year. The webinars are evaluated through surveys sent to participants and whether students identify the webinars as influential in the major declaration survey.

Department Welcome (ongoing, led by Heather Smith) We collect contact information from students who identify an interest in computing or technology, and we organize events for them including academic advising sessions and a faculty welcome. The events are assessed through student participation and whether the events are identified as influential in the major declaration survey.

Creation of a New Intro to CS/DS Class (new, led by Harold Connamacher) We will develop a new course to better attract students into the major. The course will introduce students to the breadth of computer and data science and to teach computational thinking rather than mastery of a programming language. The plan is to pilot the class during the 2021-2022 year, to continue developing the class over the next year so that it can run continuously by the 2023-2024 academic year. The course will be assessed on student evaluation of the class, the number of students enrolling in the class, and whether the class is identified as influential in the major declaration survey.