Effective dates of Plan: 12/17/2021- 12/17/2023
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Context

The Department of Computer Science at Yale has seen tremendous growth over the past decade. The number of undergraduate majors and course enrollments have more than quadrupled, the graduate program has doubled, and the faculty size has increased approximately 30%.

However, by every measure, the representation of women and people from URGs (Under Represented groups, including people who identify as Hispanic, African American, American Indian, Alaska Native, Native Hawaiian, and/or Pacific Islander) have lagged. For undergraduates, in the period 2010-2019 (pre-pandemic statistics) of the students who had declared the major, 19.1% were women compared to 49.5% in the Yale undergraduate population, and 12.7% were people from URGs compared to 23.6% in the Yale undergraduate population. The terminal MS program has been nearly entirely international students, and has typically included 20% to 30% women over the past 10 years, with the percentage dropping during the pandemic. At the doctoral level, in the five years from 2016–2020, the department graduated 27 doctoral students, of which only 3 were women and none were from URGs. This is substantially below the national representation in computer science. There are currently 26 tenure track faculty in the department, including 5 women (three full, one associate, one assistant professor) and one from an URG (assistant professor).

At the undergraduate level, students apply to and are admitted to Yale College, not to the Engineering School or the CS department. At this level, the department must pursue a more inclusive climate that promotes a sense of belonging. At the graduate and faculty levels, the department must increase recruiting efforts to underrepresented groups.

Goals (G), Activities (A) , and Measurement (M) (Contacts are listed in parentheses.)

(G1) Understand and improve climate and inclusiveness in Yale computer science courses by analyzing attrition data annually and increasing participation in Data Buddies from 10% to 30%, and creating new feedback mechanisms by 2024.
(A1.1) (Ted Kim) Implement a strategy to encourage students to complete the Data Buddies survey.
(A1.2) (Lin Zhong) Create a CS Graduate Student Association that selects a committee analogous to the undergraduate Department Student Advisory Committee (DSAC) with a mission that includes reporting concerns related to climate and inclusiveness to the faculty.
(M1.1) (Ted Kim) Obtain data from Yale Strategic Analysis group on the CS required course pipeline to compare to the baseline obtained in the 2020-21 school year. Measure whether the rate

of retention of women and students from URGs through the core computer science sequence improves. The goal is to match the rates of students not in these groups.

(**M1.2**) (Holly Rushmeier) Obtain Data Buddies report and measure improvement in response rate. Prepare and share a report of issues raised in the report regarding CS climate.

(G2) Measure and improve opportunities for women and students from URGs to attend diversity-focussed conferences and engage in research, increasing each measured outcome each year.

(**A2.1**) (Zhong Shao, Richard Yang) Every semester, the department chair or DUS will meet with leaders from Computer Science related student groups such as the Yale National Society of Black Engineers (NSBE) chapter, Yale-WiCS, and Yale SHPE. These meetings will serve as focus groups to help identify new opportunities for providing departmental support to students to Broaden Participation in Computing (BPC).

(**A2.2**) (Ted Kim) Continue our program of sending members of URGs to conferences, and spearhead efforts to secure funding for this effort analogous to past successful student proposals, whereby the University now funds attendance at the Grace Hopper Celebration.

(**A2.3**) (Ted Kim) Organize conference report sessions where students share their experiences attending events such as Tapia and Game Developers of Color.

(**A2.4**) (Holly Rushmeier) Share best practices document from faculty members successful in BPC-focused outreach activities.

(**M2.1**) (Ted Kim, Scott Petersen) Collect data on number of faculty in the department hosting summer undergraduate researchers from URGs. Send students assessment surveys designed by the university learning center. Establish a baseline for assessing year over year improvement.

(**M2.2**) (Ted Kim, Scott Peterson) Send out and collect assessment surveys to students attending diversity-focused conferences. Establish a baseline for assessing year over year improvement.

(G3) Increase representation of women and students from URGs in graduate programs by 25% by 2024.

(**A3.1**) (Lin Zhong) Hold information sessions for potential applicants identified and invited by Yale Graduate School from URGs.

(**A3.2**) (Ted Kim) Revise graduate admissions processes to eliminate the GRE requirement for the doctoral program.

(**A.3.3**) (Ted Kim) Expand and promote the list of diversity and inclusion-oriented organizations whose members qualify for doctoral application fee waivers.

(**M3.1**) (Ted Kim) Collect data on applications, admissions and matriculations in the graduate program to compare year over year improvement.

(G4) Increase representation of women and people from URGs on the faculty by 25% by 2024.

(**A4.1**) (Holly Rushmeier) Individually identify candidates who are women and/or candidates from URGs through lists such as Rising Stars and CI Fellows and encourage them to apply.

(**A4.2**) (Holly Rushmeier) Post notices of faculty opportunities to boards/mailing lists for groups such as Black in AI, Latinx in AI and Women in ML.

(**M4.1**) (Ted Kim) Collect data on applications, short list, offers and acceptances to compare year over year improvement.