

**Departmental BPC Plan**  
**Department of Computer Science**  
**Rice University**



**Effective dates of Plan:** 12/06/2023 - 12/06/2025

**Contact:** Risa Myers, BPC Committee Chair, (rbm2@rice.edu)

### 1. Context

Computer Science (CS) is the largest major at Rice University, located in Houston, Texas. According to the Kinder Institute, Harris county's population in 2020 was 10% Asian; 43% Hispanic; 19% Black; and 28% White, non-Hispanic. We have an impact on a large and growing number of students; as of spring 2023, approximately 18% of Rice undergraduate students who have declared majors are majoring in CS, growing from about 2% in 2010. At the same time, there has been an increase at Rice in the number of students from historically excluded communities (HEC). This BPC plan focuses on students who identify as women, Black, and/or Latinx; based on data from 2010-2022, these students have more than double the DFW rates (i.e., obtaining a grade of D or F, or Withdraw after the standard drop date) than other students in some of our introductory CS courses. We also see enrollment disparities in CS by race/ethnicity and gender, as exemplified below by the Fall 2022 enrollment percentages by demographic.

Demographic	Rice Enrollment	CS Majors
Black	9.1%	5.3%
Latinx	17.8%	11.6%
Women	49.9%	30.0%

Overall, this BPC plan focuses on strengthening support for these students. Together these activities form a synergistic ecosystem of resources, affinity groups, and activities to bolster engagement, preparation, and

achievement, that should result in improved retention, success, and sense of belonging for these populations. Furthermore, this plan includes ongoing BPC activities by faculty in the areas of outreach and student research.

### 2. Goals

G1. Define and achieve comparable metrics between HEC and non-HEC students as a whole and by demographic group. By 2028 we aim to have DFW rate and retention through the third introductory CS course within 10% between HEC and non-HEC students.

G2: Engage at least 10% of HEC students in affinity clubs by 2025 and hold at least one local event per semester per club.

G3: Conduct inclusive mentoring and teaching training for at least 75% of instructors, teaching assistants, graders, and undergraduate lab assistants by May 2025.

G4: K-12 Outreach – Expand participation in outreach for students in K-12 outreach programs including delivering at least one HEC middle school, junior high, or high school lecture each semester and participating in at least two Houston area career nights per year.

### 3. Activities and Measurement

M1: Undergraduate CS student trends in belonging and engagement on a Likert scale and response rates.

M2: Undergraduate CS student trends in number of intended and declared majors, graduation rates, DFW rates in the three introductory courses for each identified demographic group

compared to the non-HEC student metrics.

M3: Number of students and faculty participating in programs and number of club activities held each year.

A1. Define baseline metrics for the following three categories: retention, success (including DFW rates), and belonging / engagement for CS students as a whole and by demographic group (gender, race, etc.) [G1, M1, M2] [Myers]

A2. Participate in and expand on RESP (Rice Emerging Scholars Program), an existing Rice summer program for incoming HEC freshmen in STEM fields. RESP identifies and admits incoming freshmen, providing six weeks of intensive anti-remedial training and related resources. Our CS-RESP program will provide additional activities and educational content directly pertaining to computer science. [G1, M1, M2] [Myers]

A3. Participate in and expand on existing programs providing research opportunities for undergraduates including SURF (Summer Undergraduate Research Fellowships), a Rice summer program for rising sophomores and juniors from underrepresented backgrounds that provides research opportunities to students without prior research experience; in the AGEP program, undergraduate students from historically excluded communities from various US universities come to Rice for a summer research experience with established faculty; and faculty-specific programs, such as Genome Sleuths. [G1, M1, M2, M3] [Treangen]

A4. Work with students to launch one or more affinity clubs for HEC students, modeled after our women in computing club (CSters). We will fund local activities for these clubs and support travel to appropriate regional and national conferences. [G1, G2, M1, M2, M3] [Ferreira]

A5. Enlist CS faculty as CS-RESP advisors. These faculty members will host a mentoring circle with a small group of assigned students, drawn from the CS-RESP candidate pool. This advising role complements the existing roles of undergraduate major and divisional advisors, and includes orienting students toward existing academic assistance resources and/or providing additional forms of help as needed. [G1, M1, M2, M3] [Braverman]

A6. We will facilitate annual training for instructors and graduate and undergraduate teaching assistants to better prepare them for HEC students' needs. This may leverage existing programs in the School of Engineering Diversity, Equity, Inclusion and Outreach Center and Rice's Center for Teaching Excellence. [G3, M3] [Fernandez, Ferreira]

A7. We will leverage annual and semi-annual Rice University survey results for students who enrolled in a CS course in the areas of recognition, belonging, and engagement as well as utilizing data from the annual exit survey for graduating seniors to measure satisfaction with their educational experience. [G1, M1] [Myers]

A8. Annually, we will analyze and report data from the university Registrar and also survey students in the introductory course to determine their intent to major in CS. [G1, M2] [Johnson]

A9. Enlist CS faculty to participate in a lecture series curated for HEC high school students in Houston and surrounding areas. These talks will offer insights into the essential skills students need to be successful in CS and guidance on how to enhance them [G4, M3] [Treangen]