

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



**Effective dates of Plan:** 03/12/2024 - 03/12/2026

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**1. Context**

University of Houston (UH) is a Tier One public research university. UH is a Hispanic-serving institution (HSI) designated by the US Department of Education, and an Asian American-, Native American-, and Pacific Islander-serving institute. As of Fall 2022, the undergraduate student populations of the Department of Computer Science (CS), College of Natural Sciences and Mathematics (NSM) where CS belongs, and UH are shown in the table to the right.

Level	#undergrad students	African American	Hispanic	Female
UH	37,943	11.1%	36.9%	51.8%
NSM	4,954	7.8%	27.1%	44.0%
<b>CS</b>	<b>1,695</b>	<b>7.3%</b>	<b>25.5%</b>	<b>21.7%</b>

Comparatively, CS is below NSM and UH in the percentage of African American, Hispanic, and female students. As of Fall 2022, 17.2% of the 261 enrolled CS graduate students are domestic students, which is lower than the 40.3% of NSM and the 70.3% of UH.

Level	#grad students	African American	Hispanic	Female
UH	8,757	10.0%	17.3%	53.5%
NSM	935	2.2%	9.3%	39.5%
<b>CS</b>	<b>261</b>	<b>2.7%</b>	<b>3.4%</b>	<b>38.7%</b>

Furthermore, the participation of African American, Hispanic, and female students in CS graduate program is lower than the same populations in NSM and UH. In the meantime, the four-year graduation and attrition rates of CS female and Hispanic undergraduate students (enrolled in Fall 2018) underperforms when compared to the same populations at UH as shown in the following table. Furthermore, Hispanic students' graduation rate is lower than other populations, while their attrition rate is higher.

Populations	Graduation Rate (Fall 2018 Cohort)			Attrition Rate (Fall 2018 Cohort)		
	UH	NSM	<b>CS</b>	UH	NSM	<b>CS</b>
All	43%	34%	<b>36%</b>	30%	53%	<b>51%</b>
Female	50%	35%	<b>38%</b>	27%	56%	<b>51%</b>
African American	38%	35%	55%	36%	51%	36%
Hispanic	37%	22%	<b>26%</b>	34%	65%	<b>63%</b>

**2. Goals**

**G1:** Annually report the enrollment, retention, and graduation rates and the survey results of undergraduate students of different demographic groups of the CS department.

**G2:** Annually increase the retention and graduation rates of female and Hispanic undergraduate students at CS until they match or exceed the rates for UH.

**G3:** Increase the participation of female, Hispanic, and African American undergraduate students in research and graduate studies in CS by 20% by 2025.

### 3. Activities and Measurement

**A1: Data collection and analysis [G1, G2; Coordinator: Chen]** Enrollment, retention and graduation rates of CS undergraduate students will be collected, disaggregated by demographics, and shared with the faculty annually. Progress and issues compared to the past year will be identified and reported to the faculty. Faculty will collect data stemming from their respective activities that aim to broaden the participation of students from under-represented groups in CS undergraduate and graduate programs. *Measurement:* Data collected and the plots/charts produced, identified issues.

**A2: Climate surveys and study [G2, G3, Coordinator: Chen]** Faculty can survey students in their courses or organize focus groups to identify issues relevant to broadening participation. *Measurement:* # of students participating in surveys or focus groups; identified challenges faced by the students.

**A3: Forum for faculty to share insights into teaching and learning [G2, Coordinator: Rizk]** Faculty will participate in a forum that regularly brings them together to share their innovative pedagogy in teaching and mentoring or to seek help to increase student engagement and improve student learning outcomes in their courses. *Measurement:* # of faculty who participate, # of faculty who adopt innovative pedagogy in teaching, students' performance data before and after adopting innovative pedagogy.

**A4: Undergraduate research program [G3, Coordinator: Yan, Gnawali]** Faculty will host information sessions to increase awareness of research opportunities for undergraduate students and facilitate mentor-mentee matching between students and faculty. Female, African American, and Hispanic students are encouraged to participate and to engage with NSF REU opportunities, UH research scholarships such as PURS and SURF, as well as CAHSI REU program. *Measurement:* # and demographics of undergraduate students who participate in information sessions and mentoring, # of faculty who participate, # and demographics of undergraduate students who receive REU positions or pursue graduate studies.

**A5: Undergraduate research showcase [G3, Coordinator: Yan, Gnawali, Rizk]** Faculty will organize and work to broaden participation in one or more undergraduate student research showcases annually to demonstrate the achievement of undergraduate students who participate in different research projects. All undergraduate students are invited to attend. *Measurement:* # of students who presented, # of students who attended.

**A6: Student success support [G2, Coordinator: Rincon, Shah]** Faculty can utilize the teaching and advising resources offered by the department, such as ConocoPhillips Computer Science Learning Center and student academic advising, to improve the student success in their courses. *Measurement:* # of faculty who utilize the provided resource, students' performance data with and without using the support.

**A7: CS-in-practice workshops [G2, Coordinator: CS seminar organizer]** Faculty will organize a workshop series presented by alumni or other personnel working in the industry. The workshops will contribute to broadening participation by exposing students to real-world applications of computing and a range of role models. Faculty will recruit presenters and advertise the event to students. *Measurements:* # of faculty who participate, # of students who participate.

**A8: Networking opportunities [G2, G3, coordinator: Shah]** Faculty will encourage, mentor, and secure funding for students to attend conferences, such as SWE/SHPE/NSBE, GMIS, GH, and Tapia. *Measurements:* # of students and faculty who attend these conferences.