

Departmental BPC Plan
Department of Computer Science (CS)
Purdue University Northwest (PNW)



Effective Dates of Plan: 03/18/2022- 03/18/2024

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1. Context

Purdue University Northwest (PNW) is a premier metropolitan university dedicated to empowering transformational change in our students and in our community. The university offers two campuses serving a diverse student body of approximately 8,800 undergraduate and graduate students. As an emerging Hispanic Serving Institution, PNW commits to creating a culture of inclusion with Diversity, Equity, and Inclusion as core values. The Department of Computer Science at PNW is small, with 4 tenured faculty members and 2 new tenure-track assistant professors joining in Fall 2022. The table shows 2021-2022 academic year student population demographics by race and gender for the university and the 178 students enrolled in bachelor's degree in the Department of Computer Science (CS).

2021-2022	PNW	CS
White	58.20%	50%
Asian	3.20%	6.10%
Black/African American	9.40%	9.00%
Native Hawaiian/Pacific Islander	0.20%	0%
American Indian/Alaska Native	0.20%	0%
Hispanic/Latinx	23.20%	25.10%
Two or more races	3.10%	6.10%
Race/ethnicity Unknown	1.00%	1.10%
International	1.50%	2.60%
Men	40.80%	90.20%
Women	59.20%	9.80%

2. Goals

We aim to achieve the following goals.

- G1.** By 2024, more than 80% of CS faculty will have completed an Inclusive Teaching in STEM training program offered by PNW Center for Faculty Excellence, all CS faculty will have attended inclusive teaching related activities.
- G2.** To inform our efforts to better serve our Hispanic/Latinx students, by 2024 we will collect and analyze data from the previous 5 years to determine whether there are demographic differences in success and persistence in the program, with a particular focus on our introductory courses, including (a) rates for CS123 earning a D, F, or withdrawing from the course, (2) attrition rates after CS123, and (3) attrition rates after CS124.
- G3.** We will analyze data, identify the reasons for the gaps between men and women's participation in our program. By 2030, we will increase the percentage of women enrolled in CS undergraduate degree from 9.8% to 20%.
- G4.** Beginning 2023, the department will establish a process and budget for faculty and current undergraduate students visiting area high schools and encouraging women and students from underrepresented groups to attend college in computing.

3. Activities and Measurement

- A1. Faculty trainings on inclusive teaching practices (G1).** PNW Center for Faculty Excellence offers training programs such as Inclusive Teaching in STEM. CS faculty will be encouraged to attend. CS will be collaborating with the Center to offer customized seminars and faculty coaching. CS faculty will be encouraged to participate other university activities on inclusive teaching and anti-racism. *Measurement:* # of faculty participating, # of CS involved events/activities. [contact: Yang]
- A2. Peer coaching and faculty review (G1).** 2022-2023, CS will generate peer coaching guidelines that incorporate BPC efforts such as inclusive teaching practices. This provides opportunities for faculty to share successful practices as coaches, or receive guidance in the area. CS will also include

involvement in BPC-related activities as a factor in faculty annual review. *Measurement*: # of faculty participating. [*contact: Yang*]

- A3. Curriculum evolution (G1-G3).** During curriculum update effort starting Fall 2022, CS will redesign introductory CS courses (CS100, CS123, CS124) to integrate inclusive teaching practices and align with BPC goals. *Measurement*: D, F, or withdraw rate for individual courses, retention rate. [*contact: Zhao, Yang*]
- A4. CS data collection and analysis (G2, G3).** Starting Fall 2022, CS will perform course assessment for introductory CS courses, work with Center for Faculty Excellence to evaluate and identify areas of inequity and barriers. The department will participate in the CRA CERP data Buddies program, which measures undergraduate computing students' self-efficacy, sense of belonging, interest in computing, perceptions of the department, and intentions to persist. *Measurement*: # of courses assessed, # of faculty participating, # and demographics of students surveyed. [*contact: Zhao*]
- A5. Working with regional community colleges to strengthen current pathway programs (G2, G3).** The department currently has some pathway programs with regional community colleges. CS will assess these programs, strengthen or redesign them with an emphasis on recruiting women and students from underrepresented groups. CS will design and implement pipeline programs to assist students with pre-transfer training and post-transfer tutoring, to increase participation in and graduation from the pathway programs. The department will also seek external funding to support these efforts. *Measurement*: # and demographics of participating students, completion rate of transfer students. [*contact: Kraft*]
- A6. Encourage undergraduate student participation in research (G2, G3).** Encourage undergraduate women and students from underrepresented groups to participate in research and attend regional, national, and international conferences. Continue to pursue funding with undergraduate research related grants, such as BPC-focused NSF Undergraduate Research Experiences program. Develop a seminar to introduce undergraduates to research and engage them with faculty in small projects. Faculty will encourage promising students to apply to graduate school. *Measurement*: # and demographics of undergraduate students participating in research activities, # of departmental activities to encourage student research. [*contact: Zhang, Roy*]
- A7. Building inclusive community for BPC practices (G2-G4).** The department will apply to join BPC community and alliances to seek resources and help with departmental BPC efforts, such as STARS Computing Corps. CS will establish a student cohort to promote student-led K12 outreach activities, including middle/high school visit, high school student coaching. CS will apply for internal and external funding for summer computing programs for high school students, with effort to increase attendees who are women or from underrepresented groups. CS will work with PNW's HSI (Hispanic Serving Institution) initiative group to design and implement strategies to increase Hispanic student enrollment and completion. CS will apply to become a member of National Center for Women & Information Technology (NCWIT), review NCWIT recruitment resources. CS will work with PNW Admissions to revise CS's program's messaging to more effectively support our BPC efforts. *Measurement*: # of college students as BPC activity participants, # and demographics of middle/high school students reached and surveyed. [*contact: Yang, Roy*]
- A8. Recruiting and retaining faculty from underrepresented groups in computing (G2-G4).** Ensuring that faculty hiring processes support and encourage diversity is an important part of creating a diverse, inclusive computer science program. The department will work with PNW Office of Diversity, Equity, and Inclusion to provide training on DEI practices for faculty search and promotion committees. The department will seek internal and external opportunities and resources to provide to faculty regarding how to recruit new members from underrepresented groups. *Measurement*: National data on CS faculty position applicant pool, interview pool, candidates pool, faculty hired and faculty promoted will be compared with ours. [*contact: Yang*]

Overall Metrics: Number and percentage of women and Hispanic/Latinx students enrolled in and graduating from CS degree programs.