

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



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

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Context

Binghamton University (BU) is one of the four Centers in the State University of New York (SUNY) system, with a total student population of about 18,600. The campus is located in upstate New York in the Binghamton metropolitan area. The Computer Science (CS) Department, which is part of the Thomas J. Watson College of Engineering and Applied Science, offers Bachelor's, Master's and PhD degrees, and enrolls more than 1,450 students who are taught by about 40 faculty members.

At the undergraduate level, in the Fall 2022 semester:

- The CS Department included 702 undergraduates; 158 (22.5%) were women and 124 (17.7%) were from racial/ethnic groups that are underrepresented in computing: African Americans, American Indians including Native Alaskans, Hispanics, or Native Pacific Islanders. These numbers increased significantly from Fall 2019 – from 17.5% and 15.5%, respectively, but there is room for further improvements.
- The Watson College (including CS) enrolled 25.9% women undergraduates and 17.3% students from underrepresented racial/ethnic groups.
- BU undergraduates were 52.6% women and 17.8% students from underrepresented racial/ethnic groups.

We intend to increase the CS Department's percentage of undergraduate women and students from racial/ethnic groups that are underrepresented in computing by recruiting both externally and internally (as both the College and University have a higher percentage of women than CS) and by providing inclusive classroom and co-curricular experiences to promote retention.

At the graduate level, the CS Department had 25.6% women students and 9.3% domestic students from underrepresented racial/ethnic groups in the Fall of 2022.

Binghamton University, the Watson College, and the CS Department are all committed to diversity. The University recently established a Vice President for Diversity, Equity and Inclusion (DEI), and the Watson College has an Assistant Dean for Academic Diversity and Inclusive Excellence. The CS Department has a DEI Committee.

Goals, Activities, and Measurement

Goal 1. Increase the population of women in the CS undergraduate program to 30.0% (an increase of 33.3%) and of students from racial/ethnic groups underrepresented in computing to 23.5% (an increase of 33.3%) over the next 3 years. We set these numbers to be slightly higher than, but in line with, corresponding numbers in the Watson College, and nationally in Computer Science.

A1a: Establish connections with Binghamton High School, which has an ethnically diverse student body (African American: 30.6%, Hispanic: 15.6%, American Indian: 0.2%). Conduct outreach activities such as research presentations and coding camps to attract students to computing, encourage students to participate in research activities in our labs, and inform students about BU's computing program. **Measurement:** number of events held, number and demographics of students reached and students who apply to BU's CS program. [*Coordinator: Dai*]

A1b: Run an annual 2-week "Introduction to Coding and Computer Science" summer program designed for women and racial/ethnic groups that are underrepresented in computing for high school

students. Continue to advise and track the progress of participants after they have completed the program. **Measurement:** number of students participating, survey to measure participants' satisfaction, number of participants who apply to BU. *[Coordinators: Naghibijouybari & Ismail]*

A1c: Meet regularly with personnel in the Undergraduate Admissions Office to discuss the CS Department's goal to increase enrollment of students from racial/ethnic groups underrepresented in computing for both freshmen and transfers and coordinate efforts with them to achieve that goal. Report outcomes of this collaboration to the full faculty during our annual retreat at the end of the academic year. **Measurement:** number of meetings with the Admissions Office, collaborative efforts established. *[Coordinator: Dai]*

A1d: Incorporate inclusive teaching practices into classes (resources include BU's Center for Learning and Teaching, "The Teaching Practices Inventory" (Wieman & Gilbert, 2017), and NCWIT's Engagement Practices Framework). **Measurement:** number of inclusive teaching practices implemented. *[Coordinator: Lewis & Ponomarev]*

A1e: Actively recruit women and students from racial/ethnic groups underrepresented in computing to participate in research experiences (see NCWIT's REU in-a-Box and CRA's Tips for a Successful Mentoring Experiences for mentoring best practices). **Measurement:** Number and demographics of students participating in research. *[Coordinator: Yang & Naghibijouybari]*

Goal 2. Strengthen our existing relationship with Prairie View A&M University (PVAMU, an HBCU) and initiate research collaborations with other HBCUs and increase the population of domestic graduate students from underrepresented racial/ethnic groups to 12.4% (an increase of 33.3%). Annually, 20% of BU faculty will participate in these collaborations.

A2a: Promote research collaborations between BU faculty and faculty at HBCUs by arranging campus visits and monthly webinars to learn about each other's research and identify mutual interests. **Measurement:** number of meetings with HBCU faculty, number of BU faculty participating, number of joint proposals and papers. *[Coordinators: Dai & Ismail]*

A2b: Establish and run a summer day camp at BU's CS labs for juniors and seniors from PVAMU and other HBCUs to encourage them to pursue BU's CS graduate studies or careers in CS-related fields. **Measurement:** number of student participants from HBCUs, number of BU faculty participating, survey to measure student participants' satisfaction, number of HBCU students who applied for BU's CS graduate program. *[Coordinators: Naghibijouybari & Ismail]*

Goal 3. Annually, collect and report on departmental data relevant to broadening participation in our undergraduate program and graduate program to understand the challenges related to attracting, retaining, and ensuring the success of students from racial/ethnic groups underrepresented in computing.

A3a: Track undergraduate and graduate program data by gender and race/ethnicity including enrollment, retention, and graduation, and course DFW rates. **Measurement:** data collected and reported annually. *[Coordinator: Lewis & Lander]*

A3b: Coordinate student participation in the Data Buddies Survey (<https://cra.org/cerp/data-buddies/>) to obtain data on departmental climate. **Measurement:** student participation rate, data collected and reported annually. *[Coordinator: Lewis & Lander]*