

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



**Effective dates of Plan:** 01/19/2023- 01/19/2025

**Contact:** Luca Carloni, [luca@cs.columbia.edu](mailto:luca@cs.columbia.edu), Professor and Chair,  
Augustin Chaintreau, [augustin@cs.columbia.edu](mailto:augustin@cs.columbia.edu), Assoc. Professor, DEI Coordination  
Brian Smith, [brian@cs.columbia.edu](mailto:brian@cs.columbia.edu), Assistant Professor, DEI Steering

**Context:** The Computer Science department is committed to offering a diverse, equitable and inclusive environment to students who we teach from our four colleges (Columbia College, General Studies, SEAS, and Barnard, a women's college) and/or supervise in our labs, as well as our staff and faculty. We identified the following priorities to work towards that goal.

**Undergraduate classroom experience:** Under 4x increase in majors and class enrollments over 10 years, our programs welcomed more women (currently 48% of our CS majors), and saw a modest increase (+0.5%/year) among BHN<sup>1</sup> students (from 23% in 2016 to 26% in 2021). Those trends equal or outperform national and state averages, and annual surveys indicate higher overall satisfaction than at peer CS departments. Our classes also increasingly attract non-CS majors already accounting for more than half of students we teach. Nevertheless, surveys on perceptions of belonging identify gaps along gender and race.

**G1** Our goal is to sustain this progress, and by 2025, eliminate gender/race gaps from belonging surveys.

**A1a** Construct a database of class enrollment demographics, building upon experience of creating SIGARCH program committee database (PCDB), to assess progression through the program and identify problem areas from a diversity standpoint; present data annually to faculty (Kim).

**A1b** Participate in CS pathways programs to increase participation of women and BHN students (e.g. Emerging Scholar Program) and offer an overview of computer science themes advertising the breadth of computing. Introduce similar interventions to address bottlenecks identified by A1a (Cannon).

**A1c** Promote student participation in diversity-themed events by coordinating a cohort trip to a Tapia, GHC or ACM-W conference, or by mentoring student led diversity-themed efforts like DivHacks. (Smith)

**A1d** Work with student associations such as WiCS and CU Research & Diversity to host a town hall meeting for all students enrolled in CS courses, (not only CS majors), to share highlights from our surveys, gather additional feedback and promote our community's efforts towards equity (Chaintreau).

**A1e** Participate in and/or organize professional development related to pedagogy (training and/or brown bags on inclusive teaching, diversity/bias training, collaborative techniques) (Chaintreau).

**M1** DataBuddies survey (student experience); Taulbee survey (degree completions); student and faculty participation in each activity; faculty participation in pedagogical trainings.

**Ensuring our gateways into research welcome everyone:** Our research labs are effective graduate program feeders: Our undergraduate students are more likely to seek doctoral degrees (26%) or academic careers (12%) than students at CS department's peer institutions (resp. 12% and 8%); this proportion is even higher among women and BHN students. But we also found evidence that our BHN students are less likely to participate in publications, and we currently maintain no systematic data on the research experiences of external undergraduate or high school students we host.

**G2** Annually increase the number of women and BHN students in high school and undergraduate programs reached through outreach efforts and participation in research.

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<sup>1</sup>BHN refers to Black, Hispanic, and Native (including American Indians, Alaska Natives, Native Hawaiians, and Other Pacific Islanders).

**A2a** Expand REU promotion to women and BHN students: to local students (winter fair in partnership with CU R&D), in external events (AI4ALL changemakers, Tapia conference, Grace Hopper, Session at AUCC and other partners HBCUs) (Vondrick)

**A2b** Create and participate in UG research fair celebrating breadth/diversity of computing research, with student association partners (WiCS, CU Research and Diversity, ADI) (Wu).

**A2c** Participate in programs that promote diversity in undergraduate research (e.g., SEAS SURE, Barnard SRI, DREU, DREAM, REU for making AR and VR accessible) and promote participation of underrepresented undergraduate students in technical conferences (Feiner, Hsu, Roughgarden, Schulzrinne, Smith, Vondrick)

**A2d** Participate in connecting research to diversity-enhancing high-school programs (AI4ALL, ENG, Visions, Keller) (Malkin, Song, Papadimitriou); promote enhanced diversity in other outreach programs (Bauer).

**A2e** Track demographics of applicants/admitted/enrolled for REUs, attendance of technical conferences, pre-post motivation for graduate programs, and faculty training (e.g., use of NCWIT's REU in a box) (Santolucito).

**M2** DataBuddies survey (for our local students), data collected for A2e.

**Increase diversity in our graduate program:** Representation of women awarded CS graduate degrees (resp. 30% Masters and 19% Ph.D) remains close to state (27%, 22%) and national (29%, 19%) averages, but falls short of matching our undergraduate graduation. Among domestic students, representation of BHN (10% of Masters) currently underperforms state and national averages (resp. 17% and 19%) with a similar trend for Ph.Ds.

**G3** Annually increase the number of women and BHN students reached by programs intended to enhance diversity in graduate education.

**A3a** Support recently launched diversity enhancing Programs (Bridge2MS, Bridge2Ph.D, Barnard 4+1, JP Morgan Fellowship) by supporting and mentoring applicants (Dear, Hsu, Wright, Roughgarden)

**A3b** Conduct annual audit of graduate admission: Identify sources of attrition (e.g., smaller female/BHN qualified applicants pool, lower rates of admissions, lower yield for underrepresented applicants) and report suggestions to department. Admission chairs and reviewing faculty/staff to participate in training for equity in graduate admission (Yanakakis).

**A3c** Participate in actions and events from the LEAP alliance for domestic Ph.D students (Chaintreau).

**A3d** Participate in efforts to recruit and retain students in the graduate program: Graduate application mentoring (Black in AI mentors, faculty advisor for PAR), advertise graduate programs at Tapia/Grace Hopper. Organize an event or intervention to improve MS admission yield among women and BHN applicants. Participate in CRA-WP Grad Cohort Workshop to improve retention (Hirschberg).

**M3** Graduate applications, admission, enrollment and retention; faculty and student participation in the above activities.

**Faculty engagement in DEI efforts:** Our department wants to ensure that the DEI efforts conducted are spread equally among faculty of different technical areas of our department.

**G4** By 2025, all technical areas of our dept will participate in DEI activities.

**A4a** Complement faculty annual review with survey of DEI activities by technical areas to identify growth needs (Chaintreau).

**A4b** Promote growth in representation of women and BHN faculty across all areas of the department: attend events (rising star workshop, spotlight at diversity-enhancing events) to identify relevant candidates earlier, coordinate a dedicated hiring committee in charge of Target of Opportunity or Bridge2Faculty (McKeown, Malkin).

**M4** Faculty participation in DEI efforts, demographics of applicants, interviewees and offers made and accepted for faculty positions.