

Departmental BPC Plan
Department of Computer Science
Cornell University



Effective dates of Plan: November 1, 2020 – December 31, 2023

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Over the last five years, the department of computer science at Cornell University has worked to increase diversity through college-level and departmental programs. Between 2014 and 2020, the percentage of women students increased from 24% to 38% (undergraduate majors), 31% to 33% (MEng in Ithaca), 14% to 34% (MEng in New York), and 12% to 28% (PhD), and women faculty increased from 16% to 17%. The percentage of Black, Latinx, Native American, and Pacific Islander (BLNP) students shifted from 12% to 13% (undergraduate majors), 2% to 4% (masters) and from 1% to 8% (PhD). We have an African American and a Latinx faculty member (5% to 4% of the faculty). We increased the percentage of women in our undergraduate, masters, and PhD programs, but we are underperforming with respect to BLNP students. Data on other marginalized groups (such as students with disabilities) is not available, but these groups are included in our goals.

	Acad Year	Women	BLNP (Total)	African American	Latinx	Native	Total
Faculty (Ithaca+NYC)	2020	8 (17%)	2 (4.3%)	1 (2.1%)	1 (2.1%)	0 (0.0%)	47
	2014	6 (16%)	2 (5.4%)	1 (2.7%)	1 (2.7%)	0 (0.0%)	37
Lecturers (Ithaca)	2020	2 (29%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	7
	2014	2 (40%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	5
Undergrad (Ithaca)	2020	560 (38%)	183 (13%)	41 (2.8%)	112 (7.7%)	0 (0.0%)	1463
	2014	137 (24%)	66 (12%)	14 (2.5%)	44 (7.8%)	0 (0.0%)	565
MEng (Ithaca)	2020	34 (33%)	1 (1.0%)	0 (0.0%)	1 (1.0%)	0 (0.0%)	103
	2014	32 (31%)	2 (1.9%)	1 (1.0%)	1 (1.0%)	0 (0.0%)	103
MEng (NYC)	2020	31 (34%)	8 (8.7%)	2 (2.2%)	2 (2.2%)	2 (2.2%)	91
	2014	3 (14%)	1 (4.5%)	1 (4.5%)	0 (0.0%)	0 (0.0%)	22
MS (Ithaca)	2020	7 (39%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	18
	2014	1 (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	1
PhD (Ithaca+NYC)	2020	55 (28%)	16 (8.0%)	12 (6.0%)	2 (1.0%)	0 (0.0%)	199
	2014	17 (12%)	1 (0.7%)	1 (0.7%)	0 (0.0%)	0 (0.0%)	144

We have begun to increase representation of both women and BLNP students in our PhD program. For each of the past 5 years, the proportion of the new cohort from each of these groups has grown, with the 2020 PhD comprising 25% women and 7% members of BLNP groups. We attribute some of this growth to changes in our admissions procedures measuring performance relative to opportunity, increasing the number of students from non-traditional backgrounds. This 2018 report details the strategies employed and lessons learned (<https://www.cs.cornell.edu/~bindel/paper/diversity.pdf>). We must mitigate climate issues that arise in how students relate to each other, to faculty, and to students in allied programs (like Information Science, with which we share a building), particularly among graduate students. Problems include sexual harassment, racial bias, microaggressions, disrespect, and feelings of isolation and being intellectually undervalued. The problems can be acute for students with intersectional identities. This summer we formed a Task Force Fighting Racism and Fostering Inclusion of Black Community Members, whose recommendations informed this plan.

In service of the mission to increase inclusion of women and Black, Latinx, Native American and Pacific Islanders (BLNP) at all levels, we are working toward the following goals during this term:

G1. Perform data collection and analysis each academic year starting in AY21-22 and report findings to the faculty. **(A1)** Create structures for regularly updated data collection on recruitment, retention, and graduation of undergraduate, master's, and PhD students (by gender, race/ethnicity, and first-generation

status) and faculty hiring. We have been selected for a Data Grant from Northeastern University to help create this process [Weatherspoon]. **(A2)** Conduct an annual survey through the CRA Data Buddies program [Lee and R. Kleinberg]. **(A3)** Analyze the bi-annual graduate school survey [R. Kleinberg and Tardos]. **(A4)** Create targeted surveys developed with student leaders to address particular issues that arise [Tardos].

G2. Improve the **climate** for BLNP students and women to eliminate differences between demographic groups by 2025. This includes **(A5) supporting student groups**, including Women in Computing at Cornell (WICC), UnderRepresented Minorities in Computing (URMC), Graduate Underrepresented Minorities in Computing (Grad-URMC), Graduate Students for Gender Inclusion in Computing (GSGIC) [Bindel]; **(A6)** encouraging students after setbacks via **morale-boosting sessions** in the introductory courses [Tardos]; **(A7) diversifying the TA-pool** and running training for TAs including bias training [Fan], **(A8)** introducing **bystander training, climate training** [new, Tardos]; and **(A9) reading groups** to educate our community about issues that hinder broadening participation [Damle and Hirsh].

G3. Increase the percentage of BLNP and women students and faculty in the program to match the percent in Engineering at Cornell via activities that enhance **outreach, recruitment, and retention** of BLNP and women students and faculty. **(A10)** We sponsor **attendance at diversity events**, such as sending 30-40 faculty, ugrad and graduate students to the Tapia and the Grace Hopper conferences, and may expand this to AfroTech [continuing, Bindel]. **(A11)** We host an annual **High Schools Girls Programming Contest** between Ithaca and New York City [van Renesse], and **(A12)** an outreach to high school students in Africa called **CodeAfrique** (<http://codeafrique.com>) [Weatherspoon]. **(A13)** We adapted the admission process to the PhD program to **diversify the PhD student population** [Tardos]. **(A14)** We have several outreach and recruitment efforts of women and BLNPs: **(A15) ExploreCSR** encourages women students to go on to get a PhD in computing [Tardos]; **(A16) SoNIC Summer Research Workshop** targets increasing participation of BLNP students at the Ph.D. level in computing [Weatherspoon]; and **(A17)** the Cornell, Maryland, Max Planck **Pre-doctoral Research School (CMMRS)** rotates between Cornell, Maryland, and Max-Planck and targets increased representation of women in the PhD [Alvisi]. **(A18)** We are **increasing outreach to potential female and BLNP faculty** through personal contacts and attendance lists of the Rising Stars program, the Tapia conference, etc [Tardos]. **(A19)** We further develop and continue running a **Rising Sophomore Summer Program (CSMore)** for BLNP students and those from disadvantaged backgrounds who might want to be CS majors [Bracy, Tardos, Weatherspoon]. **(A20)** Cornell's Prefreshman Summer Program (PSP) offers a residential experience that helps level the playing field for BLNP students and those from disadvantaged backgrounds. Starting this summer, we have reserved PSP spots for a few additional students interested in CS. We will also offer additional support for PSP students who take the introduction to computing course in their pre-freshman summer [Bindel]. **(A21)** Freshman courses, such as introduction to computing, are accompanied by one-credit **Academic Excellence Workshops (AEWs)**, taken by many students from disadvantaged backgrounds. We plan to expand these offerings to sophomore and junior courses [Bindel and Tardos].

G4. Increase faculty involvement with New York Tech broadening participation programs: **(A22)** Cornell Tech offers faculty the opportunity to engage in BPC activities through **Break Through Tech**, which partners with public universities to double the number of women majoring in computer science, and a robust K-12 CS education initiative, working to make computer science teachable in NYC public schools. Faculty give talks to BLNP K-12 and undergraduate students, hire interns, provide curriculum consultation and participate in campus visits [Estrin].

Metrics for success: To track composition across our program, we will collect the following data annually, broken down by gender and demographic category: (a) composition of undergraduate, master's, and PhD students and faculty; (b) drop rate for the core courses for our major; (c) rate at which freshmen taking introductory computing courses choose to major in CS; (d) composition of master's program applicants, acceptances, and enrolled students; (e) composition of students who leave the masters and PhD program without a degree; and (f) composition of faculty applications, interviews, offers, and acceptances. To monitor climate issues in our undergraduate program, we will conduct an annual survey through the CRA Data Buddies program. To monitor climate issues in our PhD program, we will rely on the bi-annual graduate school survey. We will augment this survey with targeted surveys developed with student leaders to address particular issues that arise. Further, Cornell is part of the NSF Leadership in the Professoriate (LEAP) alliance, a coalition of the 11 top computing schools who are sharing admissions and retention strategies aimed at increasing the number of BLNP and disabled students who enter and finish the PhD with the long-term goal of significantly altering the composition of the professoriate.