

**Departmental BPC Plan
Computer Science
The University of Alabama at Birmingham**



Effective dates of Plan: 01/07/2022- 01/07/2024

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1. Context

UAB is an urban university that occupies over 25% of the downtown Birmingham area. 26.8% of the population in the State of Alabama are Black. In the Birmingham Metropolitan Area, where the majority of our students come from, 31.6% are black. In Fall 2020, 24% of the 13,878 undergraduate students at UAB were black, and 61.7% were women. Among the nearly 600 undergraduate students enrolled in our computer science program in Fall 2020, 19.7% were black and 22.5% were women. We are proud of the high number of black students, twice the national average, and hope to maintain these levels. These percentages have stayed relatively consistent in the past few years, despite rapid increase in the total number of students in CS programs. Although the percentage of women is at the national average, we are intent on increasing this number. Currently, very few undergraduate students go on to do graduate studies immediately upon graduation.

	Alabama (2019)	Bham Metro (2019)	UAB UG (2015-19)	US CS UG (2015-20)	UAB CS UG (2015-20)	UAB CS UG Retention (2015-20) (FR,SO,JR,SR)	UAB CS MS (Domestic) (2015-20)
Women	51.7%	52%	59.9%	19.3%	19.4%	18.6%,20.1%, 20.7%,18.1%	19.8%
Black	26.8%	31%	25.5%	10.3%	20.1%	23.7%,19.7%, 18.4%,16.8%	

2. Goals

G1: (recruitment and retention of women students): each year, increase the number of women students in our undergraduate and MS programs.

G2: (retention of black students): each year, increase the number of graduating black students, by increasing retention.

G3: (advancement to graduate programs): each year, increase the number of domestic women and black students who go on to attend graduate school, whether at UAB or elsewhere, whether in CS or in another field.

To measure these goals, we shall use a sliding 3-year window, starting with 2017-19 and ending with 2022-24.

3. Activities and Measurement

In the activities below, “target groups” include women prospective and current undergraduates and MS students, and Black current undergraduates and MS students.

A1 (**HSPC**): For our annual high school programming contest (HSPC), develop targeted marketing and promotion strategies and materials, specific awards for target groups, mechanisms for virtual delivery, content for the contest and satellite lectures, and help with coding projects to attract broader participation by our target groups. *Metrics*: #schools represented; % of women; #students who attend (G1,; Mahmut Unan and Tom Gilray)

A2 (**Mentoring**) Provide mentors and role models for current and prospective students among the target groups. Mentors can be alumni, current students, faculty, and external professionals. The mentoring will be informal and volunteer. The department will facilitate volunteer sign up and matching between students and mentors, as well as meeting scheduling. *Metrics*: #students mentored; #faculty mentors; #industry mentors; #mentored students in target groups (vs. non-mentored) who successfully complete the program); #mentored students in target groups (vs non-mentored) applying for Accelerated BS/MS Program (new activity for G1, G2, G3; Emily Wykle at UAB level; Tracy Zhang and John Johnstone)

A3 (**Scholarships**): Establish more undergraduate and graduate scholarships, funded by local industry partners, and fellowships (e.g., funded by NSF, such as our present SFS grant); recruit students to become eligible, and apply, for these scholarships/fellowships, as well as making them more competitive through mentoring and research. *Metrics*: #scholarships eligible for target groups; #students in target groups awarded scholarships (G1, G2, G3; John Johnstone and Ragib Hasan)

A4 (**Student organizations**): Establish more student organizations related to the target groups, such as Robotics and Women in Tech clubs, that encourage them to learn computing and offer a peer group. *Metrics*: participation in organizations, #events planned by the organizations (new activity for G1, G2; Mahmut Unan and Tom Gilray)

A5 (**SI leaders**): Add student supplementary instruction (SI) leaders in core undergraduate courses, who will provide targeted tutoring for students in the target groups. *Metrics*: #students in target groups participating in SI sessions; feedback from students about SI sessions; #students in target groups who pass a core course with ‘B’ or better, after attending a majority of SI tutoring sessions for that course (new activity for G1, G2; Baocheng Geng and Sid Kumar)

A6 (**REU development**): Develop materials to help faculty seek out REU funding and mentor students in a supportive way, both individual students and summer programs. *Metrics*: #applications by faculty to REU program; #successful REU applications (G3; Yuliang Zhang)

A7 (**REU mentoring**): Train faculty on undergraduate research mentoring, who will mentor undergraduate research on REU grants or summer programs. *Metrics*: #students participating in REU programs; #minority students participating in REU programs; #minority students who participate in REU and continue on to graduate school (G3: Da Yan)

A8 (**Data tracking**): Maintain data on retention and recruitment of the target groups. *Metrics*: #years tracked; #different measures; #enrollment and #graduation by target group, including data for each year and three-year average (G1, G2, G3; Yuliang Zheng)