BPC Plan, Department of Computer Science, University of Arizona

Effective dates of plan: August 2020 through August 2023
Revision of plan will begin: January 2021
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Context

University of Arizona (UA) is one of three major public universities in the state of Arizona. UA is one of only a few R1 research universities to be a Hispanic Serving Institution, and the first of the three AZ state universities to have that distinction. The Department of Computer Science (UACS) serves approximately 1400 undergrads and 100 graduate students. The following table shows, as of Spring 2020, the underrepresentation of women, Hispanic/Latinx, African American, and Native American populations in UACS's undergraduate program relative to both the university and state populations.

	AZ population	UA ugrad (57% AZ residents)	UACS ugrads
Native American	5.2%	1.1%	0.95%
Black/African American	5.3%	4.6%	3.85%
Hispanic/Latinx	31.7%	26.3%	22.5%
Women	50.3%	53.5%	16.7%

Goals

As an initial focus, the BPC mission of UACS is to **substantially increase the percentages** of women and students from underrepresented groups of Hispanic/Latinx, Black/African American, and Native American among our **undergraduate students** over the next **ten years** to better **reflect the demographics of the university and state** population. Specifically,

1. To help identify issues and monitor progress, our goal is to implement mechanisms to collect, track, report, and regularly discuss additional data with respect to broadening participation by the end of Spring 2021 and revisited each academic year.
2. To promote a more inclusive environment, our goal is to expand the number of and participation in community-building activities from our initial focus populations.
3. To improve recruitment and retention of our initial focus populations among UA students, our goal is to increase both (1) the number of out-of-classroom mentoring opportunities for students and (2) the number of faculty participating in research and mentoring programs.
4. To improve our local recruitment pipeline to better reflect state demographics, our goal is to increase the number of students and faculty who participate in CS-specific, K-12 outreach programs at local schools.

Activities and Evaluation

For each of the below activities, we provide a description, potential faculty engagement, and any additional evaluations beyond the evaluations listed last.

● **Improving our Data Collection Process [Goal 1, Lead: Alon Efrat]:** We have created a new DEI committee whose responsibilities include annually collecting and reviewing demographic data for our student enrollment and retention, and particularly focus on evaluating retention within our introductory course sequence as well as the relationship between our pre-major and student retention. We also will participate in the CRA Data Buddies project (https://cra.org/cerp/data-buddies/) and develop a faculty service role associated with collecting, tracking, and understanding participation at UACS. This data will be disseminated to the UACS community. We will evaluate the effectiveness of this through the quantity and regularity of data we collect and percentage participation in the CRA Data Buddies.

- **Community-Building Activities [Goal 2, Lead: Melanie Lotz]:** We will develop and continue to expand upon multiple programs available to UACS students that encourage participation from underrepresented groups, including:
    - **UACS Student Clubs**: UACS will support existing clubs that focus on underrepresented groups, such as our Women in Computer Science (WICS) club. Modeled off of WICS, we are also working to create new clubs to encourage participation among Hispanic/Latinx, Black/African Americans, and Native American students. Other existing UACS clubs focus on special interests like our Game Dev and ACM clubs. Faculty mentors of any club will also work to inform and engage students regarding department BPC efforts.
    - **Grace Hopper and Tapia Participation**: UACS currently works with UA's College of Science's Development Office to secure funds to support student groups to attend Grace Hopper and Tapia. We will continue this effort. Students are encouraged to participate via outreach efforts in classrooms and social media, and are selected via an application process.
    - **UA Girls Who Code**: UACS will continue its support of the University chapter of Girls Who Code (https://wise.arizona.edu/girlswhocode).
    - **CSForAZ:** UACS will continue to support CS for AZ (https://csforaz.org/about/). In the past, we have sponsored and hosted professional development days for the organization through membership to the southern AZ chapter. Department advising staff have served on the committee to help participants with professional development.

    Each of the above will be evaluated by tracking the numbers of students and faculty mentors who participate as well as correlating participation with retention.
- **Undergraduate Out-of-Classroom Mentoring [Goal 3, Lead: Rene Garciaguirre]:** To build students' confidence and help them see themselves advancing in the field, faculty and industry mentors provide and will continue to provide out-of-classroom training. UACS's undergraduate advisors currently recommend to students that they should participate in one of the following activities before their junior year: (1) undergraduate research; (2) teaching assistantships; (3) other faculty engagement, such as competitions, working in other departments and local events; or, (4) outside internships. To bolster these efforts, we will create forums such as undergraduate research celebrations to complement our existing CS-specific career fair and further facilitate student engagement. Although these opportunities will be available to all undergraduate students, we will recruit and track students from underrepresented groups separately to ensure they are being supported by the programs.
- **CS Ambassadors [Goal 4, Lead: Martin Marquez]:** UACS will contribute to existing programs to bring students and teachers from the broader Tucson community into Computer Science through our CS Ambassadors program (https://www.cs.arizona.edu/undergraduate/get-involved/ambassadors) for K-12 outreach and internship. Both students and faculty participate in yearly events. Note that many of these efforts are advised by Department faculty and staff, but often run by undergraduate students in our major.

Evaluation [All Goals]: In addition to measurements of specific activities mentioned above, we will track the following metrics using Spring 2020 as a baseline. We will track these annually so that the department can assess the impact of our activities and identify new problems.
- Percentage of faculty participating in this BPC Plan.
- Percentage of students engaging in research/mentoring and participation in community-building activities, as measured by our advising staff.
- Demographic shifts of undergraduate student population, relative to university and local population. These will include both enrollment and retention rates.
- Number of students (undergrads who participate vs. K-12 students who we reach) per year participating in the Department's K-12 outreach programs.