Departmental BPC Plan
Department of Computer and Information Sciences
Temple University
Effective Dates of Plan: 8/2020-8/2025
Contact: Jamie Payton, Chairperson, payton@temple.edu

1. **Context:** Temple University is an R1 research institution that is committed to community engagement and teaching excellence. The university serves a diverse student body of over 40,000 students. Over 79% of Temple students receive need-based financial aid with 27% receiving Pell grants, a proxy measure for identifying low-income students. Student population demographics by race for the

	Temple	CIS
White	55.10%	43.52%
Asian	12.10%	25.18%
Black/African American	12.80%	10.64%
American Indian/Alaska Native	0.10%	0.00%
Native Hawaiian/Pacific Islander	0.10%	0.24%
Hispanic/Latinx	7.70%	6.11%
Two or more races	3.70%	4.16%
Nonresident	0.06%	7.58%
Race/Ethnicity Unknown	2.70%	2.57%

2018-2019 academic year for students at Temple and the 1000+ students enrolled in bachelor's degree programs within the Department of Computer and Information Sciences (CIS) are shown in the table. 16.75% of CIS majors and 23.39% of BS/BA degree awardees are women.

2. **Goals:** We aim to achieve the following over the next 5 years:
   G1. Increase the percentage of African American students entering CIS undergraduate degree programs from 10% to 13% (a 30% increase), which is approximately at parity with the demographics of the university population (12.8%) and with the US population (13.4%).
   G2. Increase the percentage of women students entering CIS undergraduate degree programs from 16.75% to 25% (a 49% increase), which aligns with outcomes achieved at other institutions.
   G3. Increase the representation of African American students as CIS undergraduate computing degree awardees from 5.1% to 10% (a 150% increase), aligned with representation in the major.
   G4. Increase the representation of women, African American, and Hispanic/Latinx candidates who are interviewed, hired, and promoted as faculty within our department to reflect the demographics of the national pool of candidates with doctoral degrees in computing.

3. **Activities and Measurement**: We are engaged in the following **activities** to address our goals:
A1. *Building Capacity and Community for Taking Action to Broaden Participation (G1-G3)*
   - *Improve CIS data analysis to identify areas of inequity and barriers [G1-G3].* CIS will work with Institutional Research to develop a data analysis plan to explore trends in enrollment, DFW rates, year-by-year retention, and cohort based retention (disaggregated by race, gender, socioeconomic status, disability status, and intersections thereof). Data and findings will be discussed at the annual CIS faculty retreat and used in strategic planning processes. *[contact: Payton]*
   - *Educate faculty on evidence-based approaches for recruiting women and African American students [G1, G2] and retaining African American students [G3].* CIS participated in the 2018 AnitaB BRAID program as an affiliate and the NCWIT Learning Circles program in 2020-2021 to develop strategic plans for increasing representation of women in our programs. As a result, the faculty involved in the project gained knowledge about evidence-based BPC practices and resources. Going forward, CIS will hold quarterly sessions to share knowledge gained and results from those projects. In addition, CIS will host an annual 2 hour workshop in consultation with national BPC experts (e.g., CRA-WP, iAAMCS, Center for Inclusive Computing) and identify action items for implementation. Finally, the department will support faculty to attend national meetings focused on diversity, equity, and inclusion in computing. *[contact: Payton]*
   - *Build inclusive student community through student-led BPC efforts. [G1-G3]* The STARS Computing Corps is an NSF BPC Alliance headquartered at Temple. Through STARS, faculty support college student cohorts in leading service-learning activities designed to broaden

participation in computing, including working with K12 educators to support CS for All efforts. Students in STARS show increased self-efficacy, sense of belonging, and computing identity, with disproportionately positive effects for Black and Hispanic students [G3]. Temple's STARS chapter partners with the School District of Philadelphia (SDP); 49% of SDP students identify as Black, 20% as Hispanic, and 7% as multiracial [G1, G2]. *[contact: Morris, McGinnis]*

- *Build inclusive student community through participating in BPC conferences as a cohort. [G3]* CIS prepares and sponsors student cohorts to attend the Tapia Celebration to build an inclusive community for and among students of color, with follow up meetings of the cohort with faculty. *[contact: McGinnis, Pine-Simon]*
- *Support socially relevant undergraduate research experiences [G3.]* Undergraduate research experiences can support retention in undergraduate degree programs. Situating research in a socially relevant context has been shown to be effective for engaging students from underrepresented groups, and the Affinity Research Group (ARG) model has been pointed to as an effective approach for creating inclusive research cultures. Building on our REU Site and Undergraduate Research Program leadership, CIS will provide faculty with training in the ARG model for faculty and graduate student mentors and help faculty to identify ways to design their undergrad research projects to connect to a socially relevant context. *[contact: Payton, Wu]*

A2. Inclusive Teaching Practices (G3): Incorporating inclusive teaching practices in introductory courses is a strategy for recruiting non-majors and retaining majors from underrepresented groups in computing.

- *Workshops.* Temple's Center for the Advancement of Teaching (CAT) offers expertise in inclusive teaching practices and culturally responsive pedagogy. In 2019, CIS began working with CAT to offer tailored seminars and faculty coaching, and will continue to collaboratively offer these activities. CIS also encourages and commits support for faculty to attend professional development workshops on inclusive teaching and anti-racism. *[contact: Payton]*
- *Course redesign.* In 2020, CIS began working with CAT and the center for online education to redesign introductory CS courses to integrate inclusive teaching practices; this effort continues. *[contact: Fiore, Rosen]*
- *Peer teaching review.* In 2020-2021, faculty will work with CAT to revise peer teaching evaluation rubrics to include items on inclusive teaching practices and implement use thereafter. *[contact: Morris, Kwatny]*

Measurement for A1, A2: Using 2018-2019 data as a baseline, we will evaluate impact on enrollments, retention, and graduation rates (disaggregated by race, gender, SES, disability status, and intersections). To understand the impact of strategies related to climate, the department will participate in the CRA CERP Data Buddies program, which measures undergraduate computing students' self-efficacy, sense of belonging, interest in computing, perceptions of the department, and intentions to persist. Individual CIS BPC plan activities will be evaluated using similar metrics, supported with instruments available in the CSEdResearch.org repository. Faculty-focused workshops will also be evaluated: % of faculty attending, post-training surveys on perceptions/beliefs, reflections on learning and planned action items.

A3. Recruiting and Retaining Faculty from Underrepresented Groups in Computing (G4): CIS will partner with the Office of Institutional Diversity, Equity, Advocacy and Leadership (IDEAL) to provide training on implicit bias for faculty search and promotion committees. In 2020-2021, faculty will work with CAT and IDEAL to revise the peer teaching process to address equity in documents used for promotion. The department will also leverage faculty participation in BPC convenings, resources, and networks to learn more about how to recruit faculty from underrepresented groups and removing structural barriers to promotion and advancement and will put lessons into practice on hiring and promotion committees. *Measurement for A3:* Using national and local hiring data, we will compare the applicant pool, interview pool, candidates pool, faculty hired, and faculty promoted (disaggregated by race, gender, socioeconomic status, and intersections thereof). *[contact: Payton, Souvenir]*