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Departmental BPC Plan
Department of Computer Science
Vanderbilt University

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Effective dates of Plan: 09/16/2022- 09/16/2024
Contact: Xenofon Koutsoukos (xenofon.koutsoukos@vanderbilt.edu), Chair of the CS Dept

1. Context

Vanderbilt University is a private R1 university based in Nashville, TN. It offers an immersive living–learning undergraduate experience, with programs in the liberal arts and sciences, engineering, music, education, and human development. Vanderbilt's total enrollment in 2020-21 was 7,057 undergraduates. Computer Science (CS) resides in the School of Engineering (VUSE). Computer Science-specific undergraduate data shown in the table below indicate that while Vanderbilt's figures may be in some cases above the national average, there is still a strong need to increase the number of students who are women or identify as members of underrepresented racial and ethnic groups (URG), including African American and Hispanic or Latino students.

CS Undergraduates First Major	Women: 185 (32.7%)	URG: 74 (13%)	Total: 565
CS Undergraduates 2nd/3rd Major	Women: 58 (37.6%)	URG: 21 (13.6%)	Total: 154
CS Undergraduates Total	Women: 243 (33.8%)	URG: 95 (13.2%)	Total: 719
CS Faculty (Tenured or Tenure Track)	Women: 6 (22.2%)	URG: 0 (0%)	Total: 27

2. Goals

G1: Each year, increase the percentage of undergraduate students from underrepresented groups in CS until we reach 40% women (VUSE percentage) and 15% URG students.
G2: Each year, increase the percentage of women and all students from underrepresented groups from Vanderbilt who apply to any school for graduate studies by 10%.
G3: Increase the number of new faculty hired from underrepresented groups in CS until we reach 30% (URG and women, combined).
G4: Each year, increase the number of faculty who have taken measurable steps to create a more diverse, welcoming and inclusive environment in their classrooms and labs until 20% of our faculty are making updates to their teaching practice and courses or are actively measuring the effect of those changes each semester.
G5: Each year, increase the number of students with disabilities who participate in mentoring programs by 5%.

3. Activities and Measurement

A1: [Undergraduate on-campus mentorship and recruiting (G1)] Contact: Julie Johnson (julie.l.johnson@vanderbilt.edu)
A large number of our students switch to CS from other majors in the first two years of their studies at Vanderbilt. This activity applies focused faculty mentoring of Vanderbilt

undergraduate women and URG students to recruit them to CS by providing resources and mentorship programs at the first- and second-year level as well as training faculty to mentor students who are interested in computing. The activity will measure the number of students who transition to CS.

A2: [Focused Mentorship (G2)] Contact: Jonathan Sprinkle (jonathan.sprinkle@vanderbilt.edu)

Focused faculty mentoring of undergraduate women and all students from underrepresented racial groups via an annual workshop, immersion projects, and interdisciplinary summer internships to encourage them to apply to graduate programs in computer science. Train faculty to mentor proteges participating in Immersion Vanderbilt mandatory undergraduate experiential learning) through specific tasks. These include identifying candidate graduate schools and their deadlines, composing research statements, and coordinating their letters of recommendation to maximize acceptance at top-tier graduate programs. The activity will measure by demographics the applications submitted, fellowships received, acceptance rates, and school attended.

A3: [Faculty Recruitment (G3)] Contact: Xenofon Koutsoukos (xenofon.koutsoukos@vanderbilt.edu)

Vanderbilt University has embarked on a faculty hiring campaign called Destination Vanderbilt. As part of this campaign, the Computer Science Department is hiring 20 faculty members, which provides us with an opportunity to diversify our faculty. The activity will increase representation of URG and women among faculty through strategic advertising, identifying candidates (e.g., Rising Stars), training in implicit bias and hiring best practices for members of search committees. This activity will measure applications received and faculty hired from underrepresented groups in CS.

A4: [Faculty Training (G4, indirectly G1, G2)] Contact: Julie Johnson (julie.l.johnson@vanderbilt.edu)

To aid faculty in creating a more diverse, welcoming, and inclusive classroom environment, we will capitalize on the numerous training resources already available at Vanderbilt. Compile a set of learning modules that are relevant to broadening participation which will be reviewed and updated yearly. New material will be added periodically, and faculty will be given the opportunity to suggest additional resources to the portal. Faculty will complete at least two modules annually and engage in a more formal praxis every two years. Faculty can develop and execute plans to integrate what they are learning into their teaching practice and measure the results of these changes. Progress and outcomes will be documented in Faculty Activity Reports (required yearly self-reports) and shared with the rest of the department. This will enable faculty to learn from each other and to build on innovations that work at Vanderbilt

A5: [Mentoring for Neurodiverse Students through the School of Engineering's Frist Center for Autism & Innovation (G5)] Contact: Keivan Stassun (keivan.stassun@vanderbilt.edu).

This activity provides mentoring as part of an annual internship program for autistic and other neurodiverse students in STEM majors. CS Faculty will serve as these mentors, with coordination through the Frist Center for Autism and Innovation, which operates the annual internship program and conducts recruiting through the national College Autism Network. We will track the number of students with these disabilities that participate in the Computer Science components of the program and will track their retention in CS and other STEM majors.