

Broadening Participation in Computing Plan
The University of Texas at Austin
Computer Science (CS) and Electrical and Computer Engineering (ECE)
Effective Dates: 12/07/2021- 12/07/2023



Prepared and Overseen by:

CS: Don Fussell, Chair (fussell@cs.utexas.edu) ECE: Diana Marculescu, Chair (dianam@utexas.edu)
Alison N. Norman (ans@cs.utexas.edu) Christine Julien (c.julien@utexas.edu)
Andreas Gerstlauer (gerstl@ece.utexas.edu)

1. Context: The University of Texas at Austin is a flagship R1 institution in Texas and is home to nationally recognized departments of Computer Science and Electrical and Computer Engineering. The state of Texas has a significantly larger Hispanic and Latinx population and labor force (around 40% of the total population) than nationally (around 7%). Among Texas residents aged 18-22, 45.8% are Hispanic, 12.5% are Black, and 48.6% are women. UT Austin is located in the Austin Independent School District, where the 2020-2021 demographics included 55% Hispanic students and 6.6% Black students. These numbers are in contrast to the populations of the two departments. In Computer Science, 11% of undergraduate students are Hispanic, 2.8% are Black, and 24.7% are women (n = 1877 total students). In Electrical and Computer Engineering, 15.1% of undergraduate students are Hispanic, 3.4% are Black, and 18.9% are women (n = 1488). Among graduate students in the CS department, 4.0% are Hispanic, 1.5% are Black, and 16.4% are women (n = 262). In the ECE department, 3.1% are Hispanic, 0% are Black, and 17.4% are women (n = 540). Overall at the University of Texas at Austin, the demographics also lag the state population; overall, 23.4% of students are Hispanic, and 5.3% are Black.

2. Goals, Activities and Metrics: The mission of the UT Austin computing departments is to substantially increase the percentage of enrolled, retained, and graduated students from historically underrepresented groups (students who identify as women, gender non-binary, Black, Native American, Alakan Native, Native Hawian, Pacific Islander, and/or Hispanic) over the next five years to better reflect the demographics of the university, state, and local Austin populations, . We state four broad goals to address recruitment, retention, and support of students from all underrepresented backgrounds. The difficult and complex issue of unbalanced participation in computing requires a multi-pronged approach, and thus we list activities in support of these goals after each one.

[Goal 1, G1] Increase the diversity of enrolling undergraduate students by expanding and supporting existing recruiting efforts for students from historically underrepresented groups. Our goal is for our incoming student body to be 40% women, 20% Hispanic, and 10% Black students by 2025.

- [A1.1] Day camps and summer camps, e.g. CS Summer Academies, and the Longhorn Engineering Summer Camp (LESC). Over the next 5 years, we will expand existing summer camps to include 8 weeks of free and scholarship-based programming. We will continue to collaborate with DDCE to recruit students from underserved middle and high schools.

- [A1.2] Collaborations with K-12 schools, e.g. the Edison Lecture Series, Coding in the Classroom, and AI/ML 101 for High School Educators. Over the next 3 years, we will expand collaborations to include 15 Texas high schools, 6 middle schools, and 6 elementary schools. These programs will include outreach, recruitment, and professional development for teachers.

- [A1.3] Yield efforts for students from historically underrepresented backgrounds, e.g. through outreach via phone calls and/or letters. Both departments already reach out to all admitted students from underrepresented backgrounds. In ECE, all of these students later participate in the Texas ECE Exploration Day during the summer before joining. In CS, students from underrepresented backgrounds also participated in targeted on-campus yield events. Over the next 3 years, we will expand to have each department holding 7 yield events per year to convey to students from diverse backgrounds that they are welcome and encourage them to enroll.

- [A1.4] Over the next 2 years, we will create a summer transition program in ECE and expand the one in CS. These programs will be open to all students to help them feel included and welcome in the department upon arrival.

Contact: For CS: Michaela Cicero. For ECE: Veronica Vasquez

[Goal 2, G2] Build culture change through training and other interventions across the on-campus computing community to better retain undergraduate students from historically marginalized groups, with the goal of conducting 24 such events per year by 2025.

- [A2.1] Student support structures and welcoming environments, e.g. the ECE TALENT Success Program, CS Welcoming Environment Trainings, and first-year interest groups and ethics classes. We will host yearly ally and welcoming environment trainings for TAs, students, student organization officers, faculty, and staff. CS hosts a second-year “orientation refocus” that introduces the idea of graduate school, and prepares students to better select upper division electives. CS also uses this time to foster discussions about when students have felt they did not belong in the major. Beginning this year, that effort will expand to ECE.

- [A2.2] Hosted learning communities with guided reading lists to challenge our thinking around social issues and computing. The communities have and will include faculty, staff, and students.

- [A2.3] More informal efforts like regular community town halls, clubs or events like faculty fireside chats organized by student organizations also provide foundations.

Contact: For CS:: Alex Bernal and Alison Norman. For ECE: Brittney Outlaw

[Goal 3, G3] Support pathways specific to recruiting undergraduates from historically underrepresented groups to join graduate programs. We will establish or expand 4 programs and recruit from 7 minority-serving institutions with the goal of reaching 40% women and 20% Hispanic students by 2025.

- [A3.1] Summer research and research experience for undergraduate (REU) programs to positively impact students’ enrolling in graduate programs, e.g. the ECE Next program. Within the next 2 years, we will connect with 7 other CS/ECE departments at Minority Serving Institutions and/or affinity-based student organizations for underrepresented students at other departments so that we can meet and recruit students both to summer research programs with faculty and to our graduate programs. CS will work to establish a formal REU program.

- [A3.2] Graduate Application Assistance Programs in both CS and ECE. The ECE Next program already offers a fall semester workshop on graduate school applications, followed by personalized guidance for ECE Next scholars. Within 3 years, CS will formalize its offerings into a similar program, and we will both expand on this and create “research days”: sessions at the beginning or end of winter break to help undergraduate students from UT Austin and beyond learn about graduate school in our departments. CS already holds annual sessions on the same topics for student organizations. ECE will expand and build on the existing ECE Next program.

Contact: For CS: Michaela Cicero. For ECE: Sharon Bressette

[Goal 4, G4] Ensuring current students in our graduate programs feel included after recruiting. We will develop or expand our mentoring programs and establish yearly panels by 2025.

- [A4.1] Graduate mentoring programs, including our participation in the LEAP Alliance, as well as a new program in ECE beginning this year and CS’s current graduate mentoring program that provides mentoring to a limited number of students from underrepresented backgrounds. CS and ECE will begin collaborating on graduate mentoring, as we often share graduate students. The program will provide peer mentors to entering graduate students and cross-department seminars on topics like time management, imposter syndrome, etc. As part of this effort, we will also assign faculty mentors to each graduate student from a historically underrepresented group. The mentor, from outside the student’s research area, will act as a sounding board and help the student navigate their advisor relationship and other aspects of the PhD.

- [A4.2] Starting within 2 years, we will host Ph.D. career opportunity panels that bring in PhDs who are faculty or researchers at other institutions for technical talks and other informal interactions with graduate students from both departments. We will intentionally create diverse panels.

Contact: For CS: Alex Bernal or Alison Norman. For ECE: Veronica Vasquez

To measure the success of these programs, we will monitor the demographics of participants, including any K12 students, undergraduate students, faculty, and staff involved in these programs to better understand both program acceptance and program success. We will collect information on the demographic changes of our applicant pools, admitted students, and matriculated students. We will also use surveys and other qualitative feedback mechanisms to measure changes to our culture.