

Broadening Participation in Computing (BPC) Plan

PI Lovelace is the CS@Mines Data Chair and will Track data for disaggregated participation and retention data for the department (Activity 1). Co-PI Turing will coordinate and facilitate visits with the CS@Mines On Tour K-12 outreach program (Activity 2).

Throughout our plan we define those marginalized in tech as people who identify as: women, African American, Hispanic/Latinx, American Indian, Native Alaskan, Native Hawaiian/Other Pacific Islanders, and/or a person with a disability. We use women/AHND as shorthand for these groups.

Activity 1 – Track Data for Departmental BPC (PI Lovelace)

1. Context

PI Lovelace will annually track and report student demographic data to evaluate other BPC activities and use data to inform the development of new BPC activities.

CS@Mines demographics are (Fall 2021):

- 987 undergraduate students (22.9% women; 18.8% AHND)
- 149 graduate (M.S. and Ph.D.) students (23.5% women; 11.3% AHND) Additional data will be collected as part of this activity.

2. Intended Population(s)

Activity participants: All CS@Mines students and applicants are included in the data.

Participant recruitment: N/A

3. Strategy

Summary of Activities:

As Data Chair, PI Lovelace will collect/analyze the following data (broken down by gender and racial/ethnic groups):

- Admissions data (e.g., number of applications, acceptances, and enrollments for CS),
- Major data (e.g., number of undergraduate majors, M.S. students, and Ph.D. students), and
- Retention/Attrition data (e.g., number of undergraduate students that leave the CS major and when, students who are retained from our CS1 course to CS2

course, etc.).

PI Lovelace will collect this data immediately after the Fall Census day. PI Lovelace will then create a report that highlights historical/recent trends and any areas of concern. This report will be shared with all faculty in the CS@Mines Department by mid-October. PI Lovelace and the CS@Mines Department will meet shortly after the report is finalized to discuss the data report developed by PI Lovelace and determine what BPC activities/plans the department faculty should focus on for that academic year.

Responsibilities of PIs: PI Lovelace is the CS@Mines Data Chair and will collect, analyze, and share this data within the department and with Mines DI&A.

4. Preparation

PI preparation: PI Lovelace has prior experience in collecting/analyzing data. She will continue to work with the following offices at Mines to gather the demographic data mentioned: Admissions, Registrar, and Institutional Research.

5. Measurement

In the annual report, we will include the report generated by this activity.

Activity 2 – Participate in CS@Mines on Tour (Co-PI Turing)

1. Context

Each year, Co-PI Turing will recruit 12 women/AHND undergraduates to participate in CS@Mines On Tour and visit six high schools where Hispanic students represent at least 60% of the student population. As context, 33.5% of Colorado High School students are Hispanic, 53.8% are White, and all other groups make up less than 5% (Retrieved from the "Statistics" page on the BPCnet portal).

2. Intended Population(s)

Activity participants: Women/AHND undergraduate students who will visit schools. Women/AHND high school students who will participate in the visits.

Participant recruitment: Co-PI Turing will work with the coordinator of the CS@Mines On Tour program to recruit HS teachers willing to have CS@Mines On Tour visit their classroom. Teachers will be recruited who primarily serve AHND students.

Co-PI Turing will also recruit women/AHND undergraduate students to lead presentations at these high schools. This will be done by (a) preparing promotional materials, (b) revising the materials based upon feedback from a few students, and (c) distributing the material to affinity groups in CS@Mines and to students enrolled in Co-PI Turing's courses.

3. Strategy

Summary of activity: As part of the CS@Mines On Tour program, CS@Mines students travel to K-14 schools (for this activity, just high schools) with an interactive presentation about CS that encourages interest in CS for the goal of broadening participation in computing. Undergraduate students involved in On Tour also form a supportive community. This activity creates interest in CS for high school students. Additionally, undergraduates who share their interest in CS with others may increase their identification with CS and their sense of belonging in the department.

Responsibilities of PIs: Co-PI Turing will

- Recruit undergraduate students to visit local high schools, as outlined above.
- Work with the CS@Mines On Tour coordinator to train recruited undergraduate students on best practices to encourage women/AHND students.
- Schedule and visit at least 6 visits to local high school schools during each fall semester and accompany the undergraduate students to the high schools visited to engage in Q&A about studying CS.
- During each spring semester, contact teachers in the schools they visited to invite interested students to the campus and arrange an interactive tour of CS labs.

4. Preparation

PI preparation: Co-PI Turing will work with the program's coordinator and faculty previously engaged in the CS@Mines On Tour program to learn and adopt best practices for visiting high schools.

5. Measurement

In the annual report, we will report (a) how many undergraduate students participated in the activity and (b) which schools were visited, with their demographics.