Broadening Participation in Computing Plan

Department of Computer Science, The University of Iowa

Effective dates of plan: October 2020 through July 2023
Revision of plan will begin: September 2021
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Context

The University of Iowa, established in 1847, is an R1 university, one of three public universities in the State that share a common Board of Regents. It has 32,535 students enrolled as of Fall 2019, with 23,482 undergraduates, 5,900 graduates, 1,858 pre-professional (Doctorate), and 1,295 post-graduate training students.

The Department of Computer Science hosts two undergraduate majors on its own (there are two others offered jointly) and one graduate program offering Master's and Ph.D. degrees. As of the Fall of 2020, the computer science undergraduate major has 499 students, the informatics undergraduate major 118, and the computer science graduate program 93 (students generally settle on a major sometime during year 2, although changes are common through the beginning of year 3). The department has 27 faculty members with a primary appointment in the department (3 in the instructional track, the remaining tenure-track)

We conducted a review comparing demographic information from the state of Iowa, the University, each of our majors, comparable majors from other US institutions based on the 2019 Taulbee survey, and our faculty. Based on our review the area where our department could most improve is in terms of the participation of women in the computer science major. See the table below for a selected set of the data.

Percentage	State of Iowa	University of Iowa	CS ugrad (USA)	CS ugrad (U of Iowa)	Informatics ugrad (USA)	Informatics ugrad (U of Iowa)
Male	49.8	47.1	79.2	85.2	73.6	71
Female	50.2	52.9	20.8	14.7	26.4	29
White (not Hispanic or Latino)	85	74.2	42.7	55	49.4	67
Hispanic or Latino	6.3	7.1	9.9	7	12.3	4
Black or African American	4.1	3	4.7	3.3	9.1	3
Asian	2.7	4.5	24.9	9.5	17.0	10
American Indian or Alaska Native	0.5	0.2	0.3	0.18	0.2	0
Native Hawaiian or Pacific Islander	0.2	0.1	0.1	0.18	0.2	0
Two or more races	2	3.1	3.9	4	4.4	1
International	0	7.9	13.4	17.8	7.4	10

Goals

Our current goals, given the contextual data we gathered are to:
1. Collect and analyze recruitment, retention, and outcome data by gender, race, and ethnicity by December 2021 for the CS undergraduate major.
2. Increase the enrollment of women in the CS undergraduate major to the current national average, 20.8%, by the Fall semester of 2024.
3. Gather data on individual and project-related BPC activities from faculty by December 2021.

Our future plans are to focus on:
4. Increasing the enrollment of students from underrepresented groups in computing (including Black or African American, Hispanic or Latino, American Indian or Alaska Native, Native Hawaiian or Pacific Islander, and persons with disabilities) from a level near or above the University's undergraduate enrollment towards a level similar to each group's share of the college-age population in the state.
5. Eliminating disparities that may exist in outcomes for students in our programs across these underrepresented groups.
6. Increasing participation of our faculty in BPC activities.

Activities and Evaluation

To achieve these goals we will begin by developing a sustainable process to set, implement, and evaluate our BPC goals, activities, and performance evaluation criteria. We will re-evaluate this process every semester (first two years) and then annually. Our BPC goals and plan will be informed by the following initial activities:

(1) Develop a sustainable process to ensure that relevant data across underrepresented groups is collected and stored for easy access every semester including:
    (a) Expressions of interest in computing education at application time
    (b) Enrollment
    (c) Performance in departmental courses (starting with key ones)
    (d) Retention
    (e) Graduation
    (f) Employment (including internships)
Re-evaluate this process every semester.
Addresses goal 1. Responsible party: DEO, Juan Pablo Hourcade.

(2) Participate in the *Data Buddies* survey and review data annually.
Addresses goal 1. Responsible party: DEO, Juan Pablo Hourcade.

(3) Study data collected under activities (1-2) every semester to identify recruitment problems, retention after each computer science course, and outcomes for women.
Addresses goal 2. Responsible party: Undergraduate committee.

(4) Develop a sustainable process to record data with easy access about proposed and ongoing department and faculty activities pertaining to BPC goals.
Addresses goal 3. Responsible party: Padmini Srinivasan.

(5) Analyze BPC goals and activities at annual full faculty, departmental retreat and present most recent data from activities (1-4) at one spring semester faculty meeting.
Addresses goals 2 and 3. Responsible party: DEO.