

**Departmental BPC Plan  
Computer Science Department  
Harvey Mudd College**



**Effective dates of Plan:** 08/25/2022- 08/25/2024

**Contact:** Jim Boerkoel, Department Chair <boerkoel@hmc.edu>

## 1. Context

Harvey Mudd College (HMC) is an undergraduate-only STEM-focused liberal arts institution in southern California co-located with four other undergraduate institutions (Pomona, Pitzer, Scripps, and Claremont McKenna Colleges). Nearly all of the approximately 220 graduates earn a BS in mathematics, physics, chemistry, biology, general engineering, CS, or a joint major between two or more disciplines. In the last three years (2020-2022), 312 HMC students have earned a CS, CS-Math, or Math-CS-Bio major: 45.2% women, 0% American Indian, 23% Asian, 4% Black or African American, 18% Hispanic or Latino, 9% International students, 12% Multiracial students, 0.3% Pacific Islander, 7% undisclosed race, 27% White.

## 2. Goals

G1: Have at least half of the department faculty participate in BPC-focused activities to recruit HS students to attend HMC or pursue a CS career by 2024.

G2: Increase student participation in Data Buddies Survey from 85 students in 2020 to 100 students in 2022.

G3: Fund 40 students and two faculty to attend diversity-focused conferences in 2022.

G4: Have at least half of the department faculty annually support affinity groups through attendance, mentorship, or other sponsorship.

G5: Conduct annual departmental assessments to voice the experiences of all groups of students by disaggregating (for instance, by race, ethnicity, gender) when data allows.

## 3. Activities and Measurement

A1a. [West Conference (G1)]: A day of student panels and faculty-led workshops for high-school women interested in STEM, hosted by our Society of Women Engineers (SWE) chapter. We track the annual participation of both HMC and high school students (Ongoing; swehmcpresidents@gmail.com)

A1b. [FAST/WiSTEM (G1)]: Future Achievers in Science and Technology (FAST) and Women's Inclusion in Science, Technology, Engineering & Mathematics (WiSTEM) are fly-in programs for students from a racial or ethnic groups underrepresented in computing. HMC tracks student participation and we track CS faculty participation in workshop sessions. (Ongoing; Briggs, Montanez, Trushkowsky)

A1c. [NCWIT Aspirations (G1)]: Faculty facilitate a yearly awards event to recognize high-school women and teachers in computing, a program from NCWIT. Our local ACM-WP chapter and faculty review applications, make awards, and throw an awards ceremony on an annual basis. (Ongoing; Medero, Trushkowsky, Schofield, [wacm-leadership-l@g.hmc.edu](mailto:wacm-leadership-l@g.hmc.edu)). We will track the number of student and educator applicants, along with the number of award recipients who attend the awards ceremony.

A1d. [Contacting admitted students (G1)]: Faculty members call or meet with admitted students who would be first-generation college students and/or are from a racial or ethnic group underrepresented in computing. HMC tracks both admittance and enrollment rates across demographics. (Ongoing; Boerkoel, Briggs, Wiedermann)

A1e. [Summer Research (G1, G5)]: The department runs a robust BPC-focused summer research program, including hosting an NSF REU site.

- REU PIs routinely track participation rates by demographic group along with pre-and post-summer self-reported confidence in conducting research, interest in pursuing graduate education, and knowledge of grad school funding opportunities and other resources. (ongoing; Bang, Montanez, Schofield)
- Faculty mentor and track participation rates among Upward Bound high school students, most of whom are Hispanic. (ongoing; Montanez; Covarrubias Aguilar)

A2a. [Data Buddies Survey (G2)]: HMC annually participates in the CRA Data Buddies Survey. We will share the survey with current computing students to encourage participation before the February 1, 2023 deadline. (Ongoing; Greene) When we receive our department report in April 2023, we will discuss the content at a department meeting to identify opportunities for improving the department culture (Ongoing; Boerkoel).

A3a. [Attending Diversity in Computing Conferences (G3)]: We sponsor and track student attendance at diversity-focused conferences as funding allows. Conferences include [tapiaconference.org](http://tapiaconference.org), [ghc.anitab.org](http://ghc.anitab.org), [afrotech.com](http://afrotech.com), the ACM-W Celebration of Women in Computing in Southern California (CWIC-SoCal), Women in Data Science, Black in AI, LatinX in AI, Women in ML, Widening NLP, Queer in AI. Faculty attend and/or help coordinate student travel. (Ongoing; Trushkowsky, Greene, Boerkoel, Wu, Schofield)

A3b. [Organizing Diversity in Computing Conferences (G3)] HMC CS faculty currently lead and help facilitate many events and programs to broaden participation in computing. Examples include the AAAI Undergraduate Consortium (Ongoing; Boerkoel) and the Widening NLP Workshop series (Ongoing; Schofield). Opportunities are advertised on the departmental website.

A4a: [ACM-W (G4)]: We have a student-led ACM-W chapter that started in 2011. The department chair or associate chair meets with ACM-W student leaders annually to ensure they have the financial and faculty support from the department they need. We measure ACM-W events' budget and student/faculty participation rate (new; Boerkoel, Greene, Schofield).

A4b: [Diversity-focused Affinity Groups (G4)]: Recruit and support students to establish new student-led, departmentally sponsored diversity-focused computing affinity groups by 2023. We will track both the number and participation among groups. (new; Boerkoel, Talvitie)

A4c: [Support Institutional Diversity (G4)]: HMC's Office of Institutional Diversity supports a robust set of affinity groups. The department chair or associate chair meets with the leaders of these student organizations on an annual basis to discuss how the department could better support members of their community. CS Faculty also participate in student-group activities (ongoing; Boerkoel, Talvitie)

A5a. [Tracking Student Outcomes (G5)]: The department has an ongoing, in-depth look at the correlation between students' affective characteristics (e.g., reported confidence entering the course) and performance in one of its critical introductory CS courses--CS 70: Data Structures and Program Development. Moving forward, we aim to analyze these data disaggregated by demographics (ongoing; Bang, Breedon, Stone, Palucki-Blake).

A5b: [Demographic Dashboard (G5)]: By summer 2023, publish a dashboard of available CS department outcomes to identify areas that need attention/intervention. Key outcomes that will be tracked include enrollment in CS majors, performance in CS major, retention in CS major, and graduation outcomes disaggregated by demographics. (ongoing; Boerkoel, Talvitie, Palucki-Blake).