MOMENTUM AT UCLA

At *Momentum*, we employ mixed-methods approaches to conduct cutting-edge research on efforts to diversify computing and technology fields. We are particularly interested in efforts to recruit women and people of color into computing education pathways and retain them into technology fields. We are social scientists with a pragmatic lens to our work. As such, we collaborate with other key players working on these issues to generate knowledge that informs policy and practice.

Key Lessons to Inform LEVEL UP From the *Momentum* Research Team at UCLA

1 CHANGE TAKES TIME!

Most of the institutions involved in the BRAID initiative made progress toward diversifying their undergraduate computing majors, but it did not happen overnight. It is helpful to think about a change *process*. From interviewing department chairs involved in BRAID, we learned that increasing awareness of diversity issues drove momentum around broadening participation efforts. Relatedly, it is important to track progress in a variety of ways, including demographics of students enrolling and earning degrees in computing, as well as other indicators, such as those related to departmental climate. Learn more here.

2 HELP STUDENTS SEE THEMSELVES AS COMPUTER SCIENTISTS.

Students' beliefs about computing and their place in it are central to recruiting students to computing and retaining them in the field. Students' computing identity, sense of belonging, and/or computing self-efficacy are consistent predictors of key outcomes such as recruiting undecided majors to computing, persistence in computing majors, and aspirations for computing careers and graduate degrees. Learn more here.

3 CARE ABOUT NON-MAJORS.

Approximately half of students enrolled in intro CS courses are non-majors; the group of non-majors is likely to be more gender diverse than the group of computing majors in your courses. As such, intro courses can be a pivotal space to recruit students to a computing major or minor or even a future career in computing. Learn more here.

4 USE UNDERGRADUATE COMPUTING COURSES TO PROMOTE AWARENESS OF THE COMPUTING FIELD.

As we know, many students come to undergraduate computing courses with significant programming experience, but they may have limited knowledge about the computing field itself. It is important to help students become more aware of careers and graduate programs in computing. Learn more here.

5 HELP FACULTY CONNECT THEIR TEACHING PRACTICES TO BPC WORK.

CS instructors hold varying views about their role with respect to student learning; these orientations inform the teaching practices that instructors employ (e.g., those who hold more individualistic views of student learning tend to lecture frequently). Further, CS instructors may not connect teaching practices directly to broadening participation efforts. Promote a developmental view of student learning in your departments and make explicit the relationship between teaching practices and diversity efforts. Learn more here.

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ACCELERATING EQUITY IN
COMPUTING AND TECHNOLOGY

6 TEACH STUDENTS HOW TO WORK TOGETHER.

Student-centered teaching practices call for a lot of collaborative learning, for good reason! But, the *quality* of these experiences varies. Negative experiences in the context of peer learning can cause harm; provide guidance to students around how to work together well. Learn more here.

7 MAKE IT YOUR PRACTICE TO THINK INTERSECTIONALLY.

The literature on broadening participation focuses heavily on the experiences of white women. Black, Latina, Indigenous, and Multiracial women, as well as women from other minoritized racial/ethnic groups, have unique experiences that are too often overlooked in BPC efforts. Learn more here.

8 DRAW FROM THE WEALTH OF DIVERSITY AND INCLUSION KNOWLEDGE ALREADY AVAILABLE ON YOUR CAMPUS.

Remember that there is a broad community of support for diversity, equity, and inclusion work beyond the boundaries of your departments and schools—tap into other offices on campus and reach out to partner with student affairs offices and identity centers on campus. They can bring their expertise (and sometimes even additional funding or other forms of support!) to help your departmental BPC efforts. This is particularly important with respect to navigating the sometimes competing imperatives of BPC efforts and booming enrollments; make sure folks working on both issues are collaborating and that those who work on enrollment management understand and support your BPC goals. Learn more here.

9 PROMOTE STUDENTS' NETWORKS OF SUPPORT.

Students' outcomes in computing are shaped by their networks, particularly their peers and families. These networks serve to promote and sustain their interest in computing, so helping students find and sustain networks is essential to their success. Learn more here.

10 DRAW ON EXISTING LITERATURE TO INFORM THE LEVEL UP AGENDA AND YOUR EVERYDAY PRACTICE.

Data-driven change is essential to making progress: there is a rich (and growing!) body of literature to inform your work. In this document, as well as in the resources list linked below (see QR code!), we have connected our advice directly to research from the *Momentum* team. Further, we developed the Undergraduate BPC Literature Database to make this even easier! Access peer-reviewed research that is narrowly focused on broadening participation in undergraduate computing on BPCnet.org.

SCAN QR CODE OR CLICK LINK FOR SELECTED
PAPERS TO INFORM LEVEL UP WORKING GROUPS.

momentum.gseis.ucla.edu

momentum@ucla.edu

https://tinyurl.com/MomentumLevelUP