

CAHSI Summit Round Table- Response to Pre-Summit Questions

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- What can help your institution better prepare students who enter the computing workforce?

CSUN is among the largest regional comprehensive universities in the nation with an enrollment of over 42,000 students. It is a Hispanic Serving Institution and the largest of the 23 campuses within the CSU system that serves over 400,000 students across California. LAUSD schools serve as the primary feeder system for our incoming students. With an enrollment that is 76% Hispanic and 80% low income, LAUSD has a disproportionate percentage of underrepresented and at-risk students. Many underrepresented and at-risk students fall through the cracks because of common obstacles (poverty, first generation, English not spoken at home). They lack role models especially for high paying professions and have few opportunities to learn about the business world. Classes are large, resources are limited and teacher professional development rarely addresses career exposure. We need career pathways that are designed to appeal especially to underrepresented, low-income and female students to build the next generation computing workforce. These need to be seamlessly integrated from K-14 through the University system with clear objectives and metrics for success.

Once the students are at CSUN they need support, advisement, and mentoring to promote academic success. Pedagogy plays a critical role and it is important to develop culturally sensitive pedagogical techniques to improve student retention and graduation rates in the computing disciplines.

- What type of programs or initiatives can be adopted or created to prepare a diverse workforce?

At CSUN we use multiple outreach and recruitment strategies to reach as many students as possible. At the high schools, information about careers in computing needs to be included in course advisement and registration; school and district websites; through social networking sites; and in career-focused clubs. Teachers and career center and college office staff need experience and background in activities that encourage careers in computing and help guide student choices. Parents need to be educated about potential benefits of the program via brochures, posters, announcements on Parent Portals and a link on each school's website, as well as PTSOs. Districts can also offer presentations at middle schools by student "ambassadors" and counseling staff to build excitement about pathway careers among younger students.

In addition, CSUN has plans to work with its partners to offer the following activities:

1. Speaker series & industry partner visits: CSUN faculty and industry partners will visit local schools to share their professional experiences, helping students connect their interests to careers in computing; students will also visit companies engaged in computing.
2. One-day college experience: A "college experience day" at CSUN for students in the local high schools will include a campus tour and chance to shadow a freshman class, giving them a firsthand experience of college life and a course in their potential major. It will include outreach activities specifically for female

and underrepresented students such as bringing mentors and role models from underrepresented groups.

3. Training and awareness workshops for teachers: Awareness workshops for teachers will enable them to encourage their students to enroll in the course sequences that emphasize computing. CSUN faculty will also train teachers to assist with program components and prepare them to encourage the students to consider career pathways in computing

4. Peer recruiters: Students who enroll in each cohort will be asked to help recruit their peers for future cohorts.

Industry-based projects that students create in the program will offer an additional recruitment opportunity to build curiosity, interest, and participation for younger students and parents. Sites will be encouraged to hold an expo, event or competition to showcase student learning to parents, younger students, community members and business partners. In addition to supporting the above activities, teachers, counselors, and administrators will share program information face to face by facilitating clubs, counseling, registration meetings/assemblies, and recommending students towards pathways of interest in the computing disciplines. Career centers and staff at each site will participate in pathway supporting activities and provide workshops and programs that can inform and guide student choices.

Additionally, having an overarching focus on innovation and entrepreneurship, will also be a huge motivation for the students to select career pathways in computing disciplines and will make them more aware about value that computing professionals create in their organizations through new products and processes.

Details about the [AIMS²](#) program at CSU Northridge (194 words)

URL of AIMS² program: <http://www.ecs.csun.edu/aims2>

Program Director: S. K. Ramesh, Ph.D.,

Students in the cohorts have access to special mentoring and advisement by faculty, tutoring and peer mentoring, social activities, field trips and opportunities to take part in undergraduate research projects. Students in the cohorts recorded higher per-term units completed, per-term and cumulative GPAs, and next-term persistence rates compared to their non-participant student counterparts. Other programs in the college include the Teaching to Increase Diversity in STEM initiative (or [TIDES](#)), funded by the Helmsley Trust under the auspices of the Association of American Colleges & Universities, and the [California Career Pathways Trust](#) grant to introduce K-14 students to high wage, high growth career fields. CSUN has a strong institutional commitment to increasing participation of Underrepresented Minorities (URM) in STEM serving as the site of the CSU's system-wide program leadership for the first two phases of Louis Stokes Alliance for Minority Participation (LSAMP). Also, in 1968, well before the advent of LSAMP, Dr. Ray Landis, a CSUN Engineering faculty member at that time, established the [Minority Engineering Program](#) model at CSUN, a model that eventually spread nationwide.