# University of California innovations are transforming education delivery and improving student outcomes

The University of California is committed to (1) providing the very highest quality of education as efficiently as possible and (2) ensuring that more of our students complete their degrees in less time, thereby reducing costs for them as well as the state and enabling them to enter the work force earlier. To accomplish these goals, we are rethinking delivery models, managing enrollment and leveraging technology to promote student success. As the chart below shows, UC has increased four-year graduation rates by more than ten percentage points in the past decade.

UC Freshman Graduation Rates
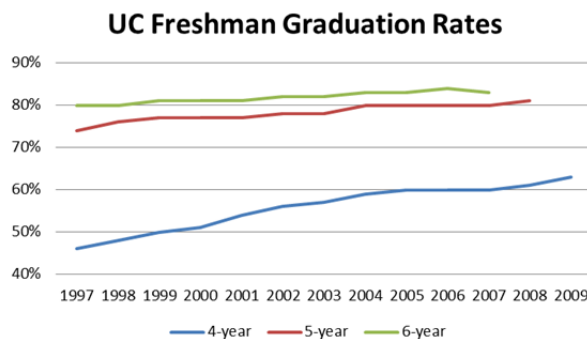
Curricular reform

UC's academic departments regularly review the undergraduate curriculum to identify outdated requirements and streamline requirements while maintaining academic rigor. As an example, UCLA's "Challenge 45" program set a target of no more than 45 required upper-division units for each of its majors. Approximately 50 majors revised their curriculum to meet this challenge, resulting in fewer required units and faster time to degree.

On-line instruction for early assessment, course placement and tutoring

Accurate placement of students in courses at the right levels increases efficiency by reducing unnecessary units, as well as the need to re-take courses for which students may have been under-prepared. Several UC campuses have adopted sophisticated web-based assessment systems that use artificial intelligence and adaptive technology to quickly and accurately determine exactly what students know and don't know in fundamental introductory science and math courses. These systems, which operate around the clock from any computer with web access, then provide one-on-one instruction on the topics students are most ready to learn and ensure that topics learned are also retained.

Predictive analytics

"Predictive analytics" is a cutting-edge approach that leverages all of the data campuses already have about their students to predict with high levels of accuracy which are most likely to encounter academic difficulty. Campuses can then intervene in a timely manner to provide advising, tutoring, peer support, and other programs that increase the likelihood students will succeed. UC Irvine launched a predictive modeling platform that reviews university data to provide faculty, advisors, and other administrators with data-driven information about their undergraduates. Other campuses will likely follow, building on insights gained in the Irvine pilot.

Expanding access to impacted courses

Difficulties in enrolling in required entry-level courses can slow students' progress through the lower-division curriculum and affect performance in upper-level courses that require those key skills taught in introductory courses, negatively impacting time-to-degree. As part of its commitment to undergraduate education, UC Berkeley directed $16.4 million in nonresident tuition revenue to expand offerings of high-demand entry level courses that are critical to timely

graduation. In the first four years of the Common Good Curriculum initiative, Berkeley added 350 course sections in math, science, reading and composition, and foreign language; 900 math & science lab/discussion sections; and a total of over 33,400 course enrollments.

Summer enrollment

UC research shows that many students finish the spring term of their fourth year just a few units short of graduation. Additional enrollment opportunities for one or two courses during the summer can help these students graduate without having to enroll for a fifth year— saving them the expense of a full additional term and making room for more new students in the fall. Similarly, providing course access during the summer before a student enters— particularly for critical introductory courses—can help students stay on track to timely completion.

Over the last decade, UC has aggressively encouraged students to enroll in summer coursework—providing financial incentives and even free courses in some cases. As a result, summer enrollment has increased by nearly 25% over the past decade with 77,000 UC students attending in 2014, the equivalent of 16,000 annual full-time student enrollments.

Many students use summer to finish coursework for graduation. Systemwide, freshman four-year graduation rates increased by nine percentage points in the summer following the fourth year, and at some campuses the "bump" associated with summer enrollment is as high as 12 percentage points. Results can be even more impressive for transfer students: at UC Santa Barbara, two-year graduation rates climbed by 17 points when summer enrollments immediately after the second year are added; at UC Irvine and UCLA, the transfer summer "bumps" are 16 and 14 points, respectively.

Unfortunately the Federal government no longer provides Pell grant funding for summer enrollment and, because a large number of UC students rely on Pell grants, it may be a challenge to further increase summer enrollments.

Online education

All ten UC campuses offer online learning opportunities for undergraduates, graduates, and professional degree programs. Online classes and online components increase access to courses students want and need to graduate and strengthen instruction.
Through fall 2013, UC offered more than 2,600 online courses totaling more than

90,000 student enrollments. The majority of these courses and enrollments were UC Extension programs. UC recently launched a cross-campus enrollment system, allowing UC students to easily search for and enroll in online courses offered at any general campus across the UC system. UC offers 7 online Master's degree programs.

During the 2014-15 academic year, UC will develop and offer more than 60 high-demand, high-quality online undergraduate courses that utilize the knowledge and expertise of UC faculty and instructors. All of these will leverage technology in innovative ways to provide quality learning opportunities for UC students to engage with content, faculty, and each other.

Three-year medical degrees

In June 2014, the UC Davis School of Medicine started a new three-year pathway for students committed to primary care careers. Rather than the classic four-year pathway to primary care practice, students will enter primary care practice one year earlier and spend one less year in medical school.

**Systemwide conference on
undergraduate completions**

In January 2015, faculty, advisors and
administrators from the University's nine
undergraduate campuses and the Office
of the President convened to share key
research findings, programs and
initiatives that support timely graduation,
particularly for underrepresented
minorities and Pell Grant recipients.

The discussions covered predictive
analytics and early assessment tools,
strategies and programs to improve first-
year retention, academic pathways and
timely progress to degree, leveraging
summer, and improving a sense of
belonging for undergraduates.

Campus and systemwide
representatives have identified key
takeaways they will implement in the
coming year, such as predictive
analytics, evaluation of major
coursework (particularly in STEM),
expanded use of summer, and student
support programs. This conference is
just one part of UC's efforts to
continually examine and improve the
efficiency of our educational programs
as well as the success of our students.