



I N S I G H T

Lessons learned from the Concurrent Courses initiative

## Broadening the Benefits of Dual Enrollment

*Reaching Underachieving and Underrepresented  
Students with Career-Focused Programs*

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## Foreword

In 2008, The James Irvine Foundation launched the Concurrent Courses initiative to make dual enrollment programs — which allow high school students to take college courses and earn college credit — available to low-income youth who struggle academically or who are from populations historically underrepresented in higher education. This work advances our Youth program goal of increasing the number of low-income youth in California who complete high school on time and attain a postsecondary credential by age 25.

When the initiative began, evidence already pointed to the benefits of dual enrollment for the high-achieving students normally exposed to these programs. In recent years, educators and policymakers have become increasingly interested in the potential of dual enrollment to improve educational outcomes for a broader range of students. At the same time, there is growing evidence that giving the programs a career focus adds relevance and interest and can re-engage students who may not envision themselves on a path to college and career. This aspect of the initiative reflects the core components of Linked Learning, Irvine’s approach to comprehensive high school reform.

In a time when the need for higher levels of education is rising, we are pleased to report good news: Evaluation of the Concurrent Courses initiative reveals that the participating students — those facing serious barriers to education and advancement — had better high school and college outcomes than comparison students.

This report documents findings that initiative participants were more likely when compared to similar students who did not participate to graduate from high school, enroll in a four-year college and persist in postsecondary education. They also accrued more college credits than comparison students and were less likely to enroll in basic skills courses in college. The report also offers lessons learned through the initiative, including recommendations for effective dual enrollment practice and for public policies that would expand adoption of this beneficial approach to educational achievement.

Our experience with the Concurrent Courses initiative significantly influenced the development of our recently launched expansion of Linked Learning into California community colleges. Given the promise of dual enrollment, we fully anticipate its integration as a key strategy in establishing career-themed pathways from secondary to postsecondary education and to improving and accelerating educational achievement for students.

We express our deep appreciation to everyone involved in the Concurrent Courses initiative. All offered inspiration and encouragement, which we share with you along with the findings in this report.



**Anne B. Stanton**  
Youth Program Director  
The James Irvine Foundation  
July 2012

## Summary

A three-year study tracking outcomes for thousands of students across California shows that career-focused dual enrollment programs can provide important benefits for those who are underachieving and underrepresented in higher education. Programs of this type, which allow high school students to take college courses and earn college credit, were once offered almost exclusively to high-achieving students seeking greater academic challenge.

The Concurrent Courses initiative was launched in 2008 and began to provide support to eight secondary-postsecondary partnerships in California to develop, enhance and expand dual enrollment programs with a career focus to engage students in relevant learning. Very soon after, new programs were providing structured early college experiences — college credit courses on the college or high school campus — to students who had not had them before. At the same time, existing programs expanded their offerings and were purposefully tailoring them to students underrepresented in higher education. In all, 10 colleges and 21 high schools participated in the initiative, which ultimately touched thousands of students. Among student participants, 60 percent were students of color and 40 percent came from non-English speaking homes.

The James Irvine Foundation funded the Concurrent Courses initiative to advance the goal of its Youth program: to increase the number of low-income youth in California who complete high school on time and attain a postsecondary credential by age 25.

### ABOUT THE CONCURRENT COURSES INITIATIVE

The Concurrent Courses initiative was created by The James Irvine Foundation in 2008 and concluded in 2011. Irvine invested \$4.75 million to demonstrate, over the course of three years, the feasibility of using dual enrollment programs to enhance college and career pathways for low-income youth who are struggling academically or who are within populations historically underrepresented in higher education.

### Participating Dual Enrollment Program Sites

**Arthur A. Benjamin Health Professions High School**, Sacramento, in partnership with Sacramento City College

**City College of San Francisco**, San Francisco, in partnership with San Francisco Unified School District

**Long Beach Unified School District**, Long Beach, in partnership with Long Beach City College and California State University Long Beach

**Los Angeles City College**, Los Angeles, in partnership with Hollywood Senior High School, Downtown Business Magnets High School and Miguel Contreras Learning Complex

**North Orange County Regional Occupational Program**, Anaheim, in partnership with Anaheim Union High School District, Cypress College and Fullerton College

**Santa Barbara City College**, Santa Barbara, in partnership with Santa Barbara High School District, Carpinteria High School District and South Coast Regional Occupational Program

**Shasta Union High School District**, Shasta, in partnership with Anderson Union High School District, Shasta College and Shasta-Trinity Regional Occupational Program

**Tulare Joint Union High School District**, Tulare, in partnership with College of the Sequoias

## Positive Outcomes for Participating Students

This report describes the initiative and its purpose, core program components and implementation. It also presents outcomes for the students involved. Overall, evaluation of the initiative finds that those who participated had better academic outcomes relative to comparison students in the same districts. Participants were, on average:

- More likely to graduate from high school
- More likely to transition to a four-year college (rather than a two-year college)
- Less likely to take basic skills courses in college
- More likely to persist in postsecondary education
- Accumulating more college credits than comparison students

## Policy Recommendations for Expanding on Success

These results are very encouraging. To foster even stronger outcomes for more students, policymakers and educators can build on the lessons learned from the Concurrent Courses initiative and reduce barriers to program development and student participation. Student participation and progress would be promoted through the following policy proposals:

- **Remove funding penalties:** To encourage dual enrollment, California should adopt a “hold harmless” funding model for dual enrollment, in which neither participating institution loses any of its per-pupil funding for dually-enrolled students. State policy should also require, rather than allow, colleges to waive student fees.
- **Make dual credit earning consistent and portable:** State policy should mandate that dual enrollment students automatically earn dual credit — both high school and college credit — for college courses they complete. In addition, a statewide system that facilitates the portability of college credits would ease student transfer and help ensure that students do not repeat courses they have already taken. This would benefit all California college students.
- **Standardize broad student eligibility:** At present, California policy sets no statewide academic eligibility criteria for dual enrollment participation but stipulates that participating colleges may do so. Following the standard of student eligibility for community colleges, the state should encourage broad access and prevent students from being disqualified by grades or test scores alone.

## Lessons for Dual Enrollment Practitioners

Programs in the initiative also varied, offering valuable lessons in their differences. Evaluators offer the following insights for educators and administrators considering or engaged in their own career-focused dual enrollment programs.

### Essentials for Program Success

- Programs require a strong connection and integration between high schools and postsecondary institutions.
- Embedding dual enrollment opportunities within career-focused small learning communities encourages student participation by giving coursework focus and relevance.
- A dual enrollment class should be perceived by students as an authentic college experience where they can “try on” the college student role and view themselves as capable of doing college work.

### Key Program Considerations

- **On college campuses**, students find a highly authentic experience and access to college support services. But because the cost and time needed for travel can make these arrangements difficult to manage for schools and students, some programs successfully locate dual enrollment classes at the high school.
  - **College instructors** teaching high school students for the first time often need help in understanding and connecting with them, while high school instructors teaching college courses may need to change their pedagogy to create an authentic collegiate environment.
  - **Appropriate course selection** is informed by program priorities and student needs. Student success classes, in which students develop study skills, establish career goals, and investigate colleges and majors give students tools for postsecondary success. Hands-on career-technical courses appeal to student interests and offer relevance to future employment.
  - **When dual enrollment students are mixed** in classes with regular college students, they are likely to display greater maturity and feel their college experience is authentic.
  - **The opportunity to receive credit for both high school and college** is a significant incentive for students to participate in dual enrollment programs, as doing so can save money and time. Additionally, high schools should obtain student consent to view college transcripts so they can play an active role supporting success.
  - **When held during the regular high school day**, access to dual enrollment courses is broadened as transportation challenges are reduced and conflicts with after-school obligations are eliminated.
- Additional details on these and other recommendations are provided in the conclusion of this report.

## CONCURRENT COURSES INITIATIVE SERIES

This initiative has generated a significant body of knowledge, including research results, program examples and recommendations for policymakers and practitioners who seek to apply the dual enrollment approach to improve educational outcomes, particularly for students who are struggling academically or who are from populations underrepresented in higher education.



### **Dual Enrollment Policies and Practices: Earning College Credit in California High Schools (2008)**

This 24-page report offers analysis of the dual enrollment environment in California at the outset of the Concurrent Courses initiative.



### **Different Approaches to Dual Enrollment: Understanding Program Features and Their Implications (2011)**

This 27-page report gathers insights from the distinctive approaches of the eight Concurrent Courses partnerships.



### **Broadening the Benefits of Dual Enrollment: Reaching Underachieving and Underrepresented Students with Career-Focused Programs (2012)**

This 49-page report presents comprehensive findings upon completion of the Concurrent Courses initiative, as well as detailed recommendations for policymakers and dual enrollment practitioners.



### **Dual Enrollment: Helping Make College a Reality for Students Less Likely to Go Recommendations for Policymakers from the Concurrent Courses initiative (2012)**

This two-page brief offers top-line outcomes of the Concurrent Courses initiative and recommendations for policies supportive of dual enrollment.



### **Dual Enrollment for All: Reasons and Ways to Make It Work**

Lessons for Educators and Administrators from the Concurrent Courses initiative (2012)

This two-page brief offers top-line outcomes of the Concurrent Courses initiative and considerations for practitioners of dual enrollment programs.



### **Bridging College and Careers: Using Dual Enrollment to Enhance Career and Technical Education Pathways (2012)**

This 52-page companion technical report offers detailed information on the research methodology and analysis of the Concurrent Courses initiative.



### **Bridging College and Careers: Technical Report Summary (2012)**

This four-page brief summarizes the Concurrent Courses initiative technical report.

These resources are available for download and sharing at [www.irvine.org](http://www.irvine.org) and [ccrc.tc.columbia.edu](http://ccrc.tc.columbia.edu).



## Introduction

### Why Career-Focused Dual Enrollment?

The nation is focused on college and career readiness, yet in California, and indeed in the rest of the United States, far too few students complete high school and transition successfully to postsecondary study. The report *Building a Grad Nation* names California as one of 10 states whose high school graduation rate declined from 2002 to 2009 (from 72.7 percent to 71 percent).<sup>1</sup> Even when students graduate from high school and enter college, postsecondary attrition without degree completion or transfer is alarmingly high, particularly in community colleges, which serve more low-income and racial minority students than do four-year postsecondary institutions. A 2010 study that tracked a large sample of California community college students found that, six years after enrolling, 70 percent of degree-seeking students (and 80 percent of Latino students) had neither completed a degree or certificate nor transferred; most of these students had dropped out rather than remaining enrolled.<sup>2</sup> Thus, the challenge is enormous, and it is clear that new approaches are in order to support our youth.

**A career focus can engage students through applied learning and help them envision pathways through college to future employment.**

The approach pursued by the Concurrent Courses initiative — dual enrollment within career-focused high school pathways — was developed with support from the research literature. There is a good foundation of evidence that high school career and technical education plays a strong role in reducing dropout rates and increasing high school graduation rates, and that “well-designed career-focused programs can improve employment, earnings, non-academic skills, and career choices, particularly for at-risk and low-income youth.”<sup>3</sup> A career focus can engage students through applied learning and help them envision pathways through college to future employment.

Policymakers and leaders in education reform, particularly in California, are turning to career and technical education as a powerful educational tool. The state has long encouraged and funded its Partnership Academies (called Career Academies in other states). The Linked Learning movement is promoting the combination of rigorous academics, career-technical education and real-world experiences, and applying this approach to high school reform in 10 school districts across California. Its College and Career Readiness Framework identifies and addresses the need for skills and knowledge in the academic and career domains, as well as for a range of other applied skills and behaviors.<sup>4</sup> Most recently, the state superintendent of public instruction unveiled a Career Readiness initiative comprising 17 key objectives in support of career and technical education (CTE). Among other aims, the initiative calls for an increase in the number of students in CTE courses.

While in the past, career and technical education has been viewed by some as leading students directly to the workforce, today it is widely acknowledged that all students need some preparation beyond high school, whether a short-term program at a technical or community college, or a bachelor's degree. What is of vital importance is helping students understand and explore their postsecondary options and take the steps necessary to enroll.<sup>5</sup> Past programs such as Tech Prep encouraged connections between high school and community college career-technical programs, and they offered some college credit-earning opportunities through articulation agreements. With research finding that few students have benefited from articulated credits,<sup>6</sup> institutions are increasingly turning to dual enrollment as a more promising alternative.

Dual enrollment allows high school students to enroll in college courses and receive college credit, often for free. While there are many explanations for patterns of college attrition, dual enrollment addresses two factors in particular: high school students' need to be academically prepared for additional study, and their need to become familiar and comfortable with the college environment. Nationally and in California, there is increasing recognition and concern about the extent to which incoming college students have weak academic skills, become mired in non-college-credit developmental coursework and never progress to college courses.<sup>7</sup> In addition, students also often lack a range of non-academic skills and behaviors needed to be successful in college-level coursework. Some students are presumed to drop out of college due to lack of involvement or integration in the college community,<sup>8</sup> or because they do not feel sufficiently supported or validated.<sup>9</sup>

Dual enrollment provides high school students with an early college experience that can help them improve their academic and nonacademic skills, help them understand what will be required of them in college, and encourage future college attendance by showing them that they are indeed capable of doing college work. The dual enrollment classroom can be an environment in which students “try on” the role of a college student.<sup>10</sup> If successful at this role rehearsal, they will learn what it is to be a college student and may even experience a positive shift in self-concept.

**Career-technical students who participated in dual enrollment showed higher rates of college enrollment, higher grade point averages, and greater credit accumulation than did similar career-technical students who did not take dual enrollment courses.**

Previous research has found dual enrollment participation to be correlated with a range of positive high school and college outcomes, including college enrollment and persistence.<sup>11</sup> In general, studies have found that earning college credits prior to high school graduation increases the likelihood of earning a college degree and reduces time to degree.<sup>12</sup> In addition, some of the prior research that found positive outcomes for dual enrollment participants focused in particular on career-technical students. Career-technical students who participated in dual enrollment showed higher rates of college enrollment, higher grade point averages, and greater credit accumulation than did similar career-technical students who did not take dual enrollment courses.<sup>13</sup>

In combination, rigorous career-technical education and dual enrollment have great potential to meet students' college and career readiness needs.

## Impetus for the Initiative

With strong theoretical and empirical support for career-focused dual enrollment as a promising college transition strategy, The James Irvine Foundation funded the Concurrent Courses initiative as a means of advancing its larger Youth program mission — to increase the number of low-income California young people who complete high school on time and attain a postsecondary credential by age 25. Eight secondary-postsecondary partnerships across California were selected and funded to participate in the Concurrent Courses initiative for three years. The partnerships were to provide rigorous, supportive and career-focused dual enrollment opportunities to low-income youth who were struggling academically or who were within populations historically underrepresented in higher education.

The goals were to improve high school outcomes, bring about smoother transitions to postsecondary education, and increase college-going and college persistence. Strengthened collaboration between secondary and postsecondary institutions was integral to providing dual enrollment and support services to students in rigorous career-technical pathways. The initiative was also to lead to greater awareness of dual enrollment policy and practice statewide.

**Strengthened collaboration between secondary and postsecondary institutions was integral to providing dual enrollment and support services to students in rigorous career-technical pathways.**

The Community College Research Center (CCRC) at Teachers College, Columbia University, was charged with overseeing, directing and evaluating the initiative. General oversight included fiscal and administrative management of the grants to the selected partnerships. Direction of the initiative included working with the sites to support high-quality program implementation true to the initiative's intent, as well as hiring and working with a team of technical assistance providers from the Oakland-based Career Ladders Project. The evaluation was a multipronged effort that included qualitative and quantitative components.

The sections that follow provide an overview of the initiative and the evaluation, as well as information about the students who participated and the courses and support services they received. Student outcomes are presented in detail. Also provided are examples of program strategies selected for their effectiveness and likely contribution to positive student outcomes, as well as their potential to offer further lessons from the field. The report concludes with comprehensive recommendations for state policy and institutional practice.

## The Concurrent Courses Initiative: Overview of the Initiative and the Study

The Concurrent Courses initiative was a multifaceted effort that included: strengthening and building eight diverse program partnerships, providing technical assistance to program sites, and conducting formative and outcomes evaluations. This section describes each of these aspects in more detail.

### Program Structure: Career-Focused Dual Enrollment and Supplemental Supports

In the spring of 2008, eight partnerships were awarded funds to do the following: 1) expand CTE-oriented dual enrollment participation to low-income and underrepresented students, promoting broad eligibility for college courses; 2) ensure rigor, authenticity and transferability of college courses; 3) integrate rigorous academics and career/technical subject matter, combining college preparatory academic with career/technical and applied learning; 4) create strong collaborative relationships among college and secondary partners; 5) provide supports to help students be successful in their college courses and college transitions; 6) create program sequences that span high school and college classes; and 7) collect data on students' secondary and postsecondary outcomes and participate in an evaluation.

Aside from these core program elements, no particular model of implementation was imposed or preferred. An earlier report by CCRC for The James Irvine Foundation identified a variety of programs across California through which students can earn college credit.<sup>14</sup> These include Tech Prep, Partnership Academies and Regional Occupational Programs (ROPs), as well as other dual enrollment opportunities developed as part of colleges' high school outreach efforts. In keeping with this diversity, the eight Concurrent Courses initiative partnerships implemented programs that differed on a variety of dimensions, including the type of entity that functions as the lead partner (college, school district, high school, or ROP), career focus, class location and time, instructor characteristics, course content, student mix and opportunities for earning credit. Table 1 describes the eight partnerships using four of these dimensions (see next page).

**The eight Concurrent Courses initiative partnerships implemented programs that differed on a variety of dimensions, including the type of entity that functions as the lead partner career focus, class location and time, instructor characteristics, course content, student mix and opportunities for earning credit.**

The programs also varied in their experience with dual enrollment. Two grantees (in San Francisco and Santa Barbara) had existing career-focused dual enrollment programs and aimed to broaden access and provide needed student supports. Five (in Long Beach, Los Angeles, North Orange County, Sacramento and Tulare) existed already as high school CTE pathways but lacked structured college components. The eighth site (Shasta) was allowed a planning year to develop an entirely new renewable energy program with a course sequence spanning high school and college.

TABLE 1. PARTNERSHIP OVERVIEW

	LEAD PARTNER	CAREER FOCUS	COURSE OPTIONS	CREDIT EARNING
Sacramento	High School	Health	Academic/CTE	Dual credit
San Francisco	College	Multiple	Academic/CTE	Dual credit
Long Beach	High School	Architecture, Construction & Engineering	Academic/CTE	College credit
Los Angeles	College	Multimedia	CTE	Dual credit
North Orange County	ROP	Teaching	Academic/CTE	College credit
Santa Barbara	College	Multiple	CTE	Dual credit
Shasta	High School District	Technology	CTE	Dual credit
Tulare	High School District	Nursing & Other Health Careers	Academic/CTE	Dual credit

Thus, while some sites made substantial improvements to existing dual enrollment practices, others implemented dual enrollment collaborations and classes for the first time. This meant that the programs varied substantially in size, with the new programs starting out quite small.

Given that the Concurrent Courses initiative was meant to prepare struggling and underrepresented students for college, student supports to foster success in college-level coursework and to build capacity for college matriculation and persistence were an integral component. Different types of supports were offered according to the individual sites' determination of student needs, as well as program priorities. Generally, the activities addressed academic skills, academic behaviors, and college and career exploration. Student supports are discussed in greater detail in the next section.

Brief summaries of the partnerships, providing information on each site's goals, students served, and courses and services offered, are provided in Appendix A.

### Technical Assistance

Technical assistance to the sites included individualized support that responded to specific needs or challenges, as well as cross-initiative projects and events that helped to develop a learning community among the participants. The Career Ladders Project (CLP), a nonprofit organization that works to provide education and career advancement for Californians, delivered this technical assistance to the partnerships from the spring of 2009 to the end of 2010. CLP staff provided some assistance and coaching based on the particular needs of the sites, such as providing feedback about student recruitment and orientation activities; helping to improve communication among secondary and postsecondary partners; and use of the CLP staff's wide network of contacts to help secure student internship placements and other resources. CLP also hosted monthly calls with all site coordinators to share and address common issues and challenges.

In response to concerns about student attrition in dual enrollment courses, CLP developed a collaborative action research project among a selection of secondary and postsecondary participants, including instructors as well as site leads and some counselors, who worked together to improve instructional practices in dual enrollment courses and student supports. The collaborative action research project helped individual sites pilot and reflect on strategies to improve student persistence and also generated lessons on dual enrollment pedagogical strategies overall.<sup>15</sup>

To create and deepen a community of practice among the partners, representatives from each partnership were brought together three times over the course of the initiative. At these convenings they exchanged information on different dual enrollment models and strategies; reviewed the aims of the initiative as well as the desired end results; reflected on and shared accomplishments and challenges with colleagues; synthesized insights regarding working with students; and shared strategies for building capacity to continue the work. In addition, partnerships were provided with valuable team time to think through how they could use the information presented to strengthen their existing efforts and sustain the work going forward.

## The Research

Evaluation of the Concurrent Courses initiative included both formative and outcomes aspects. The formative evaluation sought to ensure that the partnerships' implementation efforts aligned with the goals of the initiative, and it provided them with useful information for continuous program improvement. The outcomes evaluation tracked the first and second cohorts of participating students and analyzed their high school and early college outcomes, compared with outcomes for other, similar students.

The research drew on three types of data:

1. Qualitative data, collected during partnerships site visits, describing program implementation and the strategies used both to create dual enrollment pathways and to recruit and support the targeted population of students
2. Surveys of participating students in fall 2008, spring 2009 and spring 2010
3. District and institutional administrative data to analyze participating student demographics, participation in Concurrent Courses initiative support services and dual enrollment courses, and student outcomes (see Appendix B: Data Sources)

All sites participated in the California Partnership for Achieving Student Success (Cal-PASS), a statewide data system that anonymously tracks students' educational progress over time and across institutions. This dataset allowed the research team to measure student outcomes longitudinally. Given the timeframe of the initiative and the outcomes of interest, researchers followed and measured outcomes for the first and second years' student participants — those who were graduating high school seniors in 2009 and 2010. These results, pooled across sites and across years, are presented in the Student Outcomes section on page 19.

## The Initiative on the Ground

### Student Recruitment and Participation in Dual Enrollment

The Concurrent Courses initiative aimed to provide career-focused dual enrollment opportunities to high school students who might most benefit from such experiences — low-income youth, students whose families had little or no college background, and those from populations historically underrepresented in higher education. The initiative also sought to include young people who were struggling academically, offering participation as a means of improving skills in this group.

Partnerships approached student outreach in multiple ways, depending on the local context and partnership configuration. In two of the pre-existing partnerships, San Francisco and Santa Barbara, recruiting the students of interest meant that the colleges had to become much more involved in outreach and recruitment than previously. Both colleges made new efforts to focus on feeder high schools with concentrations of disadvantaged students. City College of Santa Barbara created new recruitment materials — a brochure and a DVD — in Spanish. In addition, Santa Barbara implemented a one-credit dual enrollment career choices course for ninth-graders as an introduction to the career paths available and to college coursework. In other sites, such as those in North Orange County and Tulare, the student population of the participating high schools and career pathways already included the target students.

Table 2 provides demographic information about the participating students. Across all sites and during the first two years of the initiative, nearly 60 percent of students were Hispanic, Black or Asian; about 40 percent came from households where English is not the primary language, and about a third would be first in their family to attend college.

In a fall 2008 survey, students were asked to identify their main reason for choosing to participate. More than half of the respondents replied that their main reason for enrolling was that they were interested in the subject, underscoring the motivational power of career/technical education. Small percentages said they were participating because they wanted free college credit or

**TABLE 2. CHARACTERISTICS OF CONCURRENT COURSES INITIATIVE DUAL ENROLLEES, POOLED ACROSS SITES**

	2008–2009	2009–2010
Male	54%	55%
Hispanic	40%	45%
Black	5%	3%
White	39%	37%
Asian	15%	11%
Primary Language is English	60%	58%
<b>PARENTAL EDUCATION</b>		
High school graduate or below	32%	32%
Some college or above	46%	52%
Refused/missing	23%	16%
<i>Observations</i>	1,489	1,849

Note: Not all dual enrollees have background data available.



because a teacher or counselor had encouraged them to do so. In focus groups, student participants said they wanted to get a head start on college. One said, “I took it to get college experience. Now I feel I’m not going to freak out in college.”

Table 3 shows that 1,547 students enrolled in college courses in the first year of the Concurrent Courses initiative, and 1,878 enrolled in the following year (this includes some overlap of the students from year one to year two). Most, but not quite all, received some type of program support service. Table 4 provides the number of students participating by site, and the change in participation from the first to the second year of the initiative.

There is considerable variation in how the Concurrent Courses initiative was implemented across the sites. This variation includes the scale of the program (ranging from 95 students in dual enrollment in Los Angeles to 1,277 in Santa Barbara); the average number of courses students enrolled in per year; the location of the courses and type of instructor; and the distribution of supplemental activities, with each site offering a unique set of eight activities.

Most of the startup and smaller programs significantly increased the number of students in dual enrollment and support services from the first to the second year of implementation. The exception is Sacramento, where recruiting students into this partnership’s challenging high school campus-based college biology class was difficult, and where high school students had a hard time finding seats in the crowded college campus. For the 2010-11 school year, however, the school reported that 68 students participated in dual enrollment, an increase over the previous year. Over the 2009-10 school year, students took 1.34 college courses on average across the initiative. In most of the sites, students tended to take just one course, with students taking more in the Los Angeles, Long Beach and Shasta sites (not shown).

Where and by whom dual enrollment courses are taught can influence students’ participation and experiences.<sup>16</sup> The Concurrent Courses initiative partnerships considered their own local contexts and students of focus in developing their program models. Figures 1 and 2 show that most of the students participating in the initiative were taking their college courses on the high school campus and were taught by college instructors. These figures represent the second year of implementation, when

**TABLE 3. NUMBER OF CONCURRENT COURSES INITIATIVE DUAL ENROLLEES SERVED, POOLED ACROSS SITES**

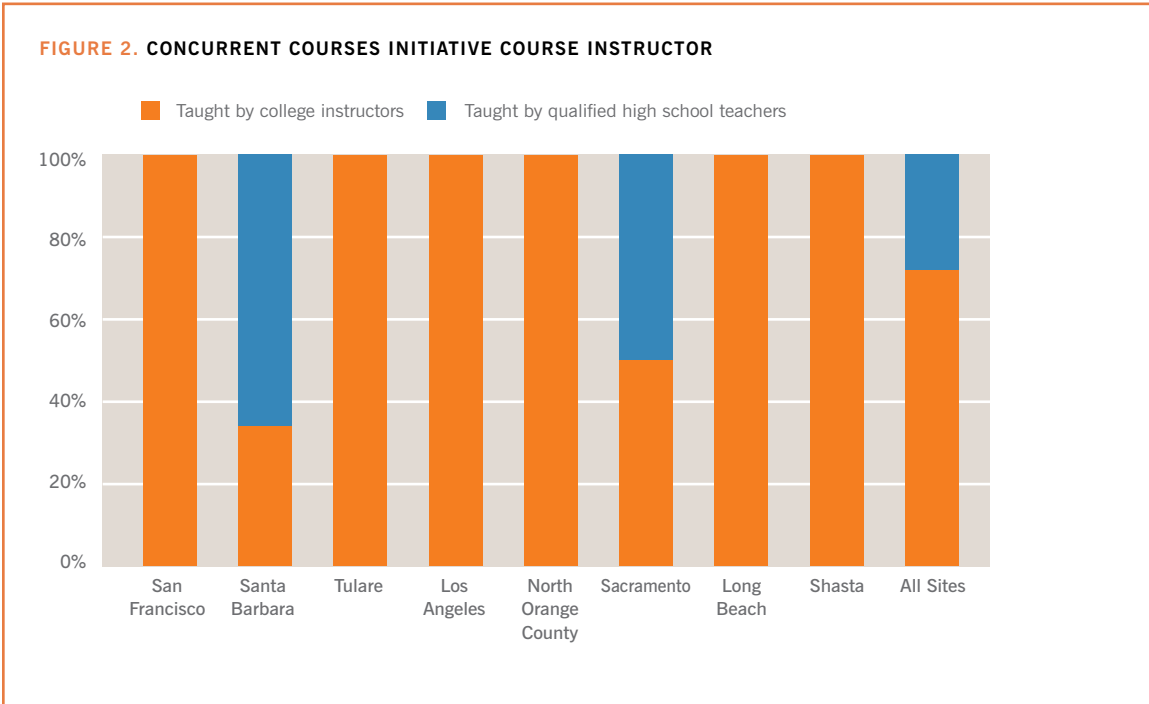
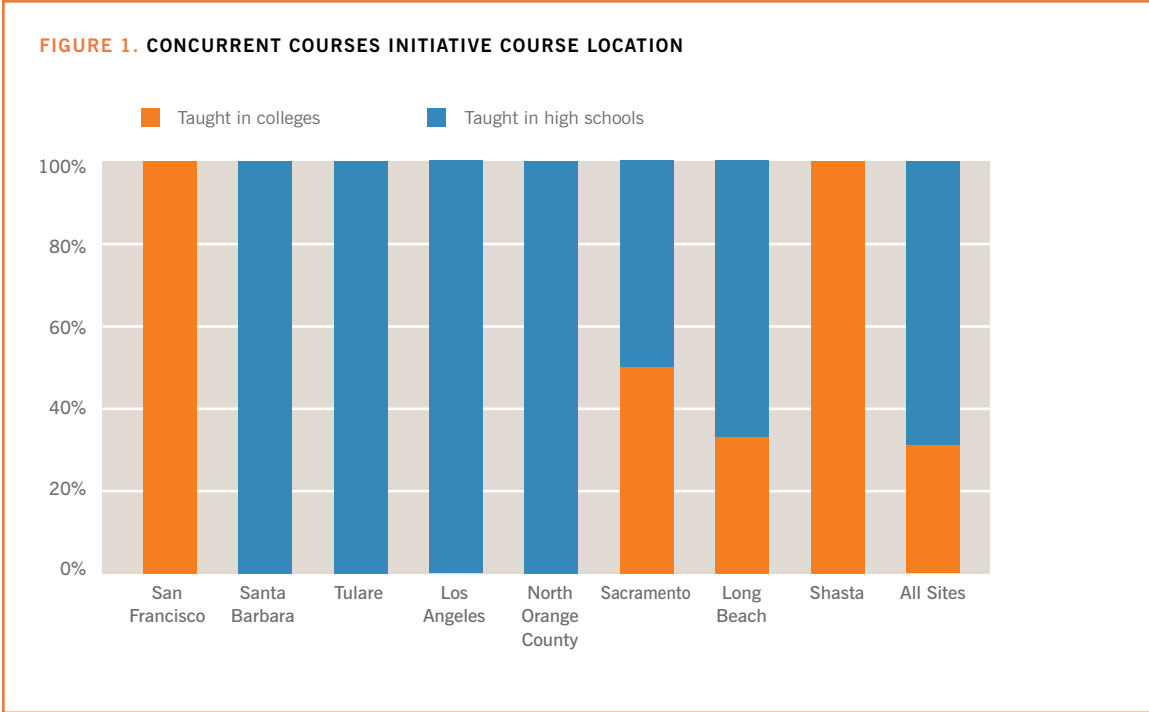
	2008–2009	2009–2010
Total dual enrollees	1,594	1,885
Dual enrollees with supports	1,547	1,878

**TABLE 4. CONCURRENT COURSES INITIATIVE PARTICIPATION IN DUAL ENROLLMENT AND SUPPORT SERVICES BY SITE**

	2008	2009	PERCENT OF CHANGE
San Francisco	168	209	24%
Santa Barbara	1,141	1,277	12%
Tulare	32	54	69%
Los Angeles	71	95	34%
North Orange County	43	83	93%
Sacramento	92	56	-39%
Long Beach	0	44	-
Shasta	0	60	-



all sites were offering dual enrollment. For the six sites that offered dual enrollment during both years, course location and instructor type did not differ significantly from one year to the next. The other two sites, Long Beach and Shasta, offered dual enrollment for the first time in 2009-10.



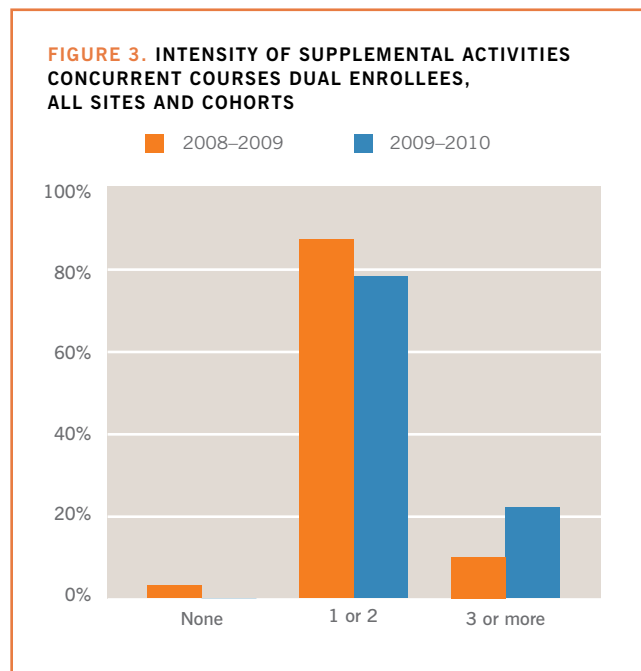
## The Importance of Student Supports

Given that the Concurrent Courses initiative aimed to encourage college enrollment and achievement among students who were underprepared, offering a broad range of support services was essential. Early on, partnerships understood that academic supports would be necessary to ensure that students succeeded in their college courses. In addition, it was understood that non-academic supports would be valuable in encouraging students and informing them about college opportunities. A recent review of the literature on non-academic supports suggests that helping students to clarify their college aspirations, strengthen their commitment to college and develop college know-how may improve their educational outcomes.<sup>17</sup>

Over the first two years of the Concurrent Courses initiative, nearly all dual enrollees received some form of supplemental support — across sites, 98 percent received at least one supplemental support. Figure 3 shows that over time, the percent of dual enrollees receiving three or more services — indicating the intensity of support they were receiving — rose from 10 percent in the first year to 22 percent in the second year.

To address students' academic skills, the partnerships attempted a range of services, such as individualized tutoring and administering college assessments to diagnose areas of need. However, it was challenging for most of the sites to organize and offer these services so that students took advantage of them. For example, while all the partnerships had funds to be used for tutoring, many found it challenging to identify and recruit experienced and effective tutors, and to schedule tutoring in places and times most convenient to students. Offerings evolved through trial and error. The Long Beach partnership found success in implementing a required two-hour tutoring lab directly after the college course. The students were bused to and from the college campus, and their bus did not return to their high school until after the supplemental course hours.

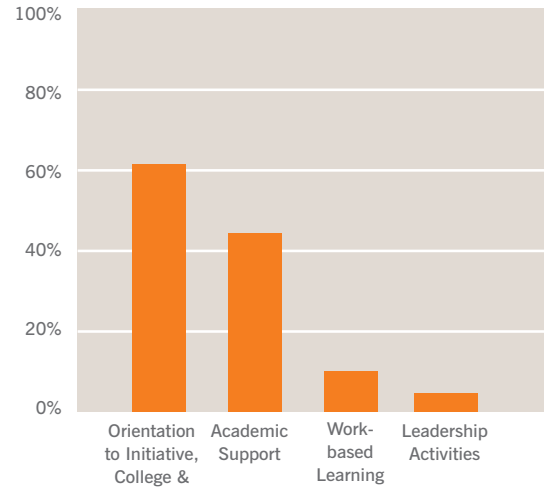
In terms of non-academic supports, college and career orientation activities were the most commonly provided. These included a range of exposure activities to help students understand the expectations of college and the behaviors and habits that would contribute to their success, as well as to help them navigate the college environment. For example, City College of San Francisco implemented a day-long orientation at the beginning of each semester for all incoming dual enrollment students, providing general information on the college and its career technical programs, as well as individual counseling. Students also received one-half of a college credit for attending.



As shown in Figure 4, across both cohorts and all sites, 61 percent of students received some type of college and orientation services, including campus tours. There was significant growth in these types of activities from the first year of the initiative to the second, so that by the second year almost all students received such services (not shown). Other experiences such as work-based learning and student leadership activities were less common but emphasized by some partnerships, including those in Los Angeles and Tulare.

In sum, the program models partnerships pursued varied greatly. From the first to the second year of implementation, partnerships, for the most part, increased the number of students participating in dual enrollment and in support services. In addition, the intensity of support services received increased over time. That this occurred as the California economic crisis worsened can be attributed to the presence of the Irvine grant funds and to the other, non-financial forms of assistance the sites were receiving. Indeed, all the partnerships were showing success in strengthening the core elements of their programs.

**FIGURE 4. PARTICIPATION IN SUPPLEMENTAL ACTIVITIES CONCURRENT COURSES DUAL ENROLLEES, ALL SITES AND COHORTS**



## Student Outcomes

This section provides results from the quantitative evaluation of the Concurrent Courses initiative. It examines the influence of dual enrollment on academic outcomes for the first and second cohorts of students both separately and pooled together. High school outcomes addressed include student performance in dual enrollment courses, grade point average and graduation. Postsecondary outcomes of interest include college enrollment for the senior classes of 2009 and 2010, as well as college performance for those who matriculated. Specific college performance outcomes examined in this section include grade point average, basic skills course-taking, persistence through the first and second year of college, and accrual of college credit. These findings provide early evidence on the potential effects of the Concurrent Courses initiative on college success.

The first outcome, performance in a Concurrent Courses dual enrollment course, is reported for dual enrollees using Cal-PASS college course data. For all other outcomes, Concurrent Courses students are compared with all other students within the same school districts who did not take a Concurrent Courses dual enrollment course.<sup>18</sup> High school grade point average and high school graduation as well as college enrollment and performance are examined using both regression analysis and propensity score matching techniques. In the regression analysis, to identify the apparent effect of Concurrent Courses dual enrollment, evaluators controlled for student characteristics such as race/ethnicity, gender, family background and ability as measured by prior test scores. They also used propensity score matching to help address the problem of relying on very different treatment and control groups to estimate program effects.<sup>19</sup>

### RESEARCH NOTE: POOLING ACROSS SITES AND YEARS

One important consideration is whether the datasets can be pooled, either across sites or years. In intent, the goals of the initiative were consistent across sites and years. However, the eight sites are in different localities, with different school-college links and student demographics, and sites had flexibility in how they implemented Concurrent Courses. Across two years of study, there were some changes in how the sites operated; at two sites, there were no dual enrollment students in the first year.

Overall, the descriptive frequencies suggest that pooling the sample across the two years is appropriate. Within each site, the programs appear to have been implemented in a similar way in terms of dual enrollment course provision, but in a more mixed way in terms of supplemental activities. Pooling may be justified because the main intervention was dual enrollment within a career-focused program of study. Moreover, there is evidence of stability in terms of student characteristics (gender and race) and family background as well as consistency in the negative and positive selection biases. Finally, it is not necessarily the case that pooling will bias the results for sites with higher proportions of students who participated in both years; these students did receive a more intensive program, but primarily because they participated in more supplemental activities.

As pooling has the advantage of identifying an overall apparent effect of the Concurrent Courses initiative and of yielding more precise estimates through larger sample sizes, our approach is to report findings pooled by year and overall.

For more information on research methodology and analysis, see the companion technical report, *Bridging College and Career*.

Based on an examination of descriptive statistics of family background and test scores in the first two years of Concurrent Courses, there was both negative and positive selection of students into the programs: negative selection because Concurrent Courses participants — the general pool of students in the career-technical programs who were targeted for dual enrollment — were less advantaged than the average student in the district; and positive selection because those who did enroll in Concurrent Courses college courses were more advantaged than the broader pool of students. The propensity score model thus matches Concurrent Courses dual enrollees with “observably equivalent” district students using student background, achievement and school-level characteristics. This method then compares the outcomes of the Concurrent Courses dual enrollees with the matched control group.

**TABLE 5. STUDENT PERFORMANCE IN CONCURRENT COURSES INITIATIVE (CCI), ALL SITES COMBINED**

GRADE IN CCI COURSE	ALL CCI DUAL ENROLLEES	
	2008–2009	2009–2010
A	38%	39%
B	23%	21%
C, D or pass	26%	26%
F	3%	5%
W	2%	2%
Other*	7%	7%
Credits attempted	2.56	4.83
Credits passed	2.43	4.51
Number of courses	2,099	2,743
Number of students	1,131	1,515

Note: CCI course performance data are not available for all students.

\* “Other” refers to courses that were recorded as “Ungraded” or “Incomplete.”

### Performance in Dual Enrollment Courses

The vast majority of participating students passed their dual enrollment courses, with the majority earning As or Bs in both years. Furthermore, the number of college credits that Concurrent Courses dual enrollees accumulated grew significantly across the two years (see Table 5). On average, Concurrent Courses dual enrollees nearly doubled their accumulated credits from year one to year two, going from 2.43 to 4.51.

Performance in dual enrollment was considered by method of course delivery — high school versus college campus location, and certified high school teacher versus college instructor (not shown). Dual enrollment course completion rates are high in both settings, but the rate for courses offered on the college campus is slightly higher than for those in high schools. However, only one site (San Francisco) delivered its courses primarily in a college setting, so this may be a site-specific effect. There is no clear pattern of completion rates relative to whether the course is taught by a high school or college instructor.

### Influence on High School Grade Point Average

There are several reasons to expect that dual enrollment might affect students’ final high school grade point average. For instance, students may enjoy high school more, they may learn content or academic strategies in their college courses that support their learning in their high school courses, or they may become more motivated as their expectations of attending college increase.

The effect of Concurrent Courses participation on grade point average was studied using data pooled across sites for the 2008-09 and 2009-10 academic years. Controlling for student characteristics and prior standardized test scores, the grade point averages of dual enrollees who participated during the 2008-09 academic year are significantly higher than those of their district peers. These positive findings do not hold, however, when using a propensity score matching technique. For those who participated during the 2009-10 academic year, both methods find that the grade point averages of dual enrollees are not significantly different from their district peers. This evaluation finds, therefore, that there is likely no effect of Concurrent Courses on participating students' grade point averages.

### **Influence on High School Graduation**

Similar to the rationale for effects on grade point average, participation in dual enrollment might motivate students to complete high school as they gain a desire to further their education and confidence to do so. Information describing the relationship between dual enrollment and the probability of graduating from high school is available only from six sites for the class of 2009 and for seven sites in the class of 2010. For the remaining sites, no 12th-graders were yet involved in dual enrollment (although students in earlier grades were).

Results from regression analysis show that graduation rates were higher for dual enrollees than their peers within the districts, and this relationship holds even after controlling for prior test scores. Using propensity score matching, the average effect of dual enrollment on graduation remains positive and significant for both graduating classes, separately and pooled.

### **Understanding College-Level Outcomes**

One of the primary goals of the Concurrent Courses initiative is to improve educational outcomes for students and specifically to enhance their opportunities for college success. It is possible to examine performance in students' first and second years in college (2009-10 and in 2010-11) compared with their district peers for a subset of Concurrent Courses dual enrollees who were in 12th grade during 2008-09. Five sites had such students. For the 2009-10 cohort it is possible to look at performance during their first year of college only (2010-11). Seven sites had such students. In the discussion that follows, these students are referred to as the graduating classes of 2009 and 2010, respectively.

For these graduating classes, available data describe whether they enrolled in college, the types of courses they took, and other measures indicating how they fared in college. Thus, it is possible to see whether Concurrent Courses dual enrollment participation influenced college choices and whether it influenced subsequent performance in college. As with the high school graduation outcome, the comparison group consists of all students from the classes of 2009 and 2010 from the relevant districts.

It is important to note that data are not available if a student enrolled in a college that is not within the Cal-PASS system; the Cal-PASS dataset includes all public two-year colleges in California, but only between half and two-thirds of the public four-year institutions. And the dataset does not include private postsecondary institutions. Data are also missing if the student enters the labor market directly or leaves the state. This can potentially lead to something called “censoring.” Where Concurrent Courses is effective it will lead more students to attend college than otherwise would, but it may also push some students out of Cal-PASS colleges and into more selective, private institutions. In cases like these, referred to as “above” censoring, the dataset would not reveal a positive effect on college enrollment. Conversely, the evaluation of Concurrent Courses might bring about “below” censoring, in which participation in the initiative leads students who would have enrolled at a four-year school to enroll at a two-year school. This could happen if a student feels comfortable remaining enrolled in the Concurrent Courses partner college or if the partner college used the initiative to recruit potential students (through college visits and orientations) who were considering enrollment at a four-year college.

### Influence on College Choices

The Concurrent Courses evaluation examined whether students attended college after graduating from high school. Participation in the initiative might improve college attendance through several means. Concurrent Courses might boost academic achievement, thus improving students’ college readiness. Or the effect might be more subtle in that Concurrent Courses enhances students’ motivation to attend college or persuades them that college is a fitting opportunity for them. In this way, even without any academic achievement effects, Concurrent Courses might still encourage students to attend college. As noted previously, familiarity with the college where dual enrollment credits were earned along with participation in partner college activities (such as college orientations and college visits) may serve to further encourage a student’s ultimate enrollment in the partner college.

**While Concurrent Courses dual enrollees enter college at rates similar to students outside the program, controlling for certain student characteristics, they enroll at four-year colleges at a rate two percentage points above their district peers.**

Using regression analyses that control for student characteristics, findings for the first cohort suggest that Concurrent Courses dual enrollees matriculate at the partner college at similar rates as their district peers.<sup>20</sup> In terms of whether Concurrent Courses dual enrollees were more likely to enroll in any California public college (in our Cal-PASS dataset), there is no significant difference in enrollment in California public colleges (using the Cal-PASS dataset) for Concurrent Courses dual enrollees compared with their district peers. This finding emerges both when looking at cohorts separately and for the analysis pooling across graduating classes and sites.

However, there is a strongly positive association between Concurrent Courses dual enrollment and attending a four-year college — this finding holds for the class of 2009 as well as for the sample that pools across graduating classes and sites. Controlling for student characteristics including high school grade point average, dual enrollees enroll at a four-year college at a rate two percentage points above that of their district peers (whose baseline four-year college enrollment rate is 8 percent).

While Concurrent Courses students and comparison students appear to be enrolling in college at similar rates, it is discouraging to note that, on average, from the 2009 cohort to the 2010 cohort, college enrollment actually fell for both the dual enrollees and the district comparison students. Sixty-two percent of the 2009 cohort enrolled in college, while only 51 percent of the 2010 cohort did so (compared with 48 percent and 44 percent of the comparison students).<sup>21</sup> While the evaluation cannot explain why the drop was so large for Concurrent Courses students, it can likely be at least partly attributed to the dire economic situation in California in which the community college system has lost over \$800 million in state aid since 2008, leading colleges to reduce courses, sections and summer sessions. As a result, enrollment in the state's community colleges has fallen by 300,000 students since 2000.<sup>22</sup>

Given the career focus of the Concurrent Courses initiative, it is of special interest to also explore whether dual enrollees who do enter college continue to pursue a CTE pathway upon entry. While it is not an expected outcome of the Concurrent Courses initiative for participating students to remain in their high school career pathway, there is emerging evidence that the sooner college students enter a program or focused major, the more likely they will persist and succeed.<sup>23</sup> So it is of interest whether participating in Concurrent Courses encourages such decision-making.

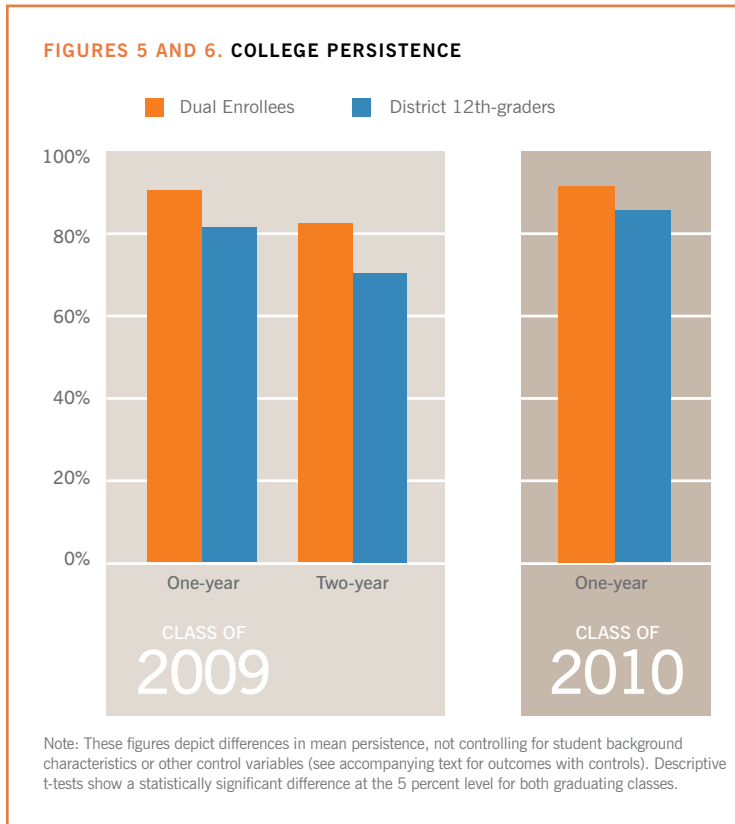
Across all sites, the evaluation finds that 44 percent of the class of 2009 and 75 percent of the class of 2010 declared a major upon college entry. Of those who did declare a major, the most frequently declared majors are registered nursing and liberal arts and sciences — this is the case for both graduating classes. The prevalence of the liberal arts and sciences major is not uncommon among community college students and suggests that this transfer pathway is popular among Concurrent Courses dual enrollees from both graduating classes. Dual enrollees from sites with a specific career focus, particularly those with a health careers focus such as Tulare and Sacramento, do tend to declare a major in a related area. Among the top majors declared by students in health careers pathways are registered nursing, health education, certified nursing assistant, licensed vocational nursing, and biology and biological sciences (which may be related to pre-med pathways). In the sites that offer many career paths, such as San Francisco and Santa Barbara, evaluators do not observe a clear pattern of CTE related major choices, although health and business/economics related careers are among the top five declared majors.

### **Influence on Performance in College**

While Concurrent Courses dual enrollees enter college at rates similar to those of their district peers, it may be expected that Concurrent Courses dual enrollment influences students' understanding of what is expected in college, which could lead to improved performance. For this reason, the evaluation examined performance in the early years of college among Concurrent Courses students who enrolled in the partner colleges or other colleges in the Cal-PASS system, comparing their outcomes with those of students from the same districts who were also first-time college enrollees. Specific postsecondary outcomes examined include: 1) college grade point average at the end of the first term; 2) basic skills course-taking in the first year; 3) persistence over one and two years; and 4) college

**Students participating in the initiative were more likely to persist through one and two years of college.**





credits accumulated at the end of first term, and at the end of one and two years. College grade point average was examined for each student cohort separately; all other one-year outcomes were examined for each student cohort separately as well as pooled across cohorts and sites. Two-year outcomes are available only for the class of 2009.

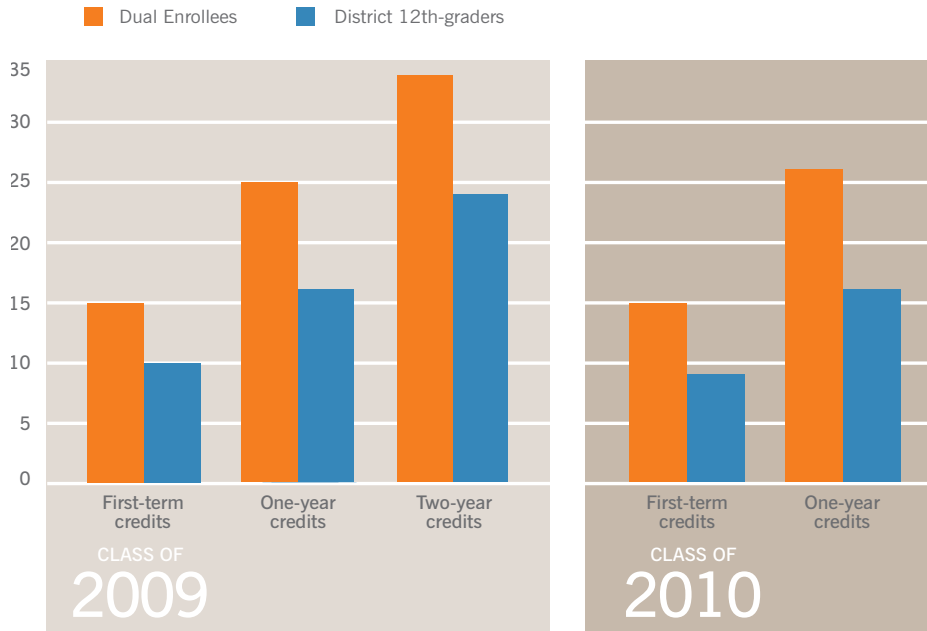
In terms of their college grade point averages, Concurrent Courses dual enrollees across both cohorts appear to be performing at a level similar to that of the comparison students. However, Concurrent Courses dual enrollees were much less likely to take a basic skills course

during their first year in college. This was true for the pooled sample as well as for both graduating classes. Concurrent Courses dual enrollees also were more likely to persist through one year of college, a finding that holds for both cohorts as well as the pooled sample. For the graduating class of 2009 — students who had the opportunity to enroll in college for two years during the study period — findings suggest higher rates of persistence among Concurrent Courses dual enrollees, differences that are statistically significant after controlling for student characteristics. See Figures 5 and 6.

The Concurrent Courses initiative was designed to provide students with the opportunity to earn college credit in high school. For this reason, Concurrent Courses dual enrollees were expected to accumulate more college credit than the comparison students. Still, it is informative to know whether early credit accumulation is sustained over time — whether dual enrollment provides continuing momentum.

And indeed, the evaluation finds a strong association with college credit accumulation. After one year in college for both graduating classes, and for the entire pooled sample, Concurrent Courses dual enrollees had more college credits accumulated (including the dual enrollment credits) than the comparison students. While the comparison groups had accumulated on average 16.9 and 17.2 credits (graduating classes of 2009 and 2010, respectively), the dual enrollees had 1.7 and 3.0 more credits.

FIGURES 7 AND 8. COLLEGE CREDITS COMPLETED OVER TIME



Note: These figures depict the differences in mean credits accumulated over time, not controlling for student background characteristics or other control variables (see accompanying text for outcomes with controls). Descriptive t-tests show a statistically significant difference at the 5 percent level for both graduating classes.

This is a difference of 10 percent to 18 percent in credit accumulation. Moreover, for the 2009 cohort of Concurrent Courses students, after two years in college they had accumulated 20 percent more credits than their district peers. These results are all statistically significant when controlling for background characteristics and prior ability. See Figures 7 and 8.

The evidence that Concurrent Courses is helping students to accumulate credits faster and earlier in their college careers is persuasive. This early momentum in terms of credit accumulation is sustained and even increased over time. This early start given to Concurrent Courses dual enrollees is likely a key factor to higher rates of persistence over one and two years.

It is important to note that the data reported here do not fully capture total credit accumulation of dual enrollees. The dataset revealed that not all Concurrent Courses dual enrollees transferred their dual enrollment credits to the postsecondary institution they enrolled in after high school graduation. Students who matriculated to four-year colleges were more likely to transfer their credits than students who enrolled in a community college different from the one where they took their dual enrollment courses. While the exact reason for this is unclear, it may be explained in several ways. Students enrolling in four-year institutions may be more motivated to transfer the credits because their potential savings in terms of tuition will be greater. If a student entering a different two-year college plans to transfer to a four-year college in the future, she may wait to transfer all of her two-year credits at once.

## Student Outcomes Summary

This section presented evidence on the influence of Concurrent Courses dual enrollment on various student outcomes for the first two years of the initiative. Findings include a positive association between Concurrent Courses participation and high school graduation. The evaluation also found that Concurrent Courses students and their district peers entered college at similar rates, but that Concurrent Courses students were more likely to matriculate to four-year institutions.

Many of the Concurrent Courses dual enrollees appear to be continuing in career-focused pathways upon college entry, a phenomenon that is particularly clear for the sites with a health career pathway. Evidence also suggests that dual enrollees are taking basic skills courses at lower rates than their district peers. While *not* being enrolled in basic skills courses upon college entry is generally taken as a positive outcome, it may not be ruled out that this finding reflects Concurrent Courses students simply delaying remedial work. In many institutions, receiving a referral to enroll in basic skills does not preclude students from instead enrolling in a wide range of other courses. It is also possible that upon college matriculation, the Concurrent Courses students were more likely than comparison students to enroll in career-technical or other courses that did not require the prior completion of remedial courses.

Concurrent Courses dual enrollees also persisted in their postsecondary studies at a higher rate, and they accumulated more college credits than the comparison group — and the advantages in credit accrual grew as the students progressed through college. The result for credit accumulation is likely understated as some Concurrent Courses students did not transfer their credits when they entered a different college. It is unclear whether students chose not to transfer their credits or if they did not know how to do so, but in working with the partnerships evaluators commonly encountered instances of students unsure of how to submit college transcripts to their high schools for the award of dual credit. This highlighted a need and opportunity to make credit transfer easier for students or even automatic.

## Additional Outcomes: Lessons from the Field

In addition to research on student outcomes, an important aspect of the Concurrent Courses initiative is a formative evaluation — identifying lessons from any potentially positive or negative implications of various forms of dual enrollment implementation. As noted earlier in this report, the Concurrent Courses sites were all rather different from one another and equally unique in their implementation strategies. Several key insights emerged from the field evaluation that could help position future efforts for greater success.

**Dual enrollment can be implemented in many different ways. However, if the goal is to target struggling or underrepresented students, careful consideration of the delivery format is crucial.**

While state legislation and education code govern funding and student eligibility for dual enrollment,<sup>24</sup> states have less interest in promoting a specific implementation model and tend to leave programmatic decisions to local institutions. This does not mean that these decisions are any less important or consequential. The structure of a dual enrollment program influences students' access and experiences. Students with a history of academic achievement can likely navigate academic institutions to their advantage, and privileged students may have the social capital that encourages participation in an early college experience. However, underrepresented or underachieving students may have personal circumstances, such as needing to work or care for younger siblings after school, that affect their potential for participation. As such, educators should carefully consider the program configuration of dual enrollment that most fits the circumstances and needs of their particular student population.

Summarized below are a selection of program considerations and their implications for student access: where the course is located (whether on the college or high school campus), when the class is offered (whether before, during or after school), who teaches the class (whether high school or college-based instructors), type of course content (whether academic or CTE), credit earning (whether dual credit or college credit only) and student mix in the course (whether they are integrated with college students or in class with only other high school students).<sup>25</sup>

**Course location.** Course location is important as it strongly influences which students have access, whether the course is perceived as authentic, and the availability of support services. Location on the college campus provides the most authentic college experience, and students benefit from the academic and other support services available on campus. For example, students from the Architecture, Construction and Engineering Academy at Jordan High School who take classes on the CSU Long Beach campus are given college identification cards and are able to use the campus library to conduct research for class presentations. These students are arguably more likely than students taking dual enrollment on the high school campus to gain the information and experience needed to successfully navigate these institutions once they become regularly matriculated college students.

Yet, offering courses on the college campus can close access to students without transportation. Students in North Orange County told us that they could not participate if the courses were located on the college campus as they would have no way to get home after class. Some also said that their parents did not want them traveling to the unfamiliar college campus. Because of transportation challenges, the majority of Concurrent Courses sites offered courses at the high school. Still, in surveys and focus groups students told initiative evaluators that they felt these courses located at high school had the potential to be just as beneficial as those offered at the college, and that the high school location did not negatively influence the degree to which they were building confidence about their ability to succeed in college.

Dual enrollment courses at the high school also permit greater integration and alignment with high school courses. Many Concurrent Courses initiative courses were offered as part of an academy or pathway that linked CTE and academic content. The intent of curriculum integration is to create practical and relevant content that prepares students academically and technically for success in college and career. In the Sacramento partnership, for example, dual enrollment on the high school campus was part of a rigorous, integrated pathway preparing students for health careers. On the high school campus, dual enrollment is not seen as a discrete activity but rather as an integral part of the high school's career program.

*Time of day.* Similarly, considerations around when to offer dual enrollment courses varied from site to site and were influenced by scheduling, benefits to students and potential barriers to participation. Offering courses before school — during “zero period,” as it is often called — allowed schools to accommodate students with heavy class schedules and after-school obligations, yet students had to be motivated and have the transportation available to arrive at school early. Dual enrollment courses at the Santa Barbara and Shasta sites were integrated into the regular school day on the high school campus, which generally broadens the pool of students able to participate. However, in this arrangement students may not strongly distinguish the college courses from their high school courses. Finally, dual enrollment may be offered after school on either the high school or college campus, which does not interfere with students' high school schedules. The after-school model is particularly beneficial for programs that serve multiple secondary schools but do not have the resources to offer courses on each high school campus, such as in North Orange County. However, courses offered after school can conflict with students' other needs and responsibilities, such as employment, sibling child care, clubs and sports, or after-school remediation and test prep.

*Instructors, pedagogy and course content.* The characteristics of instructors — which institution they represent, their experience and their pedagogical methods — affect the actual and perceived authenticity of dual enrollment courses. The instructor, whether a college faculty member or high school teacher, can strongly influence whether a college environment is created in the classroom, regardless of the location of that classroom. For Concurrent Courses students, being treated as adults in the classroom is what most distinguished college classes from high school classes. This entailed focusing less on rules in the classroom and giving students greater freedom and greater responsibility for their

own work. The content of the course should also be considered in relation to program goals. Course selection may be informed by whether the priority is to provide an entry point to a college/career-technical pathway, to improve students' academic knowledge and skills, or to give students tools that will help them succeed in college.

**Credit earning.** Dual credit rewards students with both college and high school credits — a significant incentive for students to participate in dual enrollment programs, as they can save money and time in the long run. Particularly for students with packed schedules, dual credit is an opportunity to accelerate credit earning toward a high school diploma while simultaneously gaining valuable (often free) college credits.

However, not all of the Concurrent Courses programs were able to offer dual credit. In California, individual high school and community college district governing boards decide whether a dual enrollment course will yield both high school and college credit.<sup>26</sup> In North Orange County, the high school board does not permit the granting of dual credit. The board may be concerned that high school course offerings would be supplanted by dual enrollment, thereby threatening teachers' jobs. Even where dual credit is available, the awarding of this credit is not always automatic. College students, even dual enrollment students, are considered adults, which means that their records are considered privileged. Thus, high schools do not automatically have access to student transcripts. This makes it difficult for high schools to keep track of students' enrollment and progress in college courses and it has an impact on students' ability to gain dual credit.

**Student mix.** The Concurrent Courses evaluation suggests that the mix of students in dual enrollment courses influenced the perceived authenticity of the experience and how students approached the course. Some student focus group participants commented that being in college courses with only their high school peers did not differentiate the experience from high school. "When you're in a class with adults," a San Francisco student said, "it's more of a college-level environment. You feel more professional." Being in a class with college students also serves the purpose of exposing first generation college students to other college-going peers. On the other hand, some students remarked that taking college courses with their high school classmates provided them with a positive sense of comfort and familiarity, while being in class with regular college students was intimidating.

**Offering dual enrollment as part of a career pathway provides better integration with high school courses and makes it easier to serve underrepresented students.**

Career-technical education has been found to contribute to students' likelihood of high school graduation, among other benefits. California has a long history of supporting career-technical education through Partnership Academies, Regional Occupational Programs and now through the Linked Learning initiative. In addition to their career focus, such programs can be considered small learning communities that provide a more personalized environment. Dual enrollment has been less widespread in the state, a function of policies that are more restrictive than encouraging.<sup>27</sup> Should Californians wish to continue to expand dual enrollment opportunities for those students most in need of such experiences, doing so through Academy and Linked Learning programs is a logical strategy.

To reach disadvantaged students underrepresented in higher education today, dual enrollment must be institutionalized as a valued component of a program or course of study. If participation depends on the motives and drives of individual students, it is likely that the more advantaged students will register with their parents' support. For students who do not necessarily view themselves as continuing on to college and who do not have families showing them the way, dual enrollment opportunities should be presented as an expected part of the high school program, along with other activities and support services provided to build college and career readiness and reduce student fear or anxiety.

In some of the Concurrent Courses initiative's newer partnerships, program staff had some difficulty recruiting students to dual enrollment courses, and additional difficulty enrolling students into some of the support services. For many students, dual enrollment was a new idea, something unknown and potentially perceived as daunting. Yet, over time the number of participants across Concurrent Courses sites increased. It is likely that embedding these opportunities within career-focused small learning communities is an effective means of encouraging and supporting participation by these students.

**Building and strengthening the relationships between secondary and postsecondary institutions produces positive changes for the institutions beyond the program.**

The Concurrent Courses initiative both facilitated a number of new college-high school partnerships, and it strengthened and expanded existing ones. While it was always clear that strong inter-institutional relationships would be crucial for program success and sustainability, Concurrent Courses became the catalyst to deeper and better cross-sector relationships and to more dual enrollment and other activities designed to improve the overall college preparation of high school students. Most important, Concurrent Courses promoted college-going as a norm in some sites where before that had not been the case.

For example, in the Redding area, home of the Shasta partnership, going to college after high school has not been the default expectation; many students do not have family members with college experience, and there are not many postsecondary options in the immediate vicinity. For the most part, college preparation while in high school has been confined to the subset of students in the "college-prep" (such courses are designated "CP" in course catalogues and schedules) or AP tracks. The district's schools and courses are still organized this way, with college-bound versus non-college-bound tracks, even though economic opportunities for individuals with only a high school education have severely diminished locally.



Irvine funds brought the secondary and postsecondary partners together to implement the renewable energy program in Redding and, along the way, led to conversations about additional career pathways with a dual enrollment component. Students can now choose from an array of career-focused college courses offered in their high schools, and a college staff member is putting in place procedures for course selection, scheduling and student registration. Most significantly, the initiative has prodded the school district to focus more strongly on college-going in general. In conversation with evaluators, the partners emphasized the importance of the initiative in strengthening secondary-postsecondary alignment and relationships generally, and in making college-going a more concrete reality for the participating students.

**The new expectation is dual enrollment — college — for all students.**

Santa Barbara has had a strong career-focused dual enrollment program for some time, serving several high schools in the area. One focus of the grant was to strengthen these activities at Carpinteria High School, the area high school whose students have the greatest need. At the Concurrent Courses final convening in November 2010 the school's principal shared a heartfelt presentation, expressing that as a result of the initiative, at Carpinteria "dual enrollment is normal." Approximately one-third of the school's students are enrolled in college classes at any one time. And with the implementation of the City College Career Choices class for all ninth-graders, the new expectation is dual enrollment — college — for all students.

At Arthur A. Benjamin High School in Sacramento, a qualified high school teacher taught a college introductory anatomy course on the high school campus, and in the process learned how underprepared her students were for the material. And as increasing numbers of students from that high school went to the college campus to take courses, the college faculty shared their perspectives on the high school students with their high school counterparts. This led to school-wide and cross-sector conversations about how to improve students' skills and facilitate a better transition from high school to college. As a high school administrator later related:

*"We learned that... the high school courses were not rigorous enough. And we really learned that from the community college faculty, and them calling our faculty on their stuff... We talked about what it would take to make kids successful. And the community college faculty were very respectful, but also very clear and they said [about the students]... They have an entitlement mentality to getting a grade, and it doesn't fly with us..."*

Concurrent Courses community college partners have also indicated that their participation in dual enrollment has helped them to better understand how to properly serve their already matriculated students. A tenured faculty member teaching dual enrollment courses in North Orange County found that her assumptions about the level of preparation of her regular college students were tested by her experience with the high school students. She realized she needed to develop new teaching strategies to help both student populations. The students attending her open-access community college are really not much different from the dual enrollment students, and in teaching the latter she gained a better understanding of the former. This should have lasting benefits for all her students.



The high school-college divide — the problem of students' poor transitions from high school to college — will not be overcome without the two sectors coming together in a stronger, more collaborative way. This is increasingly being recognized across the country, with many initiatives underway that emphasize early college assessment of high school students, high school curricular reform based on college entry standards, the strengthening of career-technical pathways through programs of study, and other kinds of college readiness partnerships.

The Concurrent Courses initiative supported such collaboration, bringing together secondary and postsecondary teachers, faculty and administrators to prepare students for college and to support them in their first college experience. In doing so, the adult participants gained a much better understanding of the students' needs and of what was required to promote the students' ongoing success in college.

## Promising Program Strategies

Given the positive outcomes found for participating students, this section more closely examines some of the different approaches the partnerships followed. All eight programs shared the same major components — a career-technical pathway with dual enrollment opportunities and supplemental supports — yet they were quite different in their contexts and structures. They also faced different challenges. This section highlights strategies that likely contributed to student outcomes, representing three of the partnerships.

### North Orange County: The Importance of Choosing the Right Courses

The North Orange County (NOC) dual enrollment program, which was discontinued in summer 2011 due to lack of funding, was developed through a partnership among the California Regional Occupational Program (ROP), the Anaheim district high schools served by the ROP, as well as Cypress College and Fullerton College. The partnership’s dual enrollment program targeted disadvantaged students and had the following goals: develop relevant dual enrollment courses for students in the ROP “Careers in Education” pathway; and provide support services and arrange college visits for participating students to help them transition to the colleges’ teacher preparation or other programs.

The NOC program was the county’s first comprehensive dual enrollment program in that it offered college courses that were connected to the students’ high school career pathway; held the college classes on high school campuses so that students could access them easily; and offered additional support services, such as college exploration and in-class academic assistance. The program offered four college courses that rotated among the participating high schools. The classes, which were held after the school day, were taught by full-time or adjunct professors from the colleges and were populated exclusively by high school students, mostly Hispanic girls.

**To improve retention rates, courses had to be at the appropriate academic level — not too difficult but still challenging — and the topics had to be meaningful to the high school students.**

Student persistence was a challenge in the early stages of the program. Over time, and after some trial and error, the partners learned that they could improve retention rates by more carefully selecting courses and instructors. The courses had to be at the appropriate academic level — not too difficult but still challenging — and the topics had to be meaningful to the high school students. The partners also learned to spend more time screening instructors to find those who were particularly engaging and committed to teaching the target population. Ultimately, four different three-credit courses were offered: Counseling 150: Academic and Life Success; Cross-Cultural Psychology; Ethnic Studies; and Communications. These courses provided students with knowledge and skills relevant to their future college work in teaching and awarded credits that were transferable to the state university system.

The Counseling 150: Academic and Life Success course became particularly popular, with high rates of student retention and success. Courses of this type are employed by Concurrent Courses partnerships (and by colleges, more generally) to build skills in two ways: helping students understand the expectations of college before they enroll in other courses and familiarizing them with the college campus and offerings. This approach ideally packages academic, behavioral and personal supports within the same college-credit-bearing course — an effective way to include lower-achieving students in dual enrollment, helping to ease them into more academically rigorous courses.

The instructor of Counseling 150 used an engaging pedagogical style and created activities to help students in multiple ways. For example, the instructor had students identify factors that caused them to lose concentration during class and devised strategies to overcome distractions. The instructor also assigned the students to teach chapters from the textbook to the rest of the class. To succeed in this task, students had to master the material, plan a lesson and practice speaking skills — all of which reinforced what they were learning in their ROP teaching courses. Many students commented that while the extensive writing in the course was difficult, they valued the course.

Students completed questionnaires at the beginning and end of the course to give the program staff a sense of their backgrounds, their expectations and their experiences and learning in the course. The questionnaires revealed that while almost two-thirds of the students' parents did not have high school diplomas, earning a college degree was important to all of the students. During a focus group, one North Orange County student shared the following: “Last year I was kind of scared. I’m going to be a senior soon... but now I want to go to college, now it’s like I *want* to go to college!”

Program staff originally planned to offer extensive tutoring to dual enrollment students. However, they discovered it was difficult to identify and hire tutors and even more difficult to get students to take advantage of the service. They ultimately solved this problem by embedding college student interns within the classes to help the high school students. The interns bridged the gap between the students and professors, helped students analyze reading assignments in small groups, and answered questions that students didn’t feel comfortable asking the professors. The interns performed the service as part of their college program’s work-based learning requirement.

### **San Francisco: Systems Plus Customization**

In 2008, City College of San Francisco (CCSF) partnered with four high schools — Burton, Lincoln, Mission and Wallenberg — to expand their long-standing career-technical education (CTE) dual enrollment program and enroll greater numbers of minority and low-income students. City College has the following goals for the program: increase the number of underrepresented students in high school career pathways and dual enrollment courses; improve academic outcomes for dual enrollment students; increase college course offerings in a variety of career fields; and provide professional development for dual enrollment faculty and staff.

Over the course of the Concurrent Courses initiative, the partnership expanded their offerings from five to 36 courses across several career fields. CCSF also offers preparation for the California High School Exit Examination (CAHSEE) and other academic skill-building courses for which students may earn high school credit but not college credit. Unlike the other Concurrent Courses initiative sites, most of this partnership's dual enrollment courses take place on the CCSF campuses. College faculty teach the courses, and high school students are usually integrated with college students. How do they make this work?

The CCSF program director uses an approach she calls “systems plus customization.” Student orientation and registration are accomplished using a standardized system, but course offerings and student supports are modified to fit each high school's population and programs. This approach has been particularly effective, enabling the partners to consistently assess what does and does not work at a particular school and apply new strategies to achieve better results.

**Student orientation and registration are accomplished using a standardized system, but course offerings and student supports are modified to fit each high school's population and programs.**

Each semester, students receive a dual enrollment catalog from the college, which lists course offerings by CTE field. The courses are selected to align with the high school career programs, and the catalog indicates how many seats are likely available in each course for dual enrollment students. When funding is available, some courses are reserved entirely for the high school students. The catalog also includes information about important dates, academic resources and the enrollment process.

Students complete an online application, often with the help of CCSF staff at their high school, and then they attend a daylong orientation at the college campus, for which they receive half a college credit. At this event, students hear from guest speakers, meet with a counselor, take a tour of the campus, and receive information on textbooks and other logistical matters.

Program staff established systems to monitor students' progress and provide them with support throughout the semester. The program counselor visits the first session of each course and holds weekly office hours on the college campus, during which students can voice concerns to her in person. The counselor uses social media to keep in touch with students, with an email list and a Facebook page to keep students abreast of ongoing activities. She also sends out frequent text messages and emails to remind students of important dates or to encourage them to study for exams. As a result of these efforts, the program counselor is well known and visible to students.

### Tulare Health Careers Pathway: Students Serving in the Community

The Tulare dual enrollment program in central California was developed through a partnership between the College of the Sequoias (COS) and the Tulare Joint Union High School District's Health Careers Pathway (HCP). HCP is a career-technical education (CTE) pathway that serves students from three of the district's high schools — Mission Oak, Tulare Union and Tulare Western — and various alternative programs. The Tulare dual enrollment program has the following goals: to increase college matriculation rates for underrepresented student populations by providing academic and non-academic support services, to expand community college access, and to increase collaboration among the high schools served by the HCP and offer courses that are related to students' career goals.

The Tulare Health Careers Pathway has a well-defined program of study comprising high school health occupations courses, opportunities for postsecondary articulation, dual enrollment, internships and industry-sponsored certifications. Pathway courses include Essentials of Nursing; Fundamentals of Administrative Medical Assisting, Billing and Coding; Introduction to Health/Hospital Occupations; as well as a Certified Nursing Assistant (CNA) sequence. Dual enrollment courses, such as General Psychology, Introduction to Sociology, and Personal and Community Health are designed to prepare students to enter College of the Sequoia's nursing program. The courses are taught by college professors in the evenings on the high school campus.

An integral part of the HCP is to provide the students with experiences in the local community through work-based learning and service activities. The partners have strong relationships with health agencies in the county. Tulare has some of the highest poverty and unemployment rates in California, and a countywide health services coordinating group meets regularly to rationalize health services and training. HCP and COS representatives are key members of this group, and the resulting relationships have been central to helping them provide students with quality work and volunteer experiences.

**All involved parties — students, HCP staff, and industry and community stakeholders — speak with great enthusiasm about the opportunity to provide paid work-based learning opportunities that directly relate to students' career goals.**

Students are placed in paid internships at the local clinic and medical center. All involved parties — students, HCP staff, and industry and community stakeholders — speak with great enthusiasm about the opportunity to provide paid work-based learning opportunities that directly relate to students' career goals. In addition, the program provides student leadership opportunities. Many pathway students complete Peer Education Leadership Training, which prepares them to talk to middle school students about health issues, such as prevention of pregnancy and sexually transmitted diseases; they reach hundreds of middle school youth in this way. While the HCP students are out speaking at schools, they also share information about the health careers pathway and try to encourage student interest in it. Finally, students participate in Health Occupations Students of America (HOSA), the national health occupations student association; some have the opportunity to attend its conferences.

### Multiple Approaches, Continued Commitment

These brief portraits provide useful information on strategies some of the partnerships employed in course and instructor selection, managing a growing program systematically while retaining an individual touch, and connecting students with their communities through career pathways. The initiative included many other interesting approaches not captured in these portraits. City College of Santa Barbara piloted a college credit-bearing education-and-career planning course for ninth-graders and then developed additional curricula for use in grades 10 through 12 to support student goal-setting.<sup>28</sup> The Long Beach program offered a variety of two- and four-year postsecondary pathways to its students. Student participants in Los Angeles were offered a summer workforce readiness course. Shasta renewable energy program courses included hands-on activities that were both fun and highly educational. And the Sacramento program provided an array of strong career and college preparation activities equipping its students for adulthood.

Even with severe financial stress, which led to the loss of staff at some high schools, uncertainty year-to-year about additional reductions and decreases in course sections at the colleges, the partners' commitment to the initiative's goals remained quite strong.

## Moving Forward: Barriers and Recommendations

If, based on the evaluation findings presented here, along with the prior research on dual enrollment, there is agreement that these opportunities should be encouraged across California, what are the next steps? And what are the challenges and barriers? This section provides recommendations for changes to state and local policy and to institutional practice, so that dual enrollment can become a common component of a broad, statewide college and career readiness strategy.

The accomplishments of the Concurrent Courses initiative are evidence of the benefits of career-focused dual enrollment programs. Evaluation of the initiative demonstrates that secondary-postsecondary partnerships such as these can help undo the high school-college divide toward greater alignment, better-prepared students and academic success among underrepresented populations. Yet, serious barriers remain that make doing this work challenging. Indeed, of the eight Concurrent Courses sites, two could not continue to offer dual enrollment opportunities once their grant funding was depleted.

### State Policy

***Remove funding penalties.*** While some states have adopted policies encouraging the spread of dual enrollment, particularly fostering participation by a broad range of students, California policy restricts, rather than encourages dual enrollment. For example, Iowa and New Mexico have policy exempting dual enrollment students from tuition or fees; California policy only *allows* community college governing boards to waive fees. In addition, the policies addressing average daily attendance (ADA) and full-time-equivalent student (FTES) funding for dual enrollment students likely discourage institutional participation. School districts can claim full ADA for dually enrolled students only if the students are enrolled in and attend high school for 240 minutes per day. (The districts may claim three-quarters ADA for dually enrolled students who attend high school for 180 minutes.) Community colleges can claim FTES for dually enrolled students only so long as the courses are open and advertised to the public.

To work around these funding restrictions, dual enrollment courses in California are often scheduled before and after school hours or on weekends so that both institutions can claim funding. In contrast, several other states follow a “hold harmless” funding model, in which neither participating institution loses any of its regular per-pupil funding. While some believe this double-funding for dual enrollment students to be wasteful, the results presented here and supported by other studies show that this view is short-sighted. California policymakers should examine different approaches to funding that will encourage, rather than discourage, institutional participation. In the absence of total reform of the current policies, the state could allow partnerships that serve a high percentage of disadvantaged or historically underrepresented students to bypass the above rules.

***Make dual credit earning consistent and portable.*** In addition to funding mechanisms, policies around credit-earning can encourage (or discourage) participation in dual enrollment. When students can earn dual credit, they are able to better fit college courses into their schedules as these courses also help them meet their high school requirements. In California, policy allows the high school and community college district governing boards to determine whether to award dual credit, which means that districts may even prohibit granting high school credit, as is the case in North Orange County. In contrast, states including Iowa and New Mexico mandate dual credit — dual enrollment students earn both college and high school credit for the dual enrollment course. Arizona law states that high school graduation requirements may be met by college courses, and there is no limit to the number of college courses that can count toward those requirements.

Also with regard to credit-earning, it was apparent that some of the college credits students had earned via Concurrent Courses dual enrollment were not showing up in their college records. While this problem may be due to a number of reasons, it raises the concern that today's mobile students find it challenging to transfer their credits from one institution to another. As California policymakers address the recommendations from the Student Success Taskforce of the California Community Colleges,<sup>29</sup> they should also seriously consider a statewide system for easy portability of college credits that does not rely on individual student initiative.

***Standardize broad student eligibility.*** While educational reform has certainly made progress in ensuring broader pools of students have access to key educational resources, the educational outcomes of disadvantaged students remain linked to unequal access. Longitudinal data are hard to come by, yet it is believed that with the growth of dual enrollment participation over the last decade has come changes to the type of student participating. While dual enrollment was previously an option for higher-achieving students who had taken all the advanced courses their high school had to offer, increasingly dual enrollment has come to be seen as a college transition strategy for a broader range of students, including those who lack college readiness. State policy regarding student eligibility for dual enrollment should clearly reflect the state's goals regarding the target population and desired outcomes. Dual enrollment can be used as an early college strategy to promote equality in educational access and outcomes. A recent policy brief calls for equal access and eligibility for dual enrollment and identifies five other design principles that characterize the best dual enrollment policies.<sup>30</sup>

At present, California policy sets no statewide academic eligibility criteria but stipulates that the participating colleges may impose criteria based on multiple assessments that may include entry assessment tests. Requiring students to take assessments may inhibit their participation, and recent studies have shown that the most commonly used off-the-shelf assessments are poor predictors of student success in college.<sup>31</sup> A better alternative would be a more individualized and holistic approach in which no student was automatically disqualified by grades or test scores, but instead closely counseled as to which college courses would be most beneficial. College orientation or student success courses, such as the popular one taught in the North Orange County program, have been shown to positively influence student outcomes.<sup>32</sup> There should be no reason to screen out students who wish to enroll and who would benefit from dual enrollment courses.



## Institutional Policy and Practice

The brief review of program implementation considerations presented in the previous section of this report leads to some institution-level recommendations.

***Continue to make dual enrollment available on both the high school and college campuses.*** Students should continue to have dual enrollment opportunities in both of these venues. When transportation can be arranged, students in courses on the college campus are likely to have a fuller and more authentic college experience. Yet, we must not cut off opportunities for college content and credits to students who lack transportation.

***Explore ways to ensure authenticity of the high school-based program format.*** To promote the highest possible course authenticity in the high school campus-based courses, California institutions should explore the accreditation opportunity offered by the National Alliance of Concurrent Enrollment Partnerships (NACEP). NACEP defines concurrent enrollment as college courses taught on the high school campus by high school teachers with the requisite credentials. The goals of the accreditation program are to ensure that concurrent enrollment courses have the same rigor and quality as college campus-based courses, and that students in such courses are held to the same standards of achievement as college campus-based students. The accreditation program includes a self-study and peer review process, and now covers almost 200 postsecondary institutions located in 32 states, including Concurrent Courses initiative partner Santa Barbara City College, whose program was recently accredited.<sup>33</sup>

***Provide professional development to dual enrollment instructors.*** Teaching practices can significantly influence student retention, yet until recently, little attention has been paid to teaching in the dual enrollment classroom. The Concurrent Courses initiative purposefully addressed student engagement and teaching strategies. High school dual enrollment teachers may need greater assistance in creating a college-like atmosphere in their courses, and college instructors may need insights into scaffolding and other pedagogical strategies to support high school students. Bringing the two together, as Concurrent Courses did, can be particularly valuable and can bring about better teaching in the non-dual enrollment classroom as well. Dual enrollment programs should not overlook professional development for the participating instructors.

***Identify dedicated college staff to smooth logistical challenges.*** One of the challenges most frequently cited by the Concurrent Courses initiative partnerships was that of registering the high school students for college courses. Certainly the different semester schedules of high schools and colleges make registration difficult, but the registration procedures were also often confusing and cumbersome, and usually required both paper and electronic forms. Colleges should identify a student services staff member knowledgeable about and responsible for registration of dual enrollment students.

***Obtain student consent to share college records.*** Finally, it can be difficult for the participating high schools to monitor student progress and intervene when necessary, as each student's college records are private and cannot be shared without the student's consent. As a result, high school administrators and counselors tend not to be aware of how students are doing in their college

coursework. One way to ensure that relevant adults can address any difficulties students are having is to require them to sign a form allowing their college grades to be sent directly to high school partners so they can play a more active role in providing supports.

### **Has the Initiative Brought About the Desired Effects?**

The Concurrent Courses initiative has laid a foundation for strengthening the high school to college transition. In just three years, partnerships implemented and enhanced programs that provided college exploration and dual enrollment offerings to California students who had not previously had those opportunities. The data show positive high school and college outcomes. Certainly there is evidence of strengthened relationships among the secondary and postsecondary partners, with one outcome being a better understanding of the needs of underprepared students and how to meet those needs collaboratively. Most significantly, the initiative was transformational in setting an expectation for college-going and creating a demand for college participation where one did not exist before.

## Appendix A: Site Summaries

### Arthur A. Benjamin Health Professions High School, Sacramento

**Partner: Sacramento City College**

Arthur A. Benjamin Health Professions High School integrates healthcare career standards with a rigorous high school academic curriculum. Students from this high school, 80 percent of whom come from underrepresented groups, take allied health and academic courses offered by Sacramento City College, with support from college tutors and summer activities on the college campus. The majority of students are expected to take two college courses before high school graduation.

#### Sacramento

<b>LOCATION</b>	College campus and high school
<b>INSTRUCTOR TYPE</b>	College faculty and high school teachers
<b>COURSE OPTIONS</b>	Academic
<b>STUDENT MIX</b>	High school and college
<b>NUMBER OF STUDENTS</b>	56
<b>CREDIT EARNED</b>	Dual credit
<b>TIME OF DAY</b>	Before and during school

### City College of San Francisco, San Francisco

**Partner: San Francisco Unified School District**

The City College of San Francisco has a long-running dual enrollment program with multiple high school partners in several career fields. Through the Concurrent Courses initiative, City College has included more underrepresented students in its programs through targeted outreach efforts and new secondary partnerships. The college also has implemented a for-credit orientation program, basic skills courses for struggling students, and ongoing CTE professional development.

#### San Francisco

<b>LOCATION</b>	College campus
<b>INSTRUCTOR TYPE</b>	College faculty
<b>COURSE OPTIONS</b>	Academic and CTE
<b>STUDENT MIX</b>	High school and college
<b>NUMBER OF STUDENTS</b>	209
<b>CREDIT EARNED</b>	Dual credit
<b>TIME OF DAY</b>	During and after school

**Long Beach Unified School District,  
Long Beach**

**Partners: Long Beach City College and  
California State University Long Beach**

The Architecture, Construction and Engineering Academy (ACE) at Jordan High School is a school within a school. Approximately 70 percent of the students at ACE come from low-income families. The school works with two college partners to develop curricula that integrate academic and technical education. This dual enrollment program takes place at the two colleges — a two- and a four-year institution — and includes other academic and support activities.

**Long Beach**

<b>LOCATION</b>	College campus and high school
<b>INSTRUCTOR TYPE</b>	College faculty
<b>COURSE OPTIONS</b>	Academic and CTE
<b>STUDENT MIX</b>	High school and college
<b>NUMBER OF STUDENTS</b>	44
<b>CREDIT EARNED</b>	College credit
<b>TIME OF DAY</b>	During school

**Los Angeles City College, Los Angeles**  
**Partners: Hollywood Senior High School,  
Downtown Business Magnets High School,  
Miguel Contreras Learning Complex**

Los Angeles City College offered a five-semester course sequence for high school students in multimedia and web development (this program is no longer being offered). The sequence, comprising of 18 college credits, led to a certificate and was made available to low-income, underrepresented students at three partnering high schools. Classes were taught by college instructors and yielded both college and high school credit. Job readiness workshops and paid internships were also made available to students enrolled in the sequence.

**Los Angeles**

<b>LOCATION</b>	High school
<b>INSTRUCTOR TYPE</b>	College faculty
<b>COURSE OPTIONS</b>	CTE
<b>STUDENT MIX</b>	High school
<b>NUMBER OF STUDENTS</b>	95
<b>CREDIT EARNED</b>	Dual credit
<b>TIME OF DAY</b>	After school

**North Orange County Regional Occupational Program, Anaheim**

**Partners: Anaheim Union High School District, Cypress College, Fullerton College**

The North Orange County Regional Occupational Program has created a pathway in education for students interested in teaching and related careers. More than three-quarters of students enrolled in the education pathway are English language learners. Transferable college courses taught by college instructors were offered to students after school at the high schools. The program, which is no longer operating, also offered tutoring to support students' success in the courses and college field trips to promote college exploration.

**North Orange County**

<b>LOCATION</b>	High school
<b>INSTRUCTOR TYPE</b>	College faculty
<b>COURSE OPTIONS</b>	Academic and CTE
<b>STUDENT MIX</b>	High school
<b>NUMBER OF STUDENTS</b>	83
<b>CREDIT EARNED</b>	College credit
<b>TIME OF DAY</b>	After school

**Santa Barbara City College, Santa Barbara**

**Partners: Santa Barbara High School District, Carpinteria High School District, South Coast Regional Occupational Program**

Santa Barbara City College has a large, well-established dual enrollment program offering college courses to more than 1,000 high school students, many of whom are enrolled in career academies. The college has developed bilingual program materials and implemented a freshman seminar (with credits that are transferable to the University of California) that has increased the participation of underrepresented students in dual enrollment.

**Santa Barbara**

<b>LOCATION</b>	High school
<b>INSTRUCTOR TYPE</b>	College faculty and high school teachers
<b>COURSE OPTIONS</b>	Academic and CTE
<b>STUDENT MIX</b>	High school
<b>NUMBER OF STUDENTS</b>	1,149
<b>CREDIT EARNED</b>	Dual credit
<b>TIME OF DAY</b>	Before, during and after school

**Shasta Union High School District, Shasta**  
**Partners: Anderson Union High School District, Shasta College, Shasta-Trinity Regional Occupational Program**

The Shasta partners have a strong history of collaboration on career and technical education and granting high school students college credit through examination. They have used this experience to implement dual enrollment in the renewable energy field. Their activities include developing program sequences in renewable energy, organizing an annual renewable energy fair, providing transportation for students to take courses on the college campus, and tutoring to support students' academic progress.

Shasta	
LOCATION	College campus (for 2009–2010 only)
INSTRUCTOR TYPE	College faculty and high school teachers
COURSE OPTIONS	CTE
STUDENT MIX	High school
NUMBER OF STUDENTS	67
CREDIT EARNED	Dual credit
TIME OF DAY	During school

**Tulare Joint Union High School District, Tulare**  
**Partner: College of the Sequoias**

The Tulare partnership provides college courses on a high school campus for students participating in a district-wide allied health pathway. Seventy-five percent of participating students are low-income. Students receive free college credit that is transferable and meets industry certification requirements. A range of supports are offered, including tutoring, career awareness activities, and “college knowledge” workshops.

Tulare	
LOCATION	High school
INSTRUCTOR TYPE	College faculty
COURSE OPTIONS	Academic
STUDENT MIX	High school and college
NUMBER OF STUDENTS	54
CREDIT EARNED	Dual credit
TIME OF DAY	After school

## Appendix B: Data Sources

Given the complexity of the Concurrent Courses initiative, the evaluation used multiple data sources to address a wide range of research questions regarding program implementation and student outcomes.

### Fieldwork at Program Sites

- Used to understand program implementation and influence of state and local contexts
- Conducted fall 2008 and 2009; visited all eight partnership sites
- Data collected include: faculty/staff interviews, student focus groups, classroom observations, support activity observations
- Field visit notes were converted into narrative form and thematically analyzed

### Student Surveys

- Used to better understand student participation and experiences in dual enrollment courses and support services
- Administered to all dual enrollment participants during spring 2010
- Spring 2010 survey participants (n=563) took college courses either during fall 2009 or spring 2010
- Students reported on program experiences, interest in the career field, educational aspirations and future plans, and family background
- Spring 2010 overall response rate is 60 percent; individual site response rates range from 29 percent to 90 percent
- Survey data were aggregated across sites for analysis of overall student perspectives
- SPSS was used to run basic frequencies to help identify patterns, answer research questions and discover outliers and/or surprising outcomes

**Cal-PASS**

- Used to track student outcomes following participation in Concurrent Courses
- Data include transcripts, demographics and standardized test scores from 2008–09 cohort
- Variables include: demographics, parental education, test scores, grades and credits earned
- Dataset includes all students in participating school districts
- A supplemental data file was created to collect information on Concurrent Courses participation, including only students in the initiative. Variables include: college course-taking, location and type of instructor for the college course and support services received
- Transcript and Concurrent Courses data were linked to student identifiers permitting tracking of students' academic progress over time
- Data analyses included descriptive statistics, regression analysis and propensity score matching



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18. The exception is the Sacramento site, where the community college district limited the comparison sample to a random sample of district high school graduates.
19. A forthcoming working paper issued by the National Center for Postsecondary Research provides additional detail on the quantitative methodology used in the student outcomes analyses.
20. Note that we did not examine enrollment in the partner college separately for the second cohort. By the time the second cohort entered college, postsecondary enrollment data were already available from a larger set of colleges through the Cal-PASS data system. As such, our analysis of the second cohort focused on enrollment in any college within the Cal-PASS system, which includes the partner college.
21. These figures are the straight frequencies from the dataset. They show that the CCI students were more likely to transition to college than the comparison students. However, we can likely attribute this difference to student background characteristics, as the regression analyses that control for such variables found no positive effect on CCI participation and college-going in general.
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33. See the NACEP website for more information. <http://nacep.org>.



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