A Guide to Launching and Expanding Dual Enrollment Programs for Historically Underserved Students in California

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An Introduction to the Dual Enrollment Guide

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What is the Dual Enrollment Guide?

This guide has been developed by the Research and Planning (RP) Group for California Community Colleges in partnership with the California Community College Chancellor's Office and the San Joaquin Delta Community College District to **assist and inform secondary and postsecondary partners who are considering launching or expanding dual enrollment programs for underrepresented minority (URM)[1] populations**. Its content has been **designed to offer insights into and highlight resources and tools for those programs serving URM populations**.

What is the purpose of the dual enrollment guide?

This practical guide **introduces key defining components, characteristics, practices, and policies** associated with dual enrollment programs that actively recruit and are designed and committed to help traditionally underrepresented students transition successfully from high school to college. The information is presented to provide a **high-level overview of the opportunities and challenges secondary and postsecondary partners might face** as they design and implement these programs. **Indicators and data sources are offered** that partnering school districts and colleges can use to monitor progress at the student, program, and institutional levels.

Why is dual enrollment important for URM populations?

Dual enrollment has become a viable and effective method to prepare any student – even those who may have struggled academically and who may have had no initial interest in pursuing a postsecondary degree or credential – to complete high school and enter college (Community College Research Center [CCRC], 2012; Hoffman & Vargas, 2010; Hughes, Karp, Fermin, & Bailey, 2005; Kim, 2012; Kirst, Venezia, & Nodine, 2009). One pivotal study was conducted by the Community College Research Center (CCRC) involving 3,000 underrepresented minority students (60% students of color, 40% living in non-English speaking households, and nearly 33% first in their families to attend college) who were participating in eight different dual enrollment efforts in California. The goal of this 3-year initiative was to demonstrate "the feasibility of using dual enrollment programs to enhance college and career pathways for low-income youth who [were] struggling academically or who [were] within populations historically underrepresented in higher education" (CCRC, n.d., para. 1). When compared to their district peers, the researchers found that **participating students had higher high school graduation rates, were less likely to take basic skills courses once they enrolled in college, were more likely to attend and persist in college once they completed high school, and were more likely to earn more college credits 1 and 2 years post high school graduation** (Rodríguez, Hughes, & Belfield, 2012).

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[1] For the purposes of this guide, historically underrepresented minority refers to students who have struggled academically and who are low-income, first-generation college goers, male, and/or members of a racial or ethnic group that traditionally has not pursued or successfully completed a postsecondary credential in great numbers.

Other research suggests that programs that actively "recruit middle- and low-achieving student populations that historically have been underrepresented in colleges and universities" (Barnett & Stamm, 2010, p. i) are associated with these positive outcomes, in addition to **on-time high school graduation, more proficient scores on standardized assessments, and less time to degree completion** (Kirst et al., 2009). Students who entered having failed to meet eighth grade proficiency standards still earned 30 college credits and an average college GPA of 2.35 (Kim, 2010). Even after controlling for academic achievement and ability and motivation, a study of New York City's College Now, an intensive and supportive intervention that offers "a connected sequence in which students study progressively more advanced material" (Barnett & Stamm, 2010, p. 4), associated the program with **larger gains in college credit attainment and higher GPAs than similar peers** (Allen & Dadgar, 2012). One study found that dual enrollment students who represent groups that often struggle in college – "low-income, lower achieving, and male students" (CCRC, 2012, p. 4) – had **larger increases in GPA and college enrollment** than "female, high-income, and high-achieving students" (p. 4). Common to all of these programs is comprehensive and structured academic support that assists students – especially those who struggle academically – in their efforts to be prepared to complete college level work.

Who should use this guide and how can it help?

The guide was developed for educational professionals at both the secondary and postsecondary levels – administrators, instructors and teachers, counselors and researchers – with **an interest in increasing equity through the deliberate targeting of underrepresented student populations**. For administrators, policies and qualities of effective partnerships and memoranda of understanding are noted. For teachers and instructors, activities, practices, and structures associated with programs that target, engage, and serve underrepresented students are outlined. For researchers, some indicators and data sources that dual enrollment programs often use to monitor student, program, and institutional level **success** are described.

What does the guide cover?

This guide is informed by interviews and input from dual enrollment practitioners, researchers, and students (see **Appendix A** for a list of contributing experts), as well as an extensive review of available literature. Section II describes the various dual enrollment models and **defining elements of, and strategies and supports employed by, these programs** to recruit, engage, retain, and increase college going and persistence among underrepresented youth. This section will also identify **promising practices** as evidenced by research reports. Section III will provide an **overview of key policies** that make dual enrollment possible in California and a discussion of some challenges often associated with dual enrollment efforts. **Costs and expenditures along with the benefits** of offering dual enrollment will be highlighted in Section IV. The following section, Section V, will outline important and relevant **indicators to monitor and measure student success and program effectiveness**. Approaches and systems that exist for **tracking common indicators and important outcomes** to be monitored by dual enrollment programs will also be presented. Where appropriate, **evidence currently collected** to assess these program practices, including possible methods and standards for evaluating these types of programs, will be explored. Finally, Section VI offers **tools and information** for anyone interested in learning how to design and implement a new or strengthen an existing dual enrollment program for underrepresented students.

Common Elements of and Approaches to Dual Enrollment

What is dual enrollment?[2]

By definition, dual enrollment offers students an **opportunity to complete college-level coursework to earn college credits while they are pursuing their high school diploma** (E. Barnett, personal communication, November 19, 2013; J. Kim, personal communication, November 19, 2013; J. Vargas, personal communication, November 20, 2013). Different models exist (see Table 1) with variations in who teaches the courses (college-approved high school teachers or college instructors), where the programs are offered (on a college campus or at the high school), and who can participate (students who meet certain academic benchmarks [e.g., test scores, number of credits completed, GPA] or anyone who has the desire to enroll in the program; Karp, Hughes, & Cormier, 2012). Some efforts have a career and technical education focus versus solely an academic one, while other programs offer high school and college credit for college courses (Hughes, Rodríguez, Edwards, & Belfield, 2012). In California, the term *concurrent enrollment* is also used to describe dual enrollment programs and in some cases, refers to high school students who are enrolled in college courses that are taught by high school teachers at the high school and/or community college students. It could also refer, although not for purposes of this report, to community college students who take courses at University of California campuses or California State Universities (Golann & Hughes, 2008).

Dual enrollment programs may offer **a range of advantages to students** (Bailey & Karp, 2003; Barnett & Stamm, 2010; Cassidy, Keating, & Young, 2010; Karp et al., 2012; Webb & Mayka, 2011), including:

- A chance to complete high school and college credits at the same time;
- An introduction to and preparation for college life, expectations, and requirements;
- A smoother transition from high school to college;
- The ability to explore various careers and majors before enrolling in college full-time;
- An opportunity to address skill gaps and improve study skills and academic knowledge before becoming a full-time college student;
- Motivation to persist from term-to-term, continue to complete sequential courses, and possibly pursue a postsecondary credential or degree;
- Confidence in one's ability to do college-level work and successfully pursue a postsecondary credential;
- An understanding of the potential economic benefits of a postsecondary education; and
- An accelerated pathway through college that saves students time and money (see Santa Barbara City College, n.d.).

Dual enrollment also provides participating school and college districts with an opportunity to work collaboratively to align secondary and postsecondary coursework so **high school students are better prepared to successfully complete college-level work** (Kirst et al., 2009; J. Vargas, personal communication, November 20, 2013).

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[2] Dual enrollment has traditionally been used to describe opportunities for students who have fulfilled the majority of their high school requirements and who are interested in enrolling in a regular college course. High school teachers who meet the college's minimum teaching qualifications and college instructors can teach these courses, which are usually offered at the college. However, for the purposes of this guide, the term dual enrollment will be used as a more general catchall for programs that allow any high school student to earn college credits.

TABLE 1 | VARIOUS DUAL ENROLLMENT MODELS & KEY COMPONENTS

MODEL	TARGET POPULATION	CORE COMPONENTS	STAFFING	LOCATION
Middle college • 9th through 12th grade • Established in 1974 at LaGuardia Community College in New York	• Targets academically "middle performing" students • Historically, underserved and underrepresented on college campuses • Small enrollments – 100 or fewer students per grade level	• Supportive services • Rigorous academics • Completion of high school diploma and some college credits • College courses count for dual-credit – high school and college credit • No or minimal costs (e.g., college fees) are to be cover by students	• High school teachers who are approved by the community college can teach college credit courses • Community college instructors may teach sections of only dual enrollment students and/or courses where dual enrollment students join regularly matriculated students	Typically on a college campus
Early college[3] • 9th through 12th grade – although some enroll students in 6th through 12th or 11th and 12th grades only	• Historically, underserved and underrepresented on college campuses • Ideal for isolated or rural communities where transportation may be an issue (Webb, 2004) • Small enrollments – 100 or fewer students per grade level	• Supportive services • Rigorous academics • Completion of high school diploma and a sequence of college courses; at least 12 college credits up to an associate's degree or 60 transferable credits within 4 to 5 years • No or minimal costs (e.g., college fees) are to be cover by students	• High school teachers who are approved by the community college can teach college credit courses • Community college instructors may teach sections of only dual enrollment students and/or courses where dual enrollment students join regularly matriculated students	On or near college campus
Gateway to College • Established in 2000 at Portland Community College in Oregon	• Students between 16 and 21 years old who have left or are at risk of leaving high school without a diploma • Low-income, historically underrepresented students and students of color who may have struggled academically	• Supportive services • Rigorous academics • College courses count for dual-credit – high school and college credit • Completion of high school diploma and at least some college credits • No or minimal costs (e.g., college fees) are to be cover by students	• Community college instructors and high school teachers who are approved by the community college can teach college credit courses	Community college

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[3] Early college high schools take the middle college "model a step further by providing a coordinated course of study in which students can earn up to 60 college credits while in high school. Middle colleges and early college high schools have similar design principles; the main difference is the amount of college course work expected—and, therefore, the degree of secondary-postsecondary integration" (Early College Designs, n.d., para. 31). In many cases, *middle college high school* and *early college high school* are often used interchangeably although Middle College High School have traditionally targeted "at-risk high school students who are performing below their academic potential" (http://www.leginfo.ca.gov/cgi-bin/displaycode?section=edc&group=11001-12000&file=11300-11302).

What are the key design elements and characteristics of programs that target URM students?

Across the board, the majority of institutions that offer dual enrollment for students who are traditionally underrepresented students and those who struggle academically report providing the following services to their students: **academic counseling and advisement, tutoring, study skills workshops, and/or student success courses** (E. Barnett, personal communication, November 19, 2013; Hughes et al., 2005; J. Kim, personal communication, November 19, 2013; Marken, Gray, & Lewis, 2013). Others **mention guidance related to the college selection and application process including financial aid** (Hughes et al., 2005). A review of the various dual enrollment program evaluations underscores the importance of **academic rigor and meaningful content coupled with supportive services** (Barnett & Stamm, 2010; Hughes & Edwards, 2012; Kirst et al., 2009). Supportive services are often characterized by supplemental instruction,[4] tutoring, and proactive and prescriptive advising that **connects students to available academic and personal supports based on identified challenges and needs** (Brown, 2010; Tinto, 1993). Others highlight the **importance of creating an environment where students feel validated**, where they are seen as capable and are treated as if they can and will be successful, and where staff and instructors care about them authentically (Booth et al., 2013; Rendón, 1994).

> *"A best practice is having a really strong relationship with our partner college…both institutions [school and college] have a strong vested interest in the success of the program."*
>
> *(A. Moore, personal communication, February 28, 2014)*

Sections 2a through 2d that follow provide a high-level **overview of the common elements, approaches, and strategies among programs** in their efforts to recruit, engage, and graduate underrepresented **students** in the areas of secondary-postsecondary partnership, student recruitment and selection, support services, course design, and evaluation/research.

2a. Secondary-Postsecondary Partnership Development

Partnership is a necessary component of any effort involving two distinct systems that are working together to develop processes and protocols that smooth the transition between the two. Partners often include those working with each organization and those external to the organization who can support the program's efforts. Often for programs serving URM students, dual enrollment is an **opportunity to address academic achievement gaps and issues of equity and diversity for all involved**. Table 2a presents key elements of partnership development.

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[4] Supplemental instruction often involves enrolling students in companion classes where they receive additional academic support, lab sessions, or other learning supports (Edgecombe, 2011). Typically used for "high-risk courses" with low success rates and may include peer-to-peer study sessions (The International Center for Supplemental Instruction, n.d.).

TABLE 2A | PARTNERSHIP DEVELOPMENT

PRACTICES, APPROACHES AND STRATEGIES	DESCRIPTION
School-college partnership	Collaborative partnership between designated program leaders and champions within the school district and at the participating college supported by a Memorandum of Understanding (MOU) that is flexible enough to meet the needs of the community being served and underscores key details such as course alignment, space allocations, resource expenditures, etc.; there is no one size fits all approach or template for the partnership agreement.
Parent-caregiver-supporter partnerships	Regular parent/supporter meetings (e.g., monthly school site council meetings) and communications (e.g., calendar of events and due dates for progress reports) help students' supporters partner with the program staff to help students stay focused on their academic goals while having a platform to offer input and feedback to inform key program decisions.
Community based non-profit partners	Local non-profits and community-based organizations are key recruitment sources and potential providers of additional services (e.g., enrichment activities, personal support, mental health and physical health services, career preparation and job placement) that the program may not be able to provide given funding and staffing limitations.

The directors that were interviewed often mentioned the importance of a collaborative, supportive, and cooperative relationship between the secondary and postsecondary partners to successful plan and implement a dual enrollment program. These partnerships are usually borne out of a strong desire to serve at-risk students and are maintained and supported by open lines of communication and regular meetings. The identification of key point people representing both partners is critical to address changes and challenges and to take advantage of opportunities as they present themselves, such as redesigning curriculum in light of new common core standards. Instructors and teachers are often part of conversations to design, implement, and monitor the program to ensure ongoing buy-in for, awareness of, understanding of, and support for the program's goals and objectives. Advisory boards composed of administrators, instructors and teachers, staff, as well as parents and representatives from non-profit partners help to support student recruitment, inform program design by offering input and feedback on key strategies and approaches, and set and monitor key outcomes.

"The enrollment and success of this target student population requires a structured outreach and marketing plan to inform potential students and referral sources of enrollment opportunities."

(J. Marks, personal communication, January 6, 2014)

2b. Student Recruitment & Selection

Multiple measures and varied approaches and outreach strategies are necessary to reach students who may have little or no experience with or knowledge of postsecondary education. Careful **consideration should be given to the messages and processes used to engage, attract, and select potential students and the initial activities at the point of enrollment**. Table 2b highlights various activities and approaches to student recruitment and selection.

TABLE 2B | STUDENT RECRUITMENT AND SELECTION

PRACTICES, APPROACHES AND STRATEGIES	DESCRIPTION
Targeted recruitment	Identify students who may be struggling academically or who are historically underrepresented on college campuses. Outreach to them and their caregivers to inform them about the advantages and opportunities afforded by dual enrollment, incorporate strategies where peers serve as recruiters, and provide information to counselors at feeder schools and non-profits serving target populations about the programs and selection requirements.
Student interviews	Staff or a panel of relevant stakeholders such as parents, administrators, staff, instructors and teachers, counselors, current students, and program graduates interview students to explore and assess their motivation to succeed and interest in and commitment to program expectations and goals. Students' responses along with students' completed applications and academic records often inform the selection process.
Student selection	Use of multiple measures (e.g., test scores, GPA, student essays, attendance history, disciplinary reports, metacognition [study skills, organization, help seeking behavior], interest in and motivation to participate in dual enrollment) and checklists and rubrics that provide clear criteria on how best to rate and rank students' applications as part of the selection process. Attention to some of the following factors to help to ensure a diverse group of students: socioeconomic status (Free/Reduced Price Lunch eligibility), academic successes, race/ethnicity, and gender. Students and parents should be aware of and understand how readiness is defined and how students can and should prepare to be successful.

Directors employed a variety of approaches to recruit and reach out to students, including open houses for potential students and their parents and caregivers held on the school campus; advertising on relevant websites, on the radio, and in various print media; performing outreach to administrators and counselors at feeder schools; and presenting to non-profit partners that serve the target population. Key messages that seemed to resonate with students included the opportunity to complete up to 2 years of college at no cost, the smaller classes and cohort or learning community model, and the dedicated counseling and the supplemental support they would receive to prepare them for academic success.

"[Dual enrollment programs] work with cohorts of students. They try to change the educational environment and school linked culture so this is not just an opportunity for those who are college ready…support systems are put in place to get [all students] up to speed in their high school and college prep work, and once they enter into college courses surrounding them with support."

(J. Vargas, personal communication, November 20, 2013)

2c. Support Services

Dual enrollment provides an **opportunity for students to "try out" college** (Hoffman & Vargas, 2010, p. 13) and learn the benefits of postsecondary credentials and degrees while gaining confidence and knowledge needed to successfully master college work and understand its connection to helping them realize their long-term life goals. Given that many dual enrollment students from underrepresented student populations or who are first-generational college goers need support to prepare academically and socially, many programs provide a comprehensive set of support services to ensure that students are successful. Table 2c highlights different types of support services.

TABLE 2C | SUPPORT SERVICES

PRACTICES, APPROACHES AND STRATEGIES	DESCRIPTION
Orientation (Commitment Activities)	Community building activities prior to the start of classes to promote supportive relationships between new and continuing students, staff, and instructors. Focus informing students about program expectations, requirements and structure, approaches, and strategies.
Academic advisement	Course scheduling and educational planning that are linked to students' interests and long-term career and/or education goals and involve connecting students to needed and available tutoring and other forms of academic support; requires a small counselor-to-student ratio.
Personal counseling	Advisement and guidance that helps students address non-academic challenges that could interfere with their ability to focus on their academic pursuits.
Bridge or academic 'boot camps'	Short-term courses usually offered before the start of the semester geared towards helping students improve their academic skills while acclimating students to the social aspects of being a college student, helping them navigate available resources, and introducing them to the pace of the work and the habits and behaviors necessary to be successful.
Supplemental instruction or labs	Advisory seminar[5] led by high school teacher or counselor with support from tutors that focuses on helping students with study skills, navigating available resources, and completing homework and assignments; can parallel a course like a lab.
Student success course	Courses specifically designed to help students learn how to navigate college, hone study skills, manage their time, access available academic and financial resources, and explore career and educational options.
Early warning/alert system	Process and system to monitor students' behavior (e.g., absences, tardiness, classroom behavior) and academic progress and provide additional personal and/or academic support and remediation throughout the term at points when students are struggling and not on track to complete courses successfully.
Transportation	Public transportation fare or travel to and from the campus.

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[5] Advisories often entail structured, regular meetings with a small group of students and a teacher or administrator with a focus on promoting peer-to-peer support and the honing of academic and metacognitive skills associated with educational success such goal setting, time management, and problem solving (Educators for Social Responsibility, n.d.).

First and foremost, directors who were interviewed stressed the **importance of providing individualized student support in a safe environment**. Cohorts or learning communities that allowed a small group of students to build strong relationships with everyone including staff, administrators, instructors/teachers, and peers were key to students' success. A dedicated counselor at both the high school and/or college who was responsible for helping students with everything from education planning to tutoring to personal and familial challenges was an important and necessary part of every dual enrollment team.

> *"Common core and the transition to common core and what does that mean…we have a very set curriculum…very mapped out [high school and college requirements]…with common core coming in we have to look at …realignment of our curriculum."*
>
> *(S. Sanchez, personal communication, March 3, 2014)*

2d. Course Design

Dual enrollment can be **designed to prepare students to complete high school and to understand and meet college-level expectations** both academically and socially. A variety of course structures and approaches are used to **offer relevant experiences that help students realize their strengths, address any deficits, and prepare for college, and learn to navigate the postsecondary environment**. Some programs are organized around a theme, career pathway, or field of study and focus on ways to integrate real hands-on and applied learning. Others offer a sequence of courses that help students meet general education requirements. Another course characteristic is whether students will take classes with other dual enrollment students or the general college population. Some research has found that a mixed enrollment model where dual enrollment students attend classes with the general population of college students is associated with greater maturity among dual enrollment students and offers a more authentic college experience (Edwards, Hughes, & Weisberg, 2011). In fact, some research suggests that positive academic outcomes occur for only those students who complete courses offered on the college campus (Speroni, 2011). Table 2d outlines some design features common to programs that are working with traditionally underrepresented groups.

TABLE 2D | COURSE DESIGN

PRACTICES, APPROACHES AND STRATEGIES	DESCRIPTION
Rigorous, scaffolded, and sequenced set of authentic college-level coursework	Commitment to and process for monitoring and ensuring that students that are offered a sequence of scaffolded college-level courses that may include developmental college coursework regardless of whether courses are taught by high school teachers or college instructors or whether courses are offered at the high school or on the college campus (Lowe, 2010; National Alliance of Concurrent Enrollment Partnerships, n.d.). Attention paid to starter courses that students should take to successfully on-ramp to college (e.g., computer skills, student success courses).
Advisories	Use of advisories (e.g., AVID)[6] or small cohorts to create a small school feeling; allow students to develop meaningful relationships with adults and peers; relationships and personalization allows for immediate intervention and ongoing, timely support.
Mapping high school and college coursework	Identify college coursework that meets high school graduation requirements.

One director stressed that **courses be mapped along a defined pathway** so that students were clear as to how courses aligned to both secondary and postsecondary requirements. The goal should be to ensure that students have earned or are planning to continue to pursue a postsecondary credential after completing their high school graduation requirements. Directors spoke about the importance of educational plans, including courses that allowed students to explore potential career and educational interests while addressing skill or knowledge deficits. Courses that provided contextualized content helped make learning relevant and engaging so that students were more likely to complete and persist.

"…Reports generated from [key] databases are integrated into weekly office team reports, monthly presentations to [our] board of directors, quarterly reports to [our] national office] and [the county office of education] and also selective information is shared with partnering agencies, parents, community organizations…"

(J. Marks, personal communication, January 6, 2014)

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[6] AVID stands for Advancement Via Individual Determination and "is a college readiness system for elementary through higher education that is designed to increase school wide learning and performance" (AVID, n.d., para. 1).

Dual Enrollment-Related Policy Supports and Challenges

What makes dual enrollment possible in California?

The California Education code includes **a number of provisions that allow secondary and postsecondary institutions to partner to offer a variety of options for the state's high school students to take college-level courses**. However, these codes do impose a **number of limits and restrictions[7]** on how these programs operate, including which students and institutions can participate, the number of students that can participate, the number of minutes in the program's school day, the types and number of credits students can earn each term, and when these credits will be awarded (e.g., after course completion or when one has matriculated at postsecondary institution), who can teach courses, and which partner is responsible for the payment of fees and types of funding available (Barnett & Stamm, 2010).

Waivers to education code requirements allow dual enrollment programs to make **exceptions to the normally mandated requirements**. For example, state regulations allow postsecondary partners to:

- Determine whether to waive or collect fees for dual enrollment students,
- Receive full-time equivalent student (FTES) funding for courses that are advertised and open to the public,
- Limit access to ensure that high school students' enrollment in college courses does not reduce access for non-dual enrollment students,
- Outline eligibility criteria for students who can participate, and
- Require permission from students' parents and approval from the high school principal (Edwards & Hughes, 2011).

For high school sites or secondary partners, regulations:

- Stipulate the length of the school day,
- Limit the number of college credits a student can earn per semester (capped at 11 units),
- Limit the percentage of students that can be enrolled at any one time, and

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[7] For more information about California legislation related to dual enrollment, visit the Resources Shortcut on the California Community Colleges Chancellor's Middle College High School webpage at http://extranet.cccco.edu/Divisions/AcademicAffairs/CurriculumandInstructionUnit/MiddleCollegeHighSchool.aspx.

- Determine the average daily attendance or Average Daily Attendance (ADA)[8] calculations and reimbursement (Edwards & Hughes, 2011; Goldberger & Haynes, 2005; Stewart, 2014).

In addition to the state policies, local policies often exist; these policies may stipulate additional requirements. For example, some districts may limit when high school students can take college courses. Additionally, the postsecondary institute may impose eligibility criteria outlining which students can participate in dual enrollment opportunities (Edwards & Hughes, 2011).

A review of 10 common dual enrollment-focused policies across 50 states provides a glimpse of the "implications of state policy for individual programs and students, and the ways that policies can promote or inhibit the spread of dual enrollment programs" (Karp, Bailey, Hughes, & Fermin, 2005, p. 1). At the time this policy review was completed, only 10 states had no legislation in place regarding dual enrollment and none of the remaining 40 addressed all examined policy features, including mandates on whether students are informed about dual enrollment opportunities, whether

> *"Our biggest barrier is the cost of textbooks."*
>
> *(S. Balian, personal communication, February 18, 2014)*

postsecondary institutions must accept dual enrollment credits, the target population (high achieving or low- or middle achievers, location of courses (at the high school or at the college), student mix (whether students take courses with regular college students or fellow high school students), and funding. In California, mandatory policies exist to ensure all students are informed about these enrichment programs, but **secondary institutions have the discretion to set the academic requirements for program admission** that could be offered at the high school or partnering postsecondary institution, although the college must approve the course content (Karp et al., 2005). **Appendix B** provides a snapshot of California policies that have supported and advanced dual enrollment efforts in the state.

What are some common challenges to offering dual enrollment in California?

Dual enrollment programs require partners from two separate educational segments to work collaboratively to advance multiple agendas: students' high school completion, students' college readiness, and students' transition to college. Among those who were interviewed for this guide, the following struggles related to program design and implementation and policy regulations were noted as some of the top challenges to dual enrollment efforts that are focused on serving historically underrepresented students. Directors' key concerns are noted along with strategies to address these needs and potentially mitigate these barriers.

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[8] Average Daily Attendance or ADA is "the total number of days of student attendance divided by the total number of days in the regular school year. A student attending every day would equal one ADA" (Ed-Data, n.d., para. 8).

Program Design and Implementation

At the program level, the directors voiced concerns about identifying the financial resources necessary to cover the costs of various program activities and resources needed to fully support dually enrolled URM students' college success.

▶ *Insufficient funding*

The challenge: Dual enrollment programs that serve URM students are required to offer high school courses along with a comprehensive set of wraparound supplemental academic supports and follow-up services to ensure that all students are prepared to succeed in their college courses. Existing funding streams may not cover needed additional supports and services.

> *The opportunity:* In states like California with strong legislation that support dual enrollment efforts, secondary and postsecondary partnerships can help to share the costs of additional supports and services for students who may need help to successfully on-ramp to and navigate the college environment.

> *A solution:* Some programs place high school students in regular college classes that might have otherwise been cancelled due to low enrollment. These enrollments allow the college to avoid cancelling course sections while providing students who are ready to complete college-level work with access to resources and academic support and enrichment activities available on the college campus. As a result, participating high schools are able to direct more attention and resources to students who may need additional support to complete their high school requirements and/or prepare to take college classes.

The challenge: Costs associated with instruction and advising often leave programs with little money to cover the full costs of textbooks, offer enrichment activities and elective courses, and provide transportation assistance.

> *The opportunity:* College textbook costs are still so high that some programs seek grants to cover the purchase of various academic resources.

> *A solution:* Many programs require that students return books so that they can be loaned to other students in following semesters. Teachers and instructors are also exploring how to incorporate Open Educational Resources (i.e., free digital materials that exist in the public domain that can be used and shared openly for research and teaching purposes) as way to make information more accessible for all students.[9]

▶ *Defining, promoting and ensuring college readiness*

The challenge: Many URM students may need additional support to become academically and socially prepared to be college ready. Students who may not come from a tradition of college going and who may have struggled in school need special preparation to be academically and affectively prepared to transition successfully into college.

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[9] For more information about Open Educational Resources, visit http://oerconsortium.org/about/.

The opportunity: Dual enrollment programs can introduce the rigors of college while providing the necessary supports to help students make a smooth transition to being full-time college students. Some programs also assess students' readiness using standardized tools. David Conley's Four Keys to College and Career Readiness is one example of an assessment tool that can be used to determine whether students are ready to make the transition to being full-time college students (Baber, Castro, & Bragg, 2010; Conley, 2007, 2013; Edmunds, 2012; Muze, 2013; Struhl & Vargas, 2012).

A solution: Many successful programs offer instructional scaffolding: temporary academic supports such as extra credit opportunities for a particular course or accelerated or scaffolded course sequencing along with supplemental instruction (Hughes & Edwards, 2012) to give students who test at a pre-collegiate level an opportunity to strengthen and improve both academic and affective knowledge and skills so they are college ready by the time they fully transition to college.

Policies and Regulations

Partnerships that support dual enrollment efforts are often subject to various regulations and policies that regulate everything from student eligibility, to program structure, to reporting requirements.

▶ *Managing and balancing both secondary and postsecondary requirements*

The challenge: Dual enrollment programs are responsible for and required to meet the reporting requirements and achievement and performance standards at the local, district, state, and federal levels and teacher and instructor credentialing requirements of both the K-12 system and the participating community college (J. Marks, personal communication, January 6, 2014). As a result, programs must often balance managing two different academic calendars, mandated standardized testing dates that may conflict with the community college's scheduled midterm and final exams, curriculum review, and hiring processes that limit flexibility to adapt quickly to address identified needs and take advantage of unexpected opportunities and financial requirements that limit how funds can be used to support key strategies and activities.

> *The opportunity:* Many dual enrollment programs require that colleges and their feeder high schools collaborate to outline articulation processes and identify approaches and strategies that provide students with access to college-level coursework.

> *The solution:* A detailed agreement between the participating secondary and postsecondary partners (Edwards & Hughes, 2011) can help to ease the burden of the myriad requirements by clearly outlining the responsibilities for instruction and the credential requirements for instructors, access to available resources, alignment and articulation between high school and college courses, costs who will be responsible for paying for tuition and various expenses , and liability concerns (M. Webb, personal communication, November 18, 2013).

In spite of these challenges, directors and partners underscored how an environment of high expectations and continuous, proactive support to help students address personal, social, and academic challenges as well as external stressors and barriers made academic success for all students possible. These directors and partners believe that any student, regardless of his/her previous test scores or entering GPA, can excel in a dual enrollment program. As long as students are motivated, directors

stressed how dual enrollment programs' small, safe, and supportive environment helped to create a culture of accountability where students stay motivated to work hard and take advantage of available help to realize their academic goals *and* to support their peers in the process. When talking about their programs, directors who agreed to be interviewed spontaneously shared that "this model just works," it "truly meets the needs of [our students]," describing it as "an alternative form of educating students," and asserting, "students feel that they are treated as adults and respond well to the academic and behavioral expectations of the college environment."

Costs and Expenditures

How much will it cost to offer dual enrollment and is it worth the effort?

Much of the research on dual enrollment costs comes from studies of the Early College High School (ECHS) program, one of the models of dual enrollment highlighted in Table 1. A national study of the ECHS model found that despite revenue from ADA, FTES, grants, tuition reductions, federal entitlements aid (such as Title I[10] and Title V[11]), and in-kind support from participating school districts and college partners, "the estimated gap between projected revenues and costs, including the start-up, planning, and full implementation phases [of the ECHS dual enrollment model], ranges from 4.5 percent to 12 percent" (Webb, 2004, p. 2).[12] An extensive analysis of dual enrollment costs in California suggests that **key initial start-up and ongoing implementation costs are anywhere from 10-20% higher than the ADA rate of participating district high schools** (Kirst et al., 2009). However, how much one's program will cost to design, implement, and monitor will be based on whether one's program is designed to offer students opportunities to take one or two college courses or whether one is building a facility on or near a college campus.

Regardless of the model, start-up costs that are likely to be common to many dual enrollment models are related to:

- Faculty and teachers collaborating on academic calendars, along with curriculum design, alignment, and sequencing to ensure general education and career requirements are met.
- Outreach and recruitment strategies.
- Supplemental personal and academic support at both the high school and college.
- Textbooks and supplies.
- A system and process for data collection focused on both student and program improvement (Hoffman & Vargas, 2010; Kirst et al., 2009).

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[10] Title I is a part of the federal Elementary and Secondary Educational Act of 1965 focused on improving educational outcomes – at minimum proficient scores on standardized tests and academic standards – for the *disadvantaged* – students from low-income families. Funding is targeted to schools with high percentages of targeted students and supports a variety of efforts to increase these students educational outcomes such as the alignment of curriculum and testing with state standards, assessment of the needs of students who often struggle academically, reform efforts to strengthen the quality of instruction and strategies and approaches to increase parent involvement (U.S. Department of Education, 2004a).

[11] Title V is also a part of the Elementary and Secondary Educational Act of 1965 and provides resources to support local reform efforts that mirror state strategies to better support all students especially those who are special, high need or at risk with some focus on school, district and teacher performance (U.S. Department of Education, 2004b).

[12] For an example of estimates of common expenses associated with the funding of different ECHS models from program planning to start up and implementation, see Webb, 2004.

As you consider program costs, outline the expenses associated with each of these key activities and resources and determine how many students you will serve and how many courses they each may take to calculate your budget (see Goldberger & Haynes, 2005, p. 9).

Although additional expenses may be associated with starting a dual enrollment program, savings may be gained from:

- **Including college courses as part of a program of study for high school students**. This approach may allow additional resources for the high school to maintain small class sizes and additional funding for summer coursework. Placing students in college courses is often cheaper than offering similar classes at the high school even when considering the costs associated with having high school administrators arrange for students to enroll in these courses (Goldberger & Haynes, 2005).
- **Offering classes that count for high school and college credit**. Not only do students save money by talking some of their college courses at no cost while in high school, but also the high school is able to offer fewer courses. Classes that count for both high school and college credit save the high school money that can be used to support supplemental instruction, basic skills coursework, wraparound services, and bridge programming (Hoffman & Vargas, 2010).
- **Identifying high school teachers that are also designated as adjunct college faculty**. Employing teachers who can teach both high school and college courses is an efficient way to bring college to students with no transportation costs. Attention should be paid to ensure that the courses offered are just as rigorous as the same classes being offered on the college campus and are being taught by college instructors (Hoffman & Vargas, 2010).
- **Engaging community college instructors to teach courses**. Offering stipends to college instructors to teach courses solely for dual enrollment students at the high school or on the college campus is often cheaper than paying for tuition and fees per student (Hoffman & Vargas, 2010).

"It takes three things to become a [dual enrollment program] student…be someone, go somewhere, and seek excellence. Be someone represents competence…to make it through those four years and to be able to do all the hard work that is required…Go somewhere is really about courage, to go out of your shell…and begin that early process of becoming an adult, and the last one, seek excellence, is about determination…you are going to become someone else…no matter what obstacles you are going to get through it…you're going to get back up and find a way to be successful."

(Middle College High School Student, personal communication, February 28, 2014)

"[Students] entering into college not needing any remediation, period…This should be the gold standard [for dual enrollment]."

(M. Webb, personal communication, November 18, 2013)

Other research suggests that additional program costs, if they exist, **would be recouped by an increase**

in the numbers of dual enrollment students who were unlikely to go to college, but are now able to advance from high school into college-level coursework *without* remediation and earn a postsecondary credential (Webb, 2004). One estimate suggests $1,662 in savings for each student in California that earns an associate's degree and $9,178 in savings for those that are awarded a bachelor's degree (Kirst et al., 2009). Fortunately, California community college costs are relatively low (Kirst et al., 2009) and state policy allows public high school students taking college courses to be "counted in the same way as matriculated college students for funding purposes" (Hughes et al., 2005, p. 65), allowing colleges to collect FTES reimbursement[13] while the school district is compensated for each student if he/she is enrolled in high school for at least 180 minutes per day (Hughes et al., 2005). Some programs often **leverage other funding streams** such as TRIO[14] and Title I to support their efforts (Hoffman & Vargas, 2010). By increasing the number of students who graduate from high school, dual enrollment is likely to decrease students' involvement in the criminal justice system, given the connection between high school dropout and criminal activity. In California, the state spends $8,482 per student (Fensterwald, 2013) versus $47,421 per year per inmate (Vera Institute of Justice, 2012).

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[13] Full-time equivalent students (FTES) is a formula based on enrollment numbers to determine how much a college should receive for each student. In California, community colleges receive slightly less than $5,000 in state funding per student (http://californiacommunitycolleges.cccco.edu/PolicyInAction/KeyFacts.aspx).

[14] "The Federal TRIO Programs (TRIO) are Federal outreach and student services programs designed to identify and provide services for individuals from disadvantaged backgrounds. TRIO includes eight programs targeted to serve and assist low-income individuals, first-generation college students, and individuals with disabilities to progress through the academic pipeline from middle school to post-baccalaureate programs" (U.S. Department of Education, n.d., para. 1).

Indicators and Measures of Student Success and Program Effectiveness

What are common indicators of success and how can they be monitored?

Dual enrollment programs balance both secondary and postsecondary systems and as a result must collect information that examines students' high school and college progression, requiring the involvement of researchers at both the school district and college. Although student success is one of the most necessary and important outcomes to monitor, **programs could benefit from examining institutional and program outcomes as well**. Various standards have been offered to determine and ensure dual enrollment program quality most commonly in the following areas: **partnership among school, district, and college; curriculum and course design;** and **faculty and student experience**.

Dr. Elisabeth Barnett at the National Center for Restructuring Education, Schools and Teaching (NCREST) has compiled a starting point of **data sources that highlight resources for monitoring and tracking key program and student characteristics** at national, state, county, district, and school levels (E. Barnett, personal communication, November 19, 2013). Based on Dr. Barnett's research and recommendations, Table 3 provides samples of **key research questions and what data resources exist to explore these questions**.

TABLE 3 | SAMPLE RESEARCH QUESTIONS AND DATA RESOURCES

SAMPLE DATA QUESTION	DATA RESOURCE	LEVEL OF REPORTING
What are student demographic characteristics?	• California Basic Educational Data System (http://www.cde.ca.gov/ds/dc/cb/) – annually updated information on a number of student indicators (course enrollment and completion, drop-out and graduation rates) • Ed-Data (Educational Data Partnerships) (http://www.ed-data.k12.ca.us/profile.asp?level=06&reportNumber=16&fyr=current) – endorsed by the California Department of Education, provides demographic profiles and comparison data for schools and districts • California Community Colleges Chancellor's Office (http://datamart.cccco.edu/DataMart.aspx) – searchable, query-based data system to explore district, college, and student level data including demographics, FTES, financial aid take up, and staffing	• State • School • District • County
Are students prepared for postsecondary work?	• California Department of Education (http://www.cde.ca.gov/ta/) – high school standardized test scores • California Community Colleges Chancellor's Office (http://datamart.cccco.edu/DataMart.aspx) – see above	• School

SAMPLE DATA QUESTION	DATA RESOURCE	LEVEL OF REPORTING
Are students being successful when compared to their peers?	• School or district data systems • California Longitudinal Pupil Achievement Data System (CALPADS) – tracks individual student enrollment and success across systems and time (http://www.cde.ca.gov/ds/sp/cl/) • California Community College Chancellor's Office Score Card (http://scorecard.cccco.edu/scorecard.aspx) – examines students' demographics, persistence, completion, and remedial and CTE involvement at CA's 112 community colleges	• School/ program • Community College
How does my school compare to schools serving similar groups of students?	• School or district data systems • Education Results Partnerships (www.edresults.org) – includes schools or district performance data • California Community College Chancellor's Office Score card – (http://scorecard.cccco.edu/scorecard.aspx) – see above • Western Association of Schools and Colleges (WASC) Standards – (http://www.wascsenior.org/resources/handbook-accreditation-2013)	• School • District • Community College

Subsequently, we offer **a snapshot of potential indicators that are associated with success at three different levels** – *student, program,* and *institution.*

> *"We find that all of our students [regardless of GPA upon program entry] rise to the occasion and expectations of excellence and we get amazing results."*
>
> (Moore, personal communication, February 28, 2014)

Student-level outcomes

Indicators that monitor students' **academic skill, knowledge, and engagement prior to, during, and after program involvement when compared to their district peers** are commonly tracked. To ensure that underrepresented students are being reached, recruited, selected, and successful, many programs will examine a variety of demographic characteristics (e.g., free and reduced lunch eligibility as a proxy for income), eighth grade test scores and assessments, GPA, and attendance, in addition to common academic progress measures such as persistence, retention, and, ultimately, completion of high school graduation requirements. Collection of demographic data allows comparisons to be made to similar groups of students who are not in the program and to **examine whether certain subgroups of students are more likely to be successful or struggle when compared to similar peers**. This type of information is invaluable when making decisions about program design and implementation. Successful programs **gather input from students and monitor student outcomes regularly in order** to make any necessary improvements to program structure, curriculum, and supports to better serve students. The table in **Appendix C** offers sample indicators of student-level successes and progress common to dual enrollment programs serving URM students.

Program-level outcomes

At the program level, Dr. Michael Webb outlined a matrix of evidence to explore the level of implementation of a number of program design elements from program autonomy, student enrollment, location, secondary and postsecondary collaboration, academic plans, teachers'/instructors' qualifications and curriculum, ongoing student support, financing, student transfer and transition options, and research and evaluation efforts. According to his rubric, programs with **high levels of implementation are located on a college campus with a formal agreement outlining primary responsibilities for both partners related to instruction, tuition, and access to college resources while employing lottery-based selection strategies** to ensure the enrollment of a broad student base. Strong programs often employ a *cohort model* with structured supplemental support for college courses taught by credentialed high school adjuncts or community college faculty. To monitor their progress, these programs also **conduct ongoing tracking of individual and aggregated student outcomes,** including term-to-term persistence, progress towards the high school diploma, college credits earned, completion of high school and college courses, and high school graduation. **Appendix D** offers sample program-level indicators of progress and success and potential data sources.

"[Dual enrollment offers] [h]uge benefits to the college…they can improve the success rate exponentially…they can decrease the number of [students] who need remediation, they can build a pipeline…half of students need remediation…if a college can cut this number down, this is to their advantage."

(M. Webb, personal communication, November 18, 2013)

What would traditionally underrepresented students say are the defining components of a success program?

Given the scope and scale of this research project, we were able to interview a small number of dual enrollment students to gather their perspectives on what makes a program successful. The researchers and directors we interviewed were also asked to consider what dual enrollment students might report. The students, directors, and researchers all spoke about the importance of students having **positive and supportive relationships with their peers, instructors, teachers, counselors, and staff; a variety of academic offerings and the personalized support and guidance offered;** and **challenging, rigorous, and interesting coursework.** Several directors and principals also underscored **the importance of adults – from counselors to instructors to staff – who were constantly supportive and positive about students' ability to be successful and who expressed confidence in students' ability to master college and college-level work**. These themes of *unconditional and ongoing support* and a focus on students' success mirror the findings of the Research and Planning Group for California Community College's *Student Support (Re)defined* project, where students emphasized how being nurtured – feeling somebody wanted and helped them to succeed – was linked to their self-reports of feeling directed, focused, and engaged in their learning (Booth et al., 2013). When we asked the researchers and the students what they might **suggest to improve these programs**, they mentioned **expanded extracurricular and academic enrichment activities, access to physical education and sports, afterschool activities, student clubs and government or advisory councils, and field trips.**

Institutional-level outcomes

Dual enrollment programs offer a number of advantages to the participating colleges by ideally creating a recruitment pipeline of college-ready students – especially among a group who may have been unlikely to pursue a college education – who are more likely to persist and successfully complete a postsecondary degree or credential without any delays resulting from the need to complete development coursework (Barnett & Stamm, 2010). These partnerships require a true commitment of senior administrators at both institutions along with a key contact person who is responsible for managing the various systems and requirements. Kinnick (2012) offered three **indicators of program quality to examine the effects of dual enrollment on the institution**. First is the "recruitment of high achieving students, through enhanced of classroom environment and through the positive impact on the image of the university as a school of choice" (p. 42). A second and related institutional indicator is how the program helps the secondary and postsecondary institutions meet productivity benchmarks such as student persistence, retention and completion goals. Research highlighted previously provides evidence that dual enrollment programs can help all educational partners realize key student outcomes that are related to both high school and college completion. Finally, the viability of the program, given demand and funding requirements and resources, is another important indicator to monitor. Some research suggests that community college partners see positive enrollment and revenues, although the same positive effects may not hold for 4-year institutional partners (Mokher & McLendon, 2009). Other researchers have examined program design and structure; administrative practices; staffing structures and credentialing; professional development opportunities; curriculum and course content and sequencing; assessments and measures of success and academic readiness, academic supports, scheduling, and funding streams (Barnett & Kim, 2013; Hoffman & Vargas, 2010; Hughes et al., 2005; Kim, 2012). **Appendix E** offers sample indicators of *institutional* level successes and progress for dual enrollment.

How can data collection and monitoring be strengthened?

In a partnership, the various organizations often require different information and data that are stored and managed using different systems and collected and disseminated following different timelines. While looking for ways to streamline information and data requirements across systems, directors spoke of the **importance of assigning and working with a key contact person who was responsible for helping them to access, analyze, and prepare mandated reports** while using data on an ongoing basis to inform program design, activities, and policies. Also, directors benefited from data systems that allowed them to access information and reports easily without the assistance of third parties or someone with extensive research training. Their ability to monitor student, program, and institutional outcomes was enhanced by having regular and as-needed access to available data. Finally, directors underscored the importance of being able to *tag* dual enrollment students in the various data systems to allow their data and information to be analyzed separately from and to be compared to non-dual enrollment students in order to highlight any similarities and/or differences.

Conclusion

Dual enrollment offers an opportunity to address many issues that affect college access and success for underrepresented minority students. First, the model helps to identify and recruit students who may be at risk of leaving high school or who feel uncertain about, unprepared for, or even unaware of the benefits associated with pursuing a postsecondary credential. Second, these students are given an opportunity to test out and become more academically and affectively prepared for and confident in their ability to master the college environment. Third, students are often more engaged and motivated to take personal responsibility and to be accountable for meeting program expectations and requirements, since there is often a clearer link between their academic performance and long-term goals. Finally, the small and supportive environment that often defines these programs allows any student, regardless of his/her previous scores and grades, to rise to the occasion and succeed in earning a high school diploma and starting his/her postsecondary journey.

In spite of the challenges and costs associated with offering dual enrollment, directors, researchers and students remain enthusiastic about how much this model has to offer and the critical role it can play in improving high school and college graduation rates not just for URM students, but all students. Regardless of their previous educational history before program entry, URM students participating in dual enrollment programs excel on many academic outcomes such as GPA, course completion, high school and college graduation rates, and college readiness when compared to similar non-dual enrollment peers. By nature, the collaborative partnerships that these programs require also help to smooth the transition between high school and college, especially for first-generation college goers. Our hope is that this guide will inspire more partnerships to be launched to ensure more diversity on college campuses and equity in high school and college achievement. Dual enrollment is uniquely designed to help more students prepare for and realize that they too could benefit from and succeed in the college environment and that completion of their high school diploma and the successful pursuit of a postsecondary degree or credential is not out of their reach.

Discussion Questions

The following questions are designed to spark discussions to help you consider important program elements, whether you are designing and planning to launch a new dual enrollment program or identifying ways to strengthen an existing program (Barnett, Bucceri, Hindo, & Kim, 2011; Edwards & Haynes, 2011).

Question 1: Who can partner with us to advance our dual enrollment program?
Consider partners that already offer dual enrollment opportunities, provide career pathway programs, and are looking to bridge the transition between high school and college for URM students in their feeder schools.

Question 2: What regulations exist that will support or hinder your efforts?
Understand what legislation and local policies might advance your ability to recruit, enroll, and retain students and influence how your program is designed and structured.

Question 3: What students will you serve?
Highlight implications for key outreach and recruitment-focused messages and approaches as well as program and support structures.

Question 4: What blend of high school and college courses will students take and where?
Explore how the high school experience can be enhanced and strengthened by offering students the opportunity to complete a sequenced set of college-level courses while they are completing their high school requirements and whether courses will be offered at the high school or college.

Question 5: How will we get students ready to begin college coursework?
Strategize about how best to structure academic, personal, and social support and guidance needed for URM students to succeed in their studies.

Question 6: How will you support students in their college classes?
Underscore the different types and level of support that students may need to complete their college coursework successfully.

Question 7: How will you find and support the right faculty?
Decide on the most relevant experiences, expertise, and personality traits of potential instructors and outline a plan for how best to support them in engaging and teaching your students.

Question 8: What does high school-college collaboration really mean?
Focus on the relationship between the secondary and post-secondary partners and the various roles each will and should play in smoothing the transition between high school and college for students.

Question 9: How do you obtain and keep sustainable funding?
Create a budget that outlines program costs associated with key activities and identify various funding sources and how their funding priorities can support various program elements (Goldberger & Haynes, 2011, p. 9).

Question 10: How will you know if you are succeeding?
Identify key outcomes and related indicators to monitor progress toward key program goals.

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APPENDIX A

Researchers and experts interviewed for this guide

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Dean of Economic & Workforce Development
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California Education Codes and State Active Legislation Influencing Dual Enrollment

Sources: California Community College Chancellor's Office, n.d.; California Legislative Information, 2006; Golann & Hughes, 2008; Hollem, Wintermeyer, & Vega, 1996; V. Stewart, personal communication, March 25, 2014; Santa Barbara City College, n.d.; Stewart, 2014; M. Webb, personal communication, November 18, 2014.

Education Codes

Education Code 11300-11301: Supports the collaborative efforts of community college and local school districts to create alternative, small Middle College High Schools on college campuses that target "at-risk high school students who are performing below their academic potential" as an effective approach to address high school dropout.

Education Code 11302: Supports partnerships between public secondary schools and postsecondary institutions including community colleges, the California State Universities, or the Universities of California to create small Early College High Schools that offer a coherent pathway to a high school diploma and up to two years of college credit that can be applied towards a postsecondary credential. with a four year period.

Education Code 46140-46147: Prescribes how attendance should be counted and the exceptions to the required minutes of instructions per day for various types of high school programs including Early and Middle College High Schools.

Education Code 48800: Allows "educational enrichment opportunities" so that a limited number of high school students can enroll in community college courses. Enables secondary and postsecondary partners to develop "aligned sequences of rigorous high school and college coursework" to provide an opportunity for more advanced students to accelerate their graduation from high school and launch their postsecondary enrollment.

Education Code 68130.5: Exempts undocumented students from having to pay out-of-state tuition if they have attended high school in California and have received a high school diploma or its equivalent.

Education Code 76001: Allows high school students to enroll in up to 11 community college units as "special part-time" status, with attention to the impact that these students' enrollment might have on the ability of regularly admitted students to enroll in needed courses.

Education Code 76002: Allows a community college district to count dual enrollment students in its reports of FTES.

Education Code 76300: Provides an option for the community colleges' board of trustees or governing board to exempt special part-time students from paying enrollment fees.

Senate Bill 292 (1996): Average Daily Attendance (ADA) for Dually Enrolled Students
Outlines the amount of ADA that school districts can claim for dually enrolled students as long as these students are enrolled in and attend high school for at least 180 minutes per day.

Senate Bill 338 (2003): Reforming Concurrent Enrollment
Provides an opportunity for high school students who might benefit from "advanced scholastic or vocational work" to enroll in community college courses that are advertised and open to the general public. Requires the student receive a principal's recommendation and parental consent. Allows the community college to restrict student admission (e.g., age, grade level, or results of various assessments). Limits students' summer enrollment to five percent of each grade at any high school.

Senate Bill 70 (2005): Vocational Education
Provided $20 million in funding to incentivize efforts to improve career and technical education at both community colleges and high schools. Many high schools used this funding to support career and technically focused dual enrollment efforts.

Senate Bill 1303 (2006): Limited Exemption for 5% Cap
Eliminates provisions in current law that place a five percent "enrollment cap" on the admission of K-12 students to a California Community College (CCC) summer session if at least one of the following criteria are met: (1) "course is offered by a middle college high school or an early college high school" (Santa Barbara City College, 1996; p. 17), or (2) "the course is a for-credit, lower division college level course that meets California State University (CSU) general education requirements" (Santa Barbara City College, 1996; p. 17).

Senate Bill 946 (2008): Early Assessment Program
Enables California's community college system to be a part of the Early Assessment Program.[15] Although the outcome was not a dual enrollment program, the bill provided an avenue for community colleges to work with their local high schools and California State Universities to signal to students whether they were college ready by the 11th grade. This testing gives students an opportunity to do remediation in their 12th grade year to improve their college readiness by the time they enter college.

Senate Bill 650 (2011): College Promise Partnership Act
Authorized a partnership between Long Beach Community College District and the Long Beach Unified School District to provide an aligned sequence of rigorous secondary and postsecondary coursework.

Senate Bill 1316 (2012): Early and Middle College High Schools
Exempts early and middle college high school students from the 240 instructional minutes per day usually required; students only need 180 instructional minutes instead of 240 if they are "special admits" at a community college.

Senate Bill 150 (2013): Concurrent Enrollment Non-resident Tuition (complement to Senate Bill 141)
Allows a community college board of governors to waive out-of-state enrollment fees for dually enrolled, undocumented high school students.

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[15] The Early Assessment Program (EAP) allows students to take an *augmented* California Standards Test (CST) test beginning in their 11th grade year to determine college readiness to allow them to identify and address knowledge and skill deficits before they enter college (California Community Colleges Chancellor's Office, n.d.).

Assembly Bill 540 (2001): Exemption From Nonresident Tuition
Allows undocumented students who have completed at least three years at a California high school and who have received a high school diploma or GED to enroll in California public state higher education institutions and pay in-state resident tuition rates.

Assembly Bill 967 (2005): 5% and Priority Enrollment
Requires school districts to notify every 10th and 11th grader about dual enrollment options and allows college districts to assign lower registration priority to dual enrollment students than non-dual enrollment students.

Assembly Bill 338 (2003): Reforming Concurrent Enrollment
Allows community colleges to claim full-time equivalent (FTE) for dually enrolled students; requires that dual enrollment course be open and advertised to the public. Summer dual enrollment is limited to five percent of each grade at any high school.

Assembly Bill 230 (2011): **Joint Educational Programs: Middle College High School**
Allows for the community college district's governing board to offer dual enrollment options and students priority registration.

Assembly Bill 1451 (2014): Concurrent Enrollment Partnership Agreements
Would lift the 11 unit cap to 15 units for dual enrollment students and would allow the community college district to receive additional units of FTES for closed college courses offered on a high school campus. Would offer limited physical education options as long as these courses do not exceed the 10% enrollment cap of each grade at high school.

Assembly Bill 1540 (2014): Lifting 5% Cap for Computer Science Courses
Allows students who can benefit from "advanced scholastic or vocational work" to be recommended by a principal to enroll in community college summer session; lifts five percent cap for computer science courses.

Sample Student-level Indicators and Benchmarks

STUDENT-LEVEL INDICATOR	INDICATOR OR MEASURE	BENCHMARK OR THRESHOLD	DATA SOURCE
Academic preparation and readiness	• Reading grade level and GPA • College and career readiness scale or index (e.g., Conley's college readiness)	• Academic proficiency according to test scores • GPA (≥ 2.0) for term, cumulative • Credit completion	• Students' high school & college transcripts • Assessment test scores • Student interviews • Student surveys • Student focus groups
Affective adjustment	• College and workplace norms and expectations • Affective readiness (e.g., motivation, maturity, behavior) • Metacognitive skills and knowledge (Almeida, Steinberg, & Santos, 2013) • Problem solving • Time management • Persistence • Goal setting	• 85% on-time attendance • 90% completion of assignments • GPA • Positive movement on pre- and post-metacognitive measures (e.g., Conley's college readiness scale, student self report)	• Attendance records • Student surveys • Student focus groups • Classroom observations • Counselors' notes and records • Instructor feedback on individual student progress reports
Academic progress	• High school and college course completion vs. attempted (including drops and withdrawals) • Course name • Subject area • Development or college level	• Completion of 12 to 24 credits • With C or better – counts for HS and college credit • With D – only high school credit • Met Satisfactory Academic Progress[16] indicators • Cumulative 2.0 average • Completion of 2/3 of college courses attempted • Completion of a sequence of courses linked to movement from developmental to college-level courses or a particular course of study	• District data • School student transcript data • College student record data • Students' applications

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[16] To be eligible for federal financial aid, students must maintain Satisfactory Academic Progress. For more information about SAP, visit http://extranet.cccco.edu/Portals/1/SSSP/FA/Training/s009.pdf.

STUDENT-LEVEL INDICATOR	INDICATOR OR MEASURE	BENCHMARK OR THRESHOLD	DATA SOURCE
Student Achievement and Outcomes	• Retention • Persistence • Progress toward completion • Completion of high school requirements and college courses • Postsecondary enrollment & graduation • Completion of career and technical-related certificates, licenses or certification	• Passing California High School Exam Exit (CAHSEE)[17] • 'a-g' requirement completion • Completion of 2/3 of courses attempted with C or better • Term-to-term enrollment • On time graduation as outlined by individual educational plans • Enrollment in postsecondary institution within two years of high school graduation • No need for remedial coursework upon college entry • Receipt of a degree or credential within 6 years of college enrollment	• District data • School student transcript data • College student record data • Standardized test & assessment scores

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[17] The CAHSEE assesses reading, writing, and math skills to ensure that students are graduating from high school with grade-appropriate knowledge and skills in these areas. Students are able to take the CAHSEE beginning in their 10th grade year and can take it multiple times. If they do not pass the test in grade 10, they can take the test twice in their 11th grade year and up to five times their senior year (California Department of Education, n.d.).

Sample Program-level Indicators and Benchmarks

STUDENT-LEVEL INDICATOR	INDICATOR OR MEASURE	BENCHMARK OR THRESHOLD	DATA SOURCE

Secondary-Postsecondary Partnership	• Degree of collaboration between secondary and postsecondary partners around…
	  ○ Funding
	  ○ Coordination
	  ○ Management
	  ○ Reporting
	  ○ Credentialing
	  ○ Articulation
		• Clearly defined funding sources and instructional and management responsibilities for each of the participating partners	• MOU or letter of agreement review (every 2 years)

Recruitment reach and selection	• Demographic diversity of student body – gender, race/ethnicity, age, academic preparation, socioeconomic status (e.g., free and reduced price lunch eligibility)	• Diversity across categories • Number of underrepresented students • Number of students who are first in their families to go to college	• Local high school database • Student application materials • Student survey
Curriculum and course design	• Sequenced courses • Scaffolded courses • Accelerated coursework • College-level courses content	• Approval of courses by both partners • Alignment of high school and college requirements	• Curriculum committee review & approval of course content • College student record data • Student education plans
Supportive Services	• Embedded tutoring • Academic and personal guidance and counseling • Structured advisories (e.g., AVID) or small group activities	• All students: • Mandatory counseling appointments (e.g., three per term) • Attend 85% of advisory meetings • Students who are on probation • Mandatory tutoring and/or use of available campus services (e.g., math lab)	• Student survey & focus groups • Counseling reports & notes • School attendance records • Take up of support services

STUDENT-LEVEL INDICATOR	INDICATOR OR MEASURE	BENCHMARK OR THRESHOLD	DATA SOURCE
Faculty and Staffing	• Experience working with non-traditional students • Desire to work collaboratively (e.g., willingness to design integrated projects • Ability and interest in teaching at a community college • Will to mentor and advise students • Belief that students can and will be successful	• Credentials (e.g., Master's degree plus additional disciplinary-specific graduate study (Barnett et al., 2011) • Course assignments and projects (e.g., integrated project) • Innovative approaches (e.g., social justice lens) • Participation in team meetings • Collegial classroom culture (e.g., small group activities, peer-to-peer mentoring opportunities)	• Resume review • Syllabi • Student course evaluations • Performance evaluations • Observations • Regular check-in meetings

Sample Institutional-level Indicators and Benchmarks

Source: Kinnick, 2012

STUDENT-LEVEL INDICATOR	INDICATOR OR MEASURE	BENCHMARK OR THRESHOLD	DATA SOURCE

Quality	• Rigorous academics
	• Sense of community and support among students
	• Culture of high expectations and accountability among staff and students
		• Courses meet college standards
		• Students arrive at college ready to take collegiate-level courses
		• Students arrive at college with the metacognitive skills necessary to succeed:
		   ○ Problem solving
		   ○ Time management
		   ○ Persistence
		   ○ Goal setting
			• Curriculum committee review
			• Student and staff surveys
			• Teacher/instructor evaluations
			• Survey of postsecondary partners

Productivity	• College readiness • Students' persistence, retention and completion rates • Recruitment and retention of underrepresented students	• Students test into college-level courses • Students complete at least 2/3 of college courses attempted with a C or better • Students complete HS graduation requirements • Students earn up to 20 college credits • Students maintain a cumulative GPA of at least 2.0 • Underrepresented groups are succeeding at equal or greater rates than similar peers within the school or district	• Placement test scores • Student transcripts or records review

STUDENT-LEVEL INDICATOR	INDICATOR OR MEASURE	BENCHMARK OR THRESHOLD	DATA SOURCE
Viability	• Diversity of funding streams (public and private sources) • Support from key secondary and postsecondary partners • Navigation by secondary and postsecondary of different frameworks and reporting requirements • Program and secondary and postsecondary partners' reputations	• Successful *braiding* of various funding streams to cover program costs (Almeida et al., 2013) • MOU with clearly articulated roles and responsibilities for each partner • Press release or college-wide communications	• Financial reports provided by budget manager school district and community college • MOU elements such as coordination of funding, responsibilities and follow-up of key contacts, realization of identified benchmarks and accountability measures • Survey of administrators, instructors and teachers • Input from parents, caregivers and external partners (e.g., nonprofit organizations)