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Authors

Rios-Aguilar, Cecilia

Cuéllar, Marcela G.

Bañuelos, Nidia

et al.

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A Civil Rights Agenda for California's Next Quarter Century



# The Potential of California's Community College Baccalaureate for Closing Racial Equity Gaps

APRIL 2023

Cecilia Rios-Aguilar  
Marcela Cuéllar

Nidia Bañuelos  
Austin Lyke  
Davis Vo



*Proyecto Derechos Civiles*

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## About the Series

### *A Civil Rights Agenda for the Next Quarter Century*

The Civil Rights Project was founded in 1996 at Harvard University, during a period of increasingly conservative courts and political movements that were limiting, and sometimes reversing, major civil rights reforms. In 2007 the Project moved to UCLA. Its goal was -- and still is -- to bring together researchers, lawyers, civil rights advocates and governmental and educational leaders to create a new generation of civil rights research, and communicate what is learned to those who could use it to address the problems of inequality and discrimination. Created a generation after the civil rights revolution of the 1960s, CRP's vision was to produce new understandings of challenges and research-based evidence on solutions. The Project has always maintained a strong, central focus on equal education and racial change.

We are celebrating our first quarter century by taking a serious look forward -- not at the history of the issues, not at the debates over older policies, not at celebrating prior victories but at the needs of the next quarter century. Since the work of civil rights advocates and leaders of color in recent decades has often been about defending threatened, existing rights, we need innovative thinking to address the challenges facing our rapidly changing society. Political leaders often see policy in short two- and four-year election cycles but we decided to look at the upcoming generation. Because researchers are uniquely qualified to think systematically, this series is an attempt to harness the skills of several disciplines, to think deeply about how our society has changed since the civil rights revolution and what the implications are for the future of racial justice.

This effort includes two very large sets of newly commissioned work. This paper is the first in a series on the potential for social change and equity policies in California, a vast state whose astonishing diversity foretells the future of the U.S. and whose profound inequality warns that there is much work to be done. The second set of studies is national in scope. All these studies will initially be issued as working papers. They will be brought together in statewide conferences and in the U.S. Capitol and, eventually, as two major books, which we hope will help light the way in the coming decades. At each of the major events, scholars will exchange ideas and address questions from each other, from leaders and from the public.

The Civil Rights Project, like the country, is in a period of transition, identifying leadership for its next chapter. We are fortunate to have collaborated with a remarkable network of important scholars across the U.S., who contributed to our work in the last quarter century and continue to do so in this new work. We are also inspired by the nation's many young people who understand that our future depends on overcoming division. They are committed to constructing new paths to racial justice. We hope these studies open avenues for this critical work, stimulate future scholars and lawyers, and inform policymaking in a society with the unlimited potential of diversity, if it can only figure out how to achieve genuine equality.



Gary Orfield



Patricia Gándara

## **Acknowledgements**

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## Foreword

When it was adopted in 1960, the California Master Plan for Higher Education was heralded as leading the nation in higher education access. It provided a low-cost way for nearly all California students to go to college and created a pathway all the way to the Ph.D. and professional degrees. All students could have free access to a relatively nearby two-year college; the top third of students were guaranteed access to the state university system and the top 12 ½ percent would be able to attend the University of California. Middle class and mostly white students were able to move from two-year to four-year campuses with relative ease. However, more than 60 years later, with California sending more students to two-year colleges than any other state, where they do not have access to a bachelor's degree, and where relatively few ever transfer to four-year institutions, there is concern that the Plan has outlived its promise. The state's population has changed radically—from over 80 percent non-Hispanic white to only about one-third white in 2020—and the system has become increasingly stratified. Today the two-year colleges are attended mostly by students of color and low-income students, while the University of California is disproportionately attended by white and Asian students and those high school graduates from more privileged circumstances. The 1996 ban on Affirmative Action in California has also played a role in furthering this stratification of opportunity.

The Civil Rights Project has long had an interest in the inequity of opportunity in higher education and has devoted considerable effort to understand and combat it. In 2012, the Civil Rights Project conducted a state-wide study of community colleges that were disproportionately meeting with success in transferring their students of color to 4-year colleges and universities. One aspect of the study was to understand why most students who claimed they intended to get a bachelor's degree were not transferring to 4-year institutions from community colleges. We found

what many others had found: students often did not receive adequate counseling to help them plan for transfer, they took unnecessary courses and failed to enroll in the ones they really needed. Importantly, even where they had better information, students have complicated lives that often prevent them from moving to another campus (e.g., family and work commitments, costs). In fact, there is considerable research that shows that school transfers for vulnerable students are risky and at the college level may not be practical. Many Latino students, in particular, are very reluctant to move away from home or community because of a need to help support their families. For example, about half of Latino students in California come from immigrant homes where parents need help navigating the bureaucracy and communicating with service providers or they rely on their offspring to help meet basic living expenses or help care for younger siblings. Many already have families of their own for whom it would be a hardship to move. Thus, it is expected that if students could remain at the same campus, many more would graduate with their BA/BS degree. But are community colleges in California prepared to — and desirous of — providing the 4-year degree?

We found that those community college campuses that were disproportionately successful in the transfer function for students of color were often prepared to provide them with 4-year degrees. They were well-organized, had well-functioning support programs for these students and had well-qualified faculty committed to seeing students transfer. This study gave us reason to believe that some California Community Colleges could successfully offer 4-year BA/BS degrees and thereby eliminate the need to transfer to a different campus. Given what we know about the reasons that so few community college students of color manage to acquire 4-year degrees, the California Community Colleges Bachelor's Degree Program appears to be a desirable policy option both as a response to inequitable access to a college degree as well as to help meet the state's urgent need for college educated workers. A major reason that these programs have not gained traction before is the



state's adherence to the outdated Master Plan. But, Cecilia Rios-Aguilar and her colleagues have shown that higher education institutions in the state do not necessarily compete for the same students. Moreover, based on an analysis of data for California programs engaged in a pilot study, the researchers call for greater support and expansion of these community college baccalaureate programs. Importantly, though, they also call for a sharper focus on racial equity as a key outcome of these programs.

*-Patricia Gándara*



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# The Potential of California’s Community College Baccalaureate for Closing Racial Equity Gaps

## Executive Summary

The bachelor’s degree remains a fundamental path to economic opportunity in the United States. Critical for policymakers, then, is ensuring equitable access to such benefits—a task often constrained by long-standing structural barriers. One of the most obvious structural impediments for bachelor’s degree-aspirants in California (CA) is the current version of the CA Master Plan for Higher Education. With a robust public higher education system that is continually forced to adapt to demographic shifts and evolving labor markets, California is an especially important region for exploring the future of postsecondary education and economic growth. This report describes what we currently know about the California Community College Baccalaureate (CCB) program that was launched in 2017 and expanded in 2021. The program shows promising outcomes and that state education leaders can leverage existing components of the state’s education ecosystem to meet the economic and social demands of 40 million diverse Californians and to close existing racial equity gaps.

We examine existing data to show that over 1,000 students have enrolled in CCB pilot programs across California since such programs were approved in 2015. We found variation in who enrolled in the CCB programs by gender, race/ethnicity, and age group. For example, colleges like West Los Angeles College have enrolled a plurality of Latina/o/x students, which is no doubt influenced by their local populations. In addition to analyzing enrollment patterns in CCB programs, we also describe program outcomes, including persistence and graduation in programs and employment success after graduation. Using administrative records from the California Community Colleges Chancellor’s Office (CCCCO), we found that across eight programs with available data,

first-year persistence for CCB programs is generally high, with more than 80 percent of students continuing to the second term. Student institutional data from the first 15 CCB programs reveal that, on average, the year-two and year-three graduation rates for CCB programs (from when students can begin taking upper-division courses) were 67 percent and 78 percent, respectively in California across three student cohorts (Hoang, Vo, & Rios-Aguilar, 2022). Furthermore, CCB graduates have been relatively successful in gaining employment for each of the past three years with students reporting wage gains as a result of obtaining their baccalaureate degrees. Graduates of CCB programs also reported that their current job is in California, closely related to their coursework and field of study, and have positive wage gains. All told, employment outcomes for California CCB students are generally favorable and corroborate studies on the economic value of bachelor's degrees.

From carefully examining available data for California's CCB programs, as well as data from other states that have had successes in implementing CCBs, we argue that this is a pivotal moment to improve the effectiveness, efficiency, and quality of CCBs in California and to, by extension, increase the number of students that complete a baccalaureate degree in the state. We urge legislators, administrators, practitioners, and other education leaders to consider addressing the following issues in the plans to expand CCB programs:

1. **Center racial equity.** Colleges interested in expanding and/or creating new CCBs need to develop strategies to attract more students from diverse racial/ethnic backgrounds, as well as students who can significantly benefit from participation in CCB programs, including student parents, first-generation college students, and adult learners. Legislation needs to also center racial equity while documenting and highlighting the economic value of CCB programs. As programs grow, regularly and systematically collecting and reporting data on

post-graduation employment and earnings by race/ethnicity and additional student demographics will be key to assessing the impact of CCBs.

- 2. Evaluate and improve implementation, quality, and accountability.** Effective program evaluation tools and resources are necessary for program growth. California must create a cohesive data and research infrastructure that is inclusive of CCB programs. This infrastructure should include data collection capabilities that support campuses with programs. As we document here, the existing data infrastructure consists of parallel data systems that can differ in how they count/report students and how they measure progress and outcomes. Improved data collection requires investment in human resources and research support to assess and evaluate CCB implementation and quality. At the state level, consistent evaluation efforts would provide programs with effective information required to continuously build and sustain CCB success for both students and institutions.
- 3. Invest in community colleges and CCB programs, especially those directly involved and impacted (e.g., the students and the faculty).** The above efforts ought to be considered alongside changes to the Student-Centered Funding Formula (SCFF) that would reward community colleges for expanding opportunities and outcomes for students of color from economically disadvantaged backgrounds that earn baccalaureate degrees in the state. Changes to the SCFF can be a mechanism to incentivize and maintain accountability by rewarding colleges that close racial equity gaps, help students get jobs with livable wages, and create pathways for students to go to graduate school. The state needs to elevate the work of faculty teaching in these programs and to compensate them adequately for the work they are doing inside and outside the classroom (e.g., curriculum design, mentoring).



**4. Strategic expansion of CCBs.** Community colleges might consider offering degrees in fields where there is a clear shortage of bachelor's degree-educated workers, even if these fields overlap with existing four-year programs (e.g., if local demand for registered nurses outpaces the production of bachelor's degrees in nursing at the nearest California State University). Evidence from states that allow program overlap between the community college and state university system (e.g., Florida) indicates little competition for students between sectors, as CCBs generally serve a different student population than the four-year sector. As such, there is a need to develop a more clear and consistent process to approve new CCB programs and document progress in existing ones to ensure alignment of program offerings and their communities. To develop a new program, this process could expand upon the existing process to document and examine:

- a) Labor market needs (in local and regional economies) with data from various sources (e.g., Lightcast, Bureau of Labor Statistics, Glassdoor, and the California Cradle-to-Career data system) and with considerations to labor market conditions by race
- b) Historical production of postsecondary credentials and racial equity gaps in college access, persistence, and completion in the region
- c) Lack of baccalaureate programs in a specific geographic proximity by race
- d) Disciplinary fields in which baccalaureate degrees are needed
- e) How the program will integrate with the regional academic (e.g., high schools, California State Universities, University of California system, etc.) and economic pipeline (e.g., employers)

**5. Market the educational and economic benefits of CCBs.** Community colleges should make explicit to students the opportunities that completing CCBs brings to their academic

and career trajectories. High-quality CCBs programs should be highlighted to students and households for how it is an affordable and accessible pathway to a well-paying job. Colleges can also promote that students can further their education and apply to graduate school after obtaining a bachelor's degree via the CCB program.

6. **Create a community of practice to learn together.** Colleges interested in growing their CCB programs and/or creating new CCBs need guidance on how and where to connect their programs so that there is better alignment with local and regional economies and labor markets. This process can be informed by data and research to contextualize and identify workforce needs with considerations for racial equity. Colleges can partner with related businesses and services on- and off-campus to sustain and grow these programs. Collaboration amongst multiple entities will help ensure the development of best practices, policies, structures, and systems that will be beneficial for colleges, businesses, and students.

# The Potential of California’s Community College Baccalaureate for Closing Racial Equity Gaps

Cecilia Rios-Aguilar, Marcela G. Cuellar, Nidia Bañuelos, Austin Lyke and Davis Vo

## Introduction

For decades, the monetary returns to obtaining an education, specifically a baccalaureate degree, have received much attention from scholars, policymakers, and the public writ large. Indeed, there exists a vast line of studies that demonstrate a well-established link between educational attainment and earnings (Barrow & Rouse, 2005; Card, 1999; Ma, Pender, & Welch, 2019). This literature and resulting press reports highlight that individuals with a bachelor’s degree can expect to earn more—the figure cited is usually \$1 million—over a lifetime than someone with only a high school diploma, and that wage gap is widening (Bartik & Hershbein, 2018; Carnevale, Rose, & Cheah, 2013; Ma et al., 2019). Even with drastic changes in the labor market and with rapid increases in tuition and cost of attendance, economists continue to argue that college is still worth the financial investment (Abel & Deitz, 2019). Before the COVID-19 pandemic, evidence suggested that over 95 percent of jobs created during the economic recovery after the 2008 financial crisis went to college-educated workers, while those with a high school diploma or less were left behind (Carnevale, Jayasundera, & Gulish, 2016).

As it stands in the early 2020s, the bachelor’s degree remains a fundamental component to economic opportunity in the United States. The positive social benefits of bachelor’s degrees are more salient when thinking about baccalaureate degrees in fields that are considered high in social value and with relatively low wages (e.g., early childhood education, arts, social work, etc.) (Postsecondary Value Commission, 2021). Perhaps less salient is that evidence suggests that college degrees lead to a bundle of non-economic benefits, including engaging more with communities,

voting more frequently, and living healthier and longer lives (Arum et al., 2021; Postsecondary Value Commission, 2021). These personal non-economic returns, in turn, convert into a variety of important societal benefits. Indeed, learning new things and engaging with diverse perspectives is inherently valuable, builds a more informed public, and creates a more vibrant democracy (Postsecondary Value Commission, 2021). Critical for policymakers, then, is ensuring equitable access to such an array of benefits—a task often constrained by long-standing structural barriers.

Inequities and inequalities in the higher education and labor market exist. While it is clear that there is an economic payoff of completing a baccalaureate degree, there are persistent inequities in who completes bachelor's degrees and who benefits the most from acquiring such degrees when entering the labor market (Johnson & Cuellar Mejia, 2020). Most recently, Carnevale, Schmidt, and Strohl (2020) found that 60 to 70 percent of the growth in earnings gaps since the 1980s is linked to differences in access to, and completion of, college programs with, what the authors call, labor market value. The education gap between white, Black, and Latina/o/x students suggests that white students are most likely to benefit from the college earnings premium—44 percent of white workers hold bachelor's degrees or higher, compared to 30 percent of Black workers and 20 percent of Latina/o/x workers. With a robust public higher education system that is continually forced to adapt to demographic shifts and evolving labor markets, California is an especially important region for exploring the future of postsecondary education and economic growth.

### **The Need and Potential for Structural Reform in California**

In California, income inequality is at or near record levels (Kimberlin & Hutchful, 2019). Lower rates of college access and completion among Black, Indigenous, and Latina/o/x, and economically disadvantaged Californians worsens the state's economic divide and puts California further behind in meeting its workforce needs (Johnson & Cuellar Mejia, 2020). Recent data (see

Table 1) highlight the existence of very large disparities in bachelor’s degree attainment among different racial/ethnic groups in California. For example, despite the fact that Black and Hispanic people comprise 5.9% and 38.1%, respectively, of California’s total population, they only account for 4.1% and 11.5%, respectively, of California’s bachelor’s degree or higher holders (Statistical Atlas, 2018a; 2018b). When discussing economic and educational outcomes, we also acknowledge that there is additional variation within Hispanic or Latina/o/x and Asian ethnic groups that is typically not collected and/or reported in administrative datasets. Furthermore, gender gaps are noticeable and have important consequences for individuals, families, and communities across the state of California. It is important to mention that these gaps can be partly attributed to factors such as academic majors and the selectivity of colleges (Johnson & Cuellar Mejia, 2020). However, other factors, such as labor market discrimination can also be present and should be considered for addressing the state’s income inequality.

**Table 1. California Educational Attainment by Race/Ethnicity and Gender for 25-Year-Olds and Older Compared to Total California Population (2018)**

Subgroup	Attained Bachelor’s Degree or Higher in California			California Population
	<i>Female</i>	<i>Male</i>	<i>Total</i>	<i>Total</i>
Asian	12.1%	10.7%	22.8%	13.9%
Black	2.2%	1.9%	4.1%	5.9%
Hispanic	6.2%	5.3%	11.5%	38.1%
White	27.0%	28.1%	55.1%	38.4%
Mixed	-	-	-	2.9%
Not Listed Above	3.5%	3.0%	6.6%	0.9%

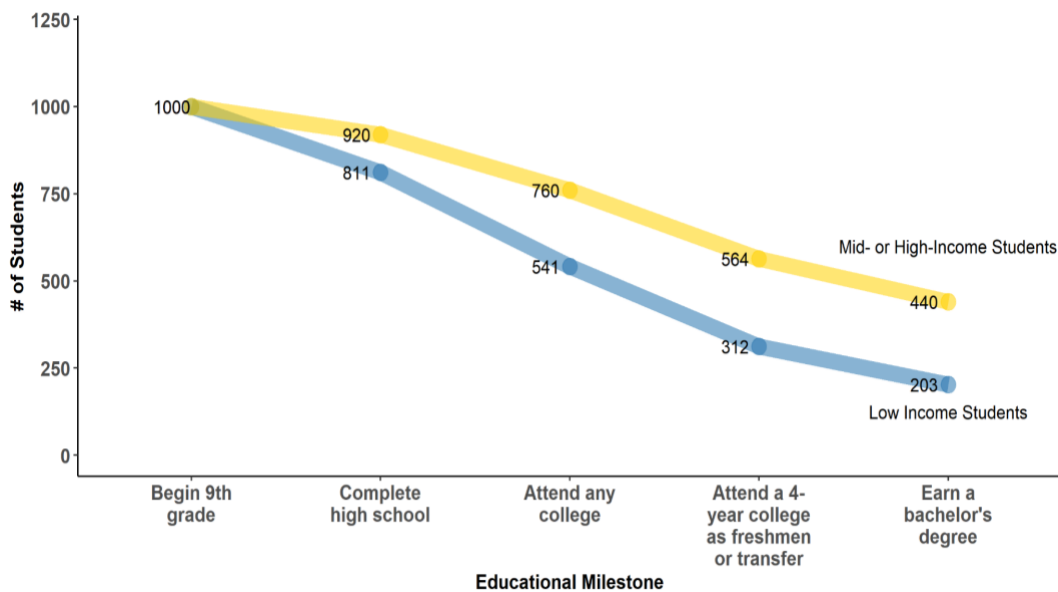
*Source:* Figures calculated based on U.S. Census Bureau data reported on Statistical Atlas (2018a; 2018b).

**Note.** White refers to non-Hispanic white; Hispanic excludes Asian and Black Hispanics.

Even though a college degree benefits Californians in all racial/ethnic and income groups, these benefits vary by family income and race/ethnicity. In California, the college wage premium is

at record-high levels (Johnson & Cuellar Mejia, 2020). While it is clear that obtaining a baccalaureate degree is a savvy financial investment, there remain significant barriers to college access, persistence, and completion for students from historically minoritized racial/ethnic, economic, and educational (i.e., first-generation) backgrounds. Furthermore, it should be noted that there is growing evidence that highlights the economic value of obtaining a college degree for students from economically disadvantaged backgrounds (Chetty et al., 2017). Unfortunately, recent data suggest that a leaky educational pipeline disproportionately impacts students from economically disadvantaged backgrounds. As shown in Figure 1, a very significant smaller number of low-income students in California will *not* earn a college degree relative to mid- or high-income students.

**Figure 1. Disparities in College Attainment Between Low- and Mid/High-Income 9th Graders in California**



Source: Figure adapted from Johnson & Cuellar Mejia (2020).

Substantial differences exist in who has access to and completes baccalaureate degrees in California. As discussed earlier, white and Asian Californians are more likely to have at least a bachelor's degree. More than half of Latina/o/x Californians and nearly half of Native American or Alaska Native Californians never started college. And nearly a third of Black Californians began

college, but never finished (California Competes, 2020). Geographically, Bay Area residents are most likely to have completed a bachelor's degree (52%), while San Joaquin Valley residents are least likely to have a bachelor's degree (17 percent compared to the statewide average of 35 percent). It is even more difficult to believe that these disparities exist in a state known for its accessible and comprehensive higher education system with its three public postsecondary segments: the California Community Colleges (CCC), the California State University (CSU), and the University of California (UC) (California Competes, 2020).

One of the most obvious structural impediments for bachelor's degree-aspirants is the California Master Plan for Higher Education. Spearheaded by Clark Kerr of the University of California, Berkeley in 1960, the CA Master Plan articulates three distinct missions for three traditional higher education segments (community colleges, baccalaureate universities, research universities), each with rigid student eligibility requirements and organizational features. The CA Master Plan was an ingenious solution to higher education organization at its inception, protecting institutional missions and directing students towards appropriate higher education pathways (Governor's Office of Planning and Research, 2018). Almost sixty years after its creation, the CA Master Plan still occupies a mythical place in California and in American higher education (Douglass, 2000). Such myths, however, are based on assumptions that are inconsistent with the experiences that many first-generation students of color from economically disadvantaged backgrounds face while attempting to access and succeed in California's higher education system in the twenty-first century. For example, existing evidence shows that Latina/o/x students remain significantly overrepresented in the CCC and CSU systems (see Table 2). Likewise, the average socioeconomic status of students in the three segments of California's public higher education system (CCCs, CSUs, and UCs) are vastly different. We can see in Table 2 that a high proportion of students from

economically disadvantaged backgrounds are enrolled in the CCCs and CSUs, further deepening the gaps and divides between these segments of the higher education system in California.

**Table 2. Fall 2020 Enrollment Data from California’s Higher Education Public System**

Student Group	CCC	CSU	UC
African American or Black	5.6%	4.0%	4.3%
American Indian/Alaska Native	0.3%	0.2%	0.5%
Asian	11.5%	15.4%	31.1%
Filipina/o/x	2.8%	-	-
Hispanic/Latina/o/x	45.7%	44.7%	22.2%
Multiracial	4.3%	4.3%	-
Native Hawaiian or Pacific Islander	0.4%	0.3%	0.3%
Unknown	4.8%	3.6%	3.2%
White	24.5%	22.0%	23.1%
International	-	5.4%	15.3%
Pell Grant Recipients	42%	43%	35%

*Source:* California Community Colleges Chancellor’s Office (2020a; 2020b); California State University (2020); University of California (2020).

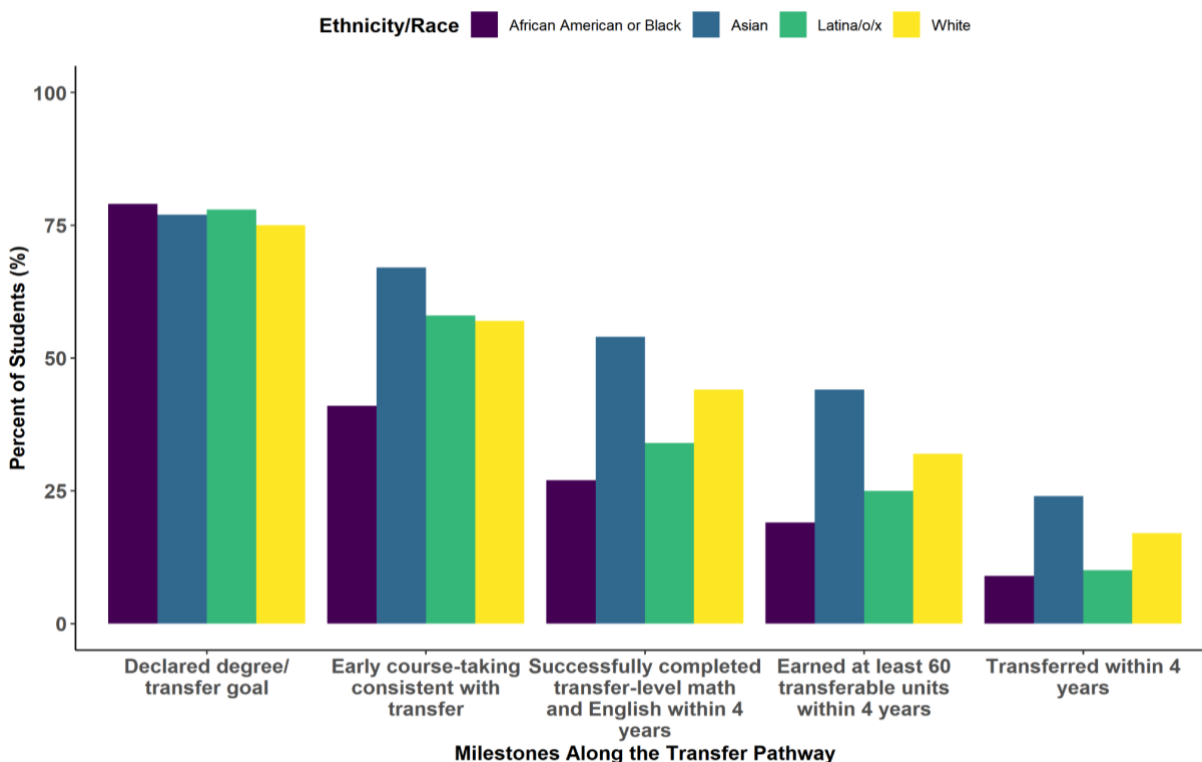
**Note.** Different subgroups’ data were available due to different data collection and reporting methods of each systems’ public facing data systems. A dash (-) is denoted in cases where data was not available.

Despite the vital role they play in California’s postsecondary system and economy, community colleges receive significantly fewer financial resources to serve and support a larger proportion of students of color from economically disadvantaged backgrounds. Specifically, each year, California enrolls approximately two million students in community colleges. While most of these students intend to eventually earn a bachelor’s degree, fewer than a third of transfer-intending students transfer to a four-year college after six years (Johnson & Cuellar Mejia, 2020). Large equity gaps among those who experience transfer remain: while Latina/o/x students represent 51 percent of all students who declared a degree/transfer goal, they represent 35 percent among those who



successfully transfer within four years. African American or Black students represent a smaller share of the student body, but gaps are also concerning—African American or Black students represent 7 percent of all students who declared a degree/transfer goal, but five percent of those who successfully transfer (Figure 2 displays racial and ethnic gaps along students' transfer pathway).

**Figure 2. Milestones Along the Transfer Pathway by Race and Ethnicity**



Source: Figure adapted from Johnson & Cuellar Mejia (2020).

While the California Master Plan has been successful in increasing enrollment in California’s nearly 150 public colleges and universities, we argue that it does *not* have the capacity in its current form to: fulfill labor market demand for college degrees, certificates, and skills; improve alignment between local and regional economies and labor markets; adapt to the impending technological and economic transformations (e.g., automation in industrial sectors); meet the growing needs of adult learners and those with care-giving responsibilities; and close the racial equity gaps that persist in the state’s higher education ecosystem. Indeed, California’s leading role in higher education has

dwindled over time. In 2017, the state ranked 31st out of 51 with regard to high school graduation rates and 28th with regard to the percentage of adults with any higher education credential (California Competes, 2017). Furthermore, research reveals that California's college degree production is not keeping pace with employer demand. In fact, some estimates suggest the supply of bachelor's degrees and sub-baccalaureate credentials will fall short of demand by over two million degrees by 2025 (California Competes, 2017). In sum, California has a higher education system that does not address ongoing challenges of: low college completion rates in the CCC and CSU system; underrepresentation of historically minoritized students in the CSU and UC systems; increasing costs of attendance; cost of living in the state; lack of consensus on appropriate outcomes, evaluation, and assessment measures; lack of a comprehensive data system; persistent achievement gaps by race, ethnicity, socioeconomic status and geography; and inequities in resource allocation across the system.

Proposals to address some of these challenges have emerged over time. For example, there have been a number of proposals to raise the CA Master Plan's eligibility caps for UC and CSU campuses, but such efforts have not gained traction due to the prohibitive costs of building and operating new four-year campuses (The Campaign for College Opportunity, 2021; Smith, 2020). Other proposals include converting some community colleges into four-year CSU and UC branch campuses (Geiser & Atkinson, 2013). The most sought out strategy to address baccalaureate degree completion in California (and probably around the nation) has concentrated on improving the community college transfer function. Yet, despite long-standing efforts, the transfer function has not substantially improved, particularly for students of color (Gándara, Alvarado, Driscoll, & Orfield, 2012).

## **The Strategy: Community College Baccalaureate (CCB)**

The higher education systems in California and in the nation have historically been inadequate in serving the academic, social, and economic interests for students of color (Carnevale & Strohl, 2013). With the COVID-19 pandemic, growing racial unrest, and greater inequalities, there is an urgent need to align pathways for education and employment opportunities/outcomes (Fuller et al., 2022). The community college baccalaureate presents a new opportunity to concretely provide more accessible, affordable, and place-bound bachelor's degrees to advance social mobility for racially and ethnically diverse students, and to meet local workforce demands (Fulton, 2020; McKinney, Scicchitano, & Johns, 2013). CCB programs are quickly being adopted across the U.S. (Love, Bragg, & Harmon, 2021). In 2021, California approved the CCB to move from a pilot stage at 15 colleges to a permanent program, allowing up to 30 additional community colleges to develop CCB programs per academic year—signaling the growing relevance of these place-based programs in California's public higher education landscape (Assembly Bill 927, 2021; Senate Bill 850, 2014). The development and expansion of California's CCB programs has the potential to equitably serve the academic and professional aspirations of students of color in one of the most ethnically and racially diverse college-going populations nationwide (California Community Colleges Chancellor's Office, 2022; Johnson & Mejia Cuellar, 2019).

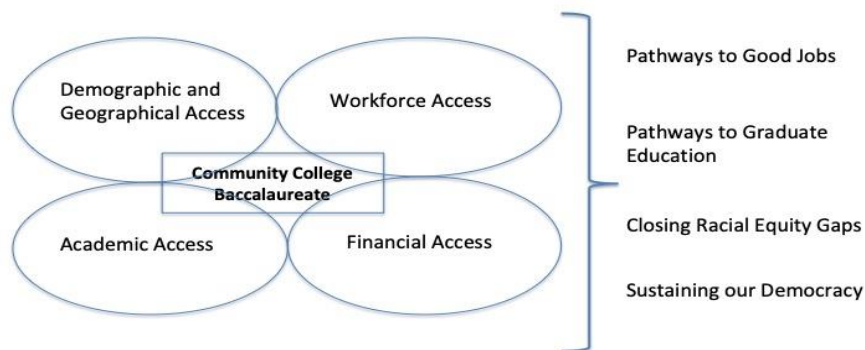
In addition to improving the transfer function, one of the most feasible and cost-effective tools that policymakers have adopted is to create and provide a robust set of high quality CCBs that center racial equity. The states of Washington (see Bragg & McCarthy, 2020 for details on benefits of CCBs) and Florida (Love, 2020), among others around our nation, have been quite successful in implementing such programs to:

- Improve and simplify the overall postsecondary education ecosystem

- Ensure accessible and affordable postsecondary credentials for underserved student populations
- Better align higher education with rapid changing economies and local and regional labor markets
- Increase options for students who are currently working and going to college part-time to find good jobs, advance in current careers, and/or change careers
- Address racial inequities in higher education systems
- Improve the career and economic capital of individuals' families and communities, particularly those of racially/ethnically minoritized and marginalized backgrounds

Our report builds on the history, findings from rigorous studies, and data from existing CCB programs to argue that, in addition to the aforementioned benefits, California's CCBs are the best vehicle to transform who accesses and succeeds in California's higher education and labor market. Furthermore, the CCB programs can play a key role in: (1) closing key racial equity gaps, (2) opening new paths for advanced education, and (3) sustaining our democracy (see Figure 3). It is clear that bachelor degree production in California needs to increase substantially and at a rapid pace to meet the needs of the state. Questions loom: how do we get there? and how do we ensure that students of color, especially those from economically disadvantaged backgrounds, can also benefit from the opportunity of obtaining a baccalaureate degree?

**Figure 3. Framework for Understanding the Role of CCBs in California**



*Source:* Figure adapted from Bragg & McCarthy (2020).

This report is organized into four major sections. First, we present a condensed history of CCBs and discuss existing research on the impact these programs have had on students’ academic and occupational trajectories. Second, we discuss the existing efforts to evaluate the status of California’s CCBs. To accomplish that, we use data (on both academic and labor market outcomes) from two distinct sources and discuss the implications of having two different and incomplete stories regarding the benefits and opportunities of California’s CCBs. The third section of our report highlights data from Florida and Washington and the current limitations imposed by the California Master Plan to inform future efforts in California. The final section of our report discusses the strategies that California needs to consider to ensure that CCBs thrive.

## **The Legislative and Historical Context of CCB Programs Nationally and in California**

### **A Brief History of CCBs in the United States**

The conferral of baccalaureates at community colleges is a recent phenomenon in a longer arc of change in higher education (Floyd & Walker, 2008; Hanson, 2009). The development of United States higher education includes new institutional types and degrees to meet the evolving economic and social needs of the nation. For example, only the bachelor of arts was offered in the

colonial colleges until the bachelor of science was created in the 1800s (Townsend, Bragg, & Ruud, 2008). The conferral of new degree types has thus been a recurring process in the history of higher education. Similarly, a diverse set of institutions, including community colleges and research universities, were created over time and codified a stratified structure that does not always meet the educational needs of our changing society. As more four-year institutions shift towards more research-oriented missions, often symbolizing prestige and access to more resources, Hanson (2009) argues there is now a gap in meeting the undergraduate education that community colleges are well-equipped to fulfill. As most students attend associate-granting institutions and a bachelor's degree is increasingly necessary for socioeconomic advancement, providing opportunities for greater access to baccalaureates at these institutions is more democratic and egalitarian.

The histories of CCBs and applied baccalaureates overlap in several ways (Townsend et al., 2008). Applied baccalaureates emerged in the 1970s and were first offered at institutions that historically offered baccalaureates. In the 1970s, an applied baccalaureate (AB) degree in a community college was established at New York City's Fashion Institute of Technology (FIT) through state legislative authorization offering the first one of its kind. Several states limit community colleges to only offer applied baccalaureates, and these types of degrees are often used as a strong rationale for legislative efforts to authorize CCBs given their strong connection to the labor market. CCBs are thus often called *applied baccalaureates* and these terms are consequently often used synonymously. Yet, there are also important distinctions between CCBs and applied baccalaureates. A CCB broadly refers to a degree offered by an institution that primarily offers associate degrees and a limited set of baccalaureates (Floyd & Walker, 2008). Applied baccalaureates are broadly described as degrees that generally articulate with an associate's degree of applied science, typically in specialized fields of study such as technology and business management, as well as certain health

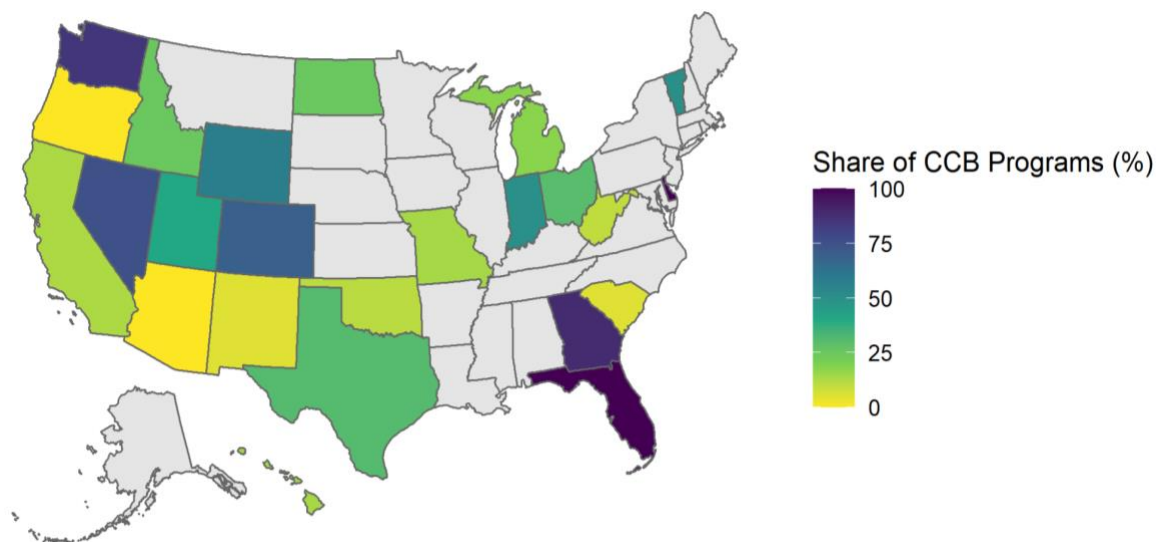
fields (Floyd & Walker, 2008; Floyd, Falconetti & Felsher, 2012). Among this type of degrees are also bachelor of applied science and bachelor of technology. Townsend et al. (2008) more precisely define applied baccalaureates as bachelor's degrees that incorporate applied associate courses and degrees in what were once considered terminal or non-baccalaureate level programs. As such, some CCBs may not be considered applied baccalaureates. How these degrees are defined also varies by state and program. For example, a CCB in the field of education is often based on courses that transfer to traditional baccalaureate institutions. According to leaders in Florida, CCBs in education are considered applied baccalaureates. In contrast, this has not necessarily been the case in Washington because these have not historically been defined as terminal degrees and this area of study has already been well-articulated for transfer (Ruud & Bragg, 2011). CCBs in nursing also garner these differing perspectives. States can thus differ on whether CCBs are applied baccalaureates or not. In some states, CCBs are designated as bachelor of science degrees.

### **The Growing CCB Movement**

Since the inception of the first CCB, the number and scope of programs have substantially grown. According to the American Association of State Colleges and Universities, in 2004, 11 states allowed at least one community college to offer bachelor's degrees (Russell, 2013). By 2010, these figures jumped to 18 states (Russell, 2010). Currently, 25 states authorize community colleges to offer baccalaureates and vary in the number and types of degrees offered (Meza & Love, 2022). This number could grow in the next few years. Figure 4 illustrates a map of states that are authorizing to confer CCBs and the share of active CCB programs among all public, predominantly associate-granting or mixed-mission institutions who have been authorized to confer them. In May 2021, the Arizona legislature passed legislation authorizing community colleges to offer CCBs in addition to the Tribal Colleges and Universities that were already able to offer bachelor's degrees in the state.

States adopting the CCB early on reflected isolated approaches allowing one or two institutions to offer these degrees (Russell, 2013). West Virginia, for example, approved the CCB at one college, Parkersburg Community College, in 1989. This college later became West Virginia University to address the need for more baccalaureate-granting institutions in the state. Despite limited growth in the 1980s, several states authorized community colleges to confer baccalaureates in the 1990s. Reflecting a greater recognition of these degrees, in 2000, the Carnegie Classification introduced a hybrid category, Baccalaureate/Associates, to account for those institutions that primarily offer associates degrees, but also offer less than 10 percent of bachelor’s degrees among its programs in its typology (Walker & Pendleton, 2013). In 2018, there were 262 institutions that were recognized as Baccalaureate/Associates in the Carnegie Classification of Institutions of Higher Education and they account for approximately 6 percent of all undergraduate enrollment.

**Figure 4. Share of Institutions with Approved CCB Programs Among Authorized States**



*Source:* Figure adapted from Love et al. (2021).

More states began offering CCBs during the 2000s, with several shifting from institutional to system-wide approvals (Floyd & Walker, 2008; Russell, 2013). In 2001, Florida approved a pilot program to confer CCBs at St. Petersburg College and later expanded these degrees across all of its



community colleges. Similarly, Washington approved a pilot program in 2005 at a set of institutions and by 2012, allowed all community and technical colleges to offer CCBs. Although Texas also approved CCBs at three colleges in 2003, the state permitted more colleges in 2017 to begin offering CCBs (Associated Press, 2017). Since 2018, Arizona, Missouri, Oregon, Ohio, South Carolina, and Wyoming joined the growing list of states offering CCBs (Love et al., 2021).

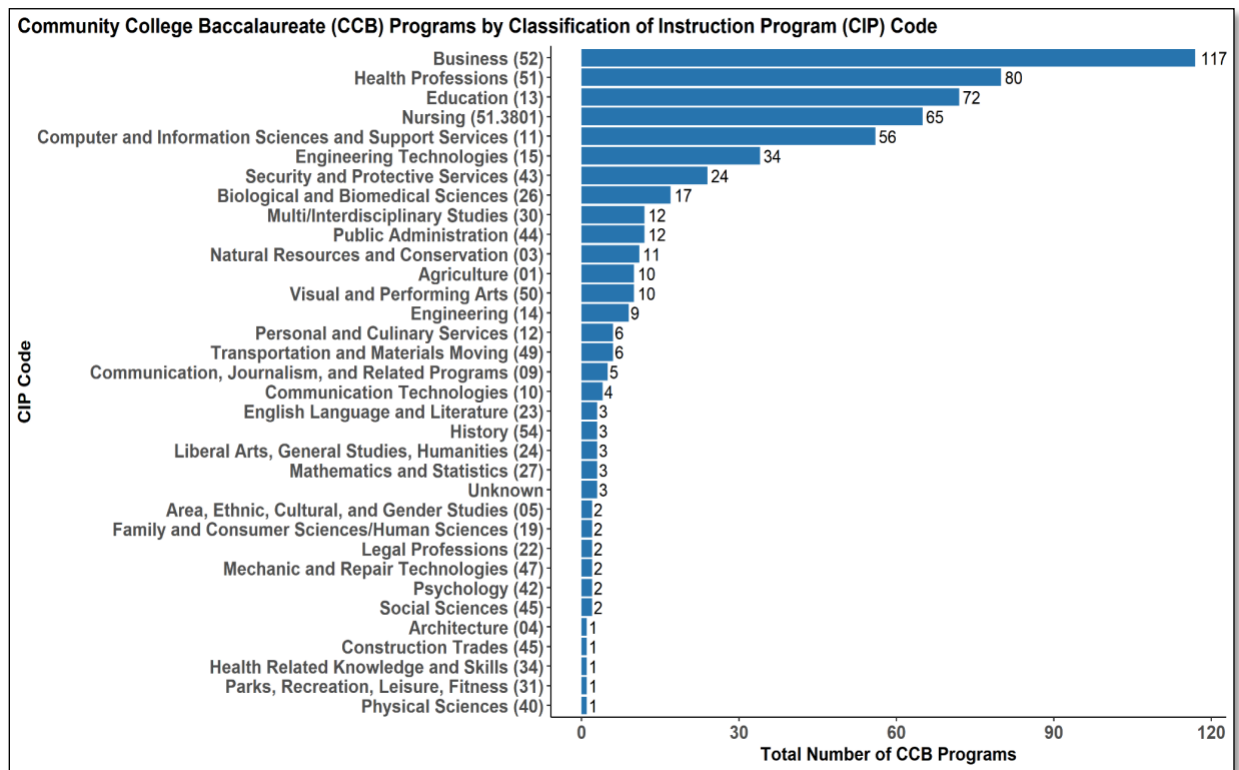
Table 3 shows a sample of states that confer CCBs at all colleges along with degree types and programs. Most states offer more than one degree type in a variety of technical and applied fields. Most common is the bachelor of applied science and some offer more unique degrees, such as the bachelor of applied technology in Texas and the bachelor of applied behavioral science in Washington. Several states also offer the bachelor of science, primarily in Education and Nursing. Given the limited capacity of four-year institutions in the region to meet high demand in this area, Washington now also offers a bachelor of science in Computer Science at Bellevue College. Bellevue College cites this as the only traditional, four-year bachelor of science degree in the state's community and technical college system (Bellevue College, 2021), demonstrating the possibility for CCBs to further enhance educational access and meet the labor market needs of surrounding regions in areas that overlap with four-year institutions. Ultimately, CCB program offerings may vary by state, depending on the state's labor market needs. Using the two-digit Classification of Instruction Programs (CIP) code associated with each CCB program, Love et al. (2021) identified the most common CCB programs across the nation. Business, healthcare, education, and STEM (science, technology, engineering, or mathematics) were among the most common programs (see Figure 5).

**Table 3. Select States Offering CCBs across All Colleges**

State	Year of Initial Approval*	Degree Types**	Sample Programs**
Colorado	2010	Bachelor of Applied Science Bachelor of Arts Bachelor of Science	Geospatial Science; Secure Software Development Education; Sustainability Studies Nursing
Florida	2001	Bachelor of Applied Science Bachelor of Science	Applied Health Sciences; Digital Media Business Administration; Elementary Education; Nursing
Michigan	2012	Bachelor of Arts Bachelor of Science	Early Childhood Education Culinary Arts; Marine Technology
Texas	2003	Bachelor of Applied Arts and Sciences Bachelor of Applied Science Bachelor of Applied Technology Bachelor of Science	Automation; Entrepreneurship Organizational Leadership Health Services Management; Technology Management Nursing (RN-to-BSN)
Washington	2005	Bachelor of Applied Science Bachelor of Applied Behavioral Science Bachelor of Science	Applied Management; Data Analytics; Teaching Youth Development Computer Sciences; Nursing (RN-to-BSN)

Source: \*Love et al. (2021); \*\*Community College Baccalaureate Association (n.d.).

**Figure 5. CCB Programs by Classification of Instruction Program (CIP) Code**



Source: Figure adapted from Love et al. (2021).

These programs target community college students who are more likely to be working adults with families, economically disadvantaged, students of color, and place-bound to their geographic area (American Association of Community Colleges, 2022; Bragg & Ruud, 2011). For many of these students, pursuing baccalaureate programs is not feasible due to multiple competing priorities (e.g., work, family, etc.), as well as due to their need to stay local. Cost is another important factor that students take into consideration. CCB degrees cost less than a baccalaureate program at a four-year institution since the first two years of coursework are at the community college tuition rate (Fulton, 2020). In addition to the benefit of increased access and affordability for students, the CCB degree plays an important role in filling gaps in the workforce. As national demand for a more highly educated workforce grows, states are challenged to meet the needs of their regional economies with the existing capacity to produce baccalaureate degrees (Kaikkonen & Quarles, 2018). College administrators in Florida, Texas, and Washington emphasize that meeting labor market needs is a primary goal of these CCBs (Cuellar & Gándara, 2021). These administrators also note the potential of these degrees to advance equity, particularly for students from economically disadvantaged backgrounds; some refer to racial equity given the demographic composition of students attending community colleges. Looking to successful programs in states where CCBs are well-established can strengthen the implementation of CCBs in California to enhance degree production and to center racial equity.

### **The Evidence: Impact of CCBs Nationally**

Two states, Washington and Florida, have authorized CCB programs for the longest amount of time (17 and 21 years, respectively) (Meza & Love, 2022). In these states, CCB programs are currently operating in almost all predominantly associate-granting public colleges in these states. Currently, all colleges in the Florida College System offer CCB programs, as do 29 of the 34 colleges

in the Washington State Community and Technical Colleges (Bragg, Harmon, Napiontek, Wasserman, & Kersenbrock, 2022). The history and size of the programs in Florida and Washington provide sufficient data to analyze enrollment and outcomes and to highlight the value of these programs, centering the need for improved equity in higher education and the labor market for historically minoritized people and nontraditional students (Meza & Love, 2022). As such, Florida and Washington are consistently referenced in national scholarship on CCBs.

Research conducted at the national level has begun to document the benefits of CCBs (Bragg & Ruud, 2011; Wetzstein, Meza, & Bragg, 2020). Specifically, some studies (e.g., Bemmell, Floyd, & Bryan (2008)) have shown that CCB programs provide more flexible scheduling and affordable pathways to the bachelor's degree, reduce the barriers associated with transfer, and offer more directed student services. Supporters of CCB adoption have also noted that CCB degree programs focus on meeting the local needs of stakeholders by responding directly to high-demand fields identified by regional employers (Floyd & Skolnik, 2019). Finally, researchers have found that CCBs in Florida have had a positive influence on overall associate degree production as students participating in these programs earn an associate degree before transferring into the baccalaureate program (Ortagus, Kramer, González Canché, & Fernandez, 2019). There were associate degree increases for students identified as Black and Hispanic. This means that CCBs are potentially positioned to help states increase the production of both baccalaureate and associate degrees, and to do so with considerations to racial equity.

At the same time, there is also evidence that suggests that there are opportunities for improvement with the approval and implementation of CCBs. Ortagus et al. (2019) found that while there were increases in associate degree production, there was a decrease of associate degrees with a STEM (science, technology, engineering, mathematics) CIP (Classification of Instructional

Programs) codes produced for students identified as Black or Hispanic. Park, Tandberg, Shim, Hu, and Herrington (2018) also highlight that CCBs have not been accompanied by increases in the number or diversity of students earning bachelor's degrees in teacher education in Florida. Another study by Ortagus and Hu (2020) recently found a correlation between early CCB adoption and increases in tuition and fees at public community colleges.

Combined, early scholarship has documented the intended and unintended consequences of the CCB in the higher education landscape and for specific student communities. While these studies are important contributors to our understanding of the impact of CCBs, there remain important knowledge gaps, particularly associated with implementing CCB programs, funding of CCBs, quality of the programs, long-term labor market outcomes, and other potential benefits and challenges of participating in CCBs.

### **California's CCBs: Former Legislative Efforts and New Context**

Over the past two decades, legislative efforts by various state leaders in California established the foundation for the strong support for CCBs in the nation's largest community college system. Assembly Bill (AB) 1932, the first effort to allow CCBs in the state, was proposed in 2004 by Assembly member Bill Maze. This bill would have established an advisory committee to recommend a framework allowing two community colleges located in the Central Valley, an area with limited four-year degree options, to offer baccalaureate degrees. It did not pass. In 2009, Assembly member Jerry Hill authored AB 1455, which would have allowed San Mateo Community College District in the Bay Area to confer CCBs. It did not pass. In consecutive years, Assembly member Marty Block authored AB 2400 (2010) and AB 661 (2011) allowing the same Bay Area college district and another in San Diego to pilot these bachelor's degrees. AB 2400 did not gain sufficient support, but AB 661 passed the Higher Education Committee. Unfortunately, the bill failed in the General

Assembly. These earlier legislative attempts were limited in scope and size, but set the necessary rationale and precedent for more recent legislation.

A pivotal turning point was the passage of California State Senate Bill (SB) 850, which stated that, beginning on January 1, 2015, the Board of Governors, in consultation with the CSU and UC systems, would be authorized to create a statewide baccalaureate degree pilot program at no more than 15 community college districts. Specifically, authored by Senator Marty Block, the bill:

...would require a district baccalaureate degree pilot program to commence by the beginning of the 2017-18 academic year, and would require a student participating in a baccalaureate degree pilot program to complete his or her degree by the end of the 2022-23 academic year. The bill would require participating community college districts to meet specified requirements, including, but not limited to, offering baccalaureate degree programs and program curricula not offered by the California State University or the University of California, and in subject areas with unmet workforce needs, as specified.

Since the authorization of SB 850, colleges have operated these 15 programs (see Table 4). On October 6, 2021, the Governor of California signed Assembly Bill 927 (AB 927) to allow community colleges throughout the state to expand these programs and existing CCBs to continue operating—consequently, they are no longer considered “pilot” programs. AB 927 is an important next step; the new bill allows the current programs to exist permanently and expands the number of new programs by 30 each academic year. It is the expectation that AB 927 will provide a clear path towards a baccalaureate degree to all Californians, which is key for fostering social and economic mobility. Furthermore, the CCB programs are one concrete tool that the state of California has to close existing racial equity gaps in the state of California.

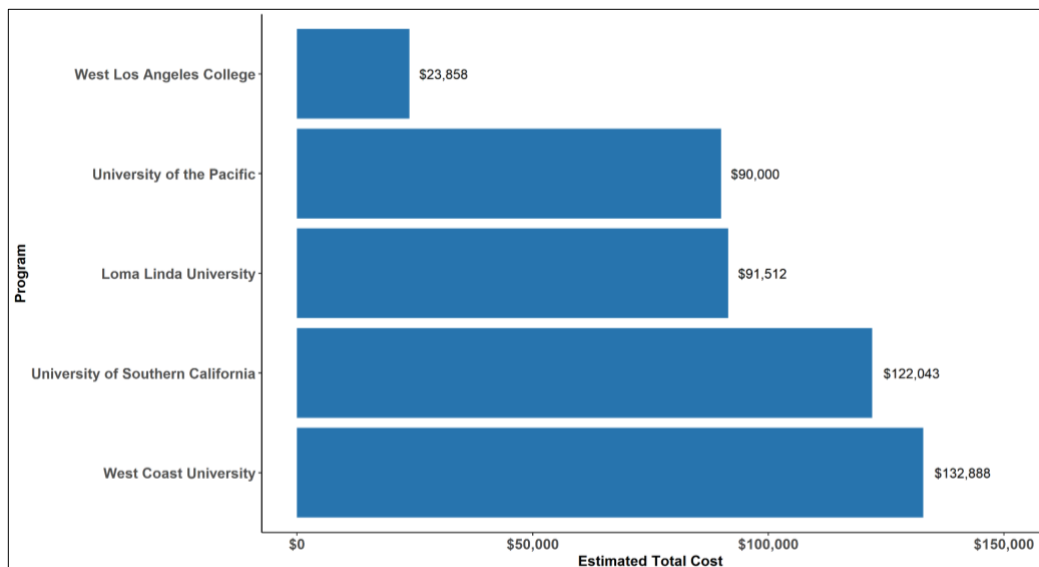
**Table 4. First 15 California CCB Programs by College and Related Occupations**

Program Name	College Name	Related Occupations
Airframe Manufacturing Technology	Antelope Valley	<b>Aerospace engineering and operations technologists and technicians;</b> Aerospace engineers; Aircraft mechanics and service technicians; Aircraft structure, services, rigging, and systems assemblers; Avionics technicians
Automotive Technology	Rio Hondo	<b>Automotive service technicians and mechanics;</b> Vehicle mechanic; Insurance appraisers, auto damage; Electronic equipment installers and repairers, motor vehicles; Automotive shop or service manager
Biomanufacturing	Mira Costa and Solano	<b>Biological technicians;</b> Biomedical engineers; Biochemists and biophysicists
Dental Hygiene	Foothill and West Los Angeles	<b>Dental hygienists;</b> Dental assistants
Equine and Ranch Management	Feather River	<b>Farmers, ranchers, and other agricultural managers;</b> Animal scientists; Agricultural and food science technicians; Veterinary assistants and laboratory animal caretakers; Animal breeders
Health Information Management	San Diego Mesa and Shasta	<b>Medical and Health Services Managers;</b> Medical records and health information technicians; Medical secretaries
Industrial Automation	Bakersfield	<b>Industrial production manager;</b> Transportation, storage, and distribution managers
Interaction Design	Santa Monica	<b>Web developers and digital interface designers;</b> Software developers, systems software; Software developers, applications; Graphic designers
Mortuary Science	Cypress	<b>Funeral service managers;</b> Funeral service workers
Occupational Studies	Santa Ana	<b>Occupational therapy assistants and aides</b>
Respiratory Care	Modesto and Skyline	<b>Respiratory therapists;</b> Respiratory therapy technicians

*Source:* Authors used a Classification of Instructional Programs (CIP) and Standard Occupational Classification (SOC) crosswalk to link the first 15 CCB programs to related occupations using O\*Net’s CIP-SOC Crosswalk (National Center for O\*NET Department, 2019).

The legislative progress and support for the function and need for the CCBs in California has been consistent with how other key education leaders and stakeholders have viewed the CCB. According to the California Community College Baccalaureate Association (CCCBA), the goals of CCBs programs are to “address workforce needs where employers require or prefer a bachelor’s degree for employment eligibility” (CCCBA, 2022). The California community colleges have consistently served as the accessible and affordable in California’s postsecondary landscape. The California CCBs is a continuation of this vision and mission. For example, figures from Aguiar et al. (2022) suggest enrollment in West Los Angeles College’s dental hygiene program in lieu of similar programs at nearby institutions would generate cost savings ranging from approximately \$65,000 to \$109,000 (see Figure 6). Across the state, many entities support the mission and vision, and potential for the CCB to provide accessible and affordable pathways for bachelor’s degrees for place-bound students and address local labor market needs. This support speaks not only to the potential of the CCB, but the need for its existence and expansion.

**Figure 6. Comparison of Cost of Dental Hygiene Program at West Los Angeles College to Nearby Programs in the Region, 2021**



Source: Figure adapted from Aguiar et al. (2022).



## **California's CCBs: Descriptive Analysis of its Impact on Students' Academic and Occupational Outcomes**

In the following sections, we provide a descriptive profile of CCB participants using data from multiple data sources to characterize the CCB enrollment, persistence, graduation, and employment patterns. We look at these data with considerations to racial equity. This analysis highlights the need for improved data collection and analysis related to CCBs.

### **Piecing Together California's CCB Data**

In 2017, the Legislative Analyst's Office (LAO) released the first interim evaluation of the CCB programs in California, which provided background information about SB 850 and described in detail the California Community Colleges Chancellor's Office's process for selecting the pilot degrees. In January 2020, LAO published its final evaluation (Petek, 2020) using administrative records from the CCCCO and survey data that the colleges collected from students who graduated from their programs. Building on this, Hoang et al. (2022) analyzed student institutional data collected from the CCB colleges to better understand enrollment, graduation, and employment outcomes, and conducted data disaggregation by gender, race/ethnicity, and age group where appropriate. While these reports have provided important information, they do not tell the complete story of CCBs in California given that they rely on different data sources. For that reason, this report synthesizes data from two distinct sources that describe the benefits and opportunities of California's CCBs: the state's administrative data (referred to as Chancellor's Data) that were analyzed by the authors and institutional data collected by the CCB colleges (referred to as Consortium Data). Upon review of both data sources, data discrepancies were identified due to differences in definitions for metrics, data reported for metrics, and metrics of focus—these factors

are not mutually independent of one another (see Tables 5, 6, 7, 8, 9, 10, and 11).<sup>1</sup> While there has been improved alignment of data management, processes, and/or reporting over time, such data discrepancies should not have occurred and speak to the need of directing attention and strategic investment in the CCB data infrastructure, so that education leaders can have an accurate understanding of California's CCB program.

The Chancellor's and Consortium Data contain metrics that adhere to the same overarching concept, but go about defining the metrics in different ways. For example, there are differences in how student characteristics, like age groups, are presented (see Table 8). In the Chancellor's Data, the age group categories (18 to 22 years-old, 23 to 29 years-old, 30 to 39 years-old, and 40 years-old) differed from that of the Consortium Data (19 years-old or less, 20 to 24 years-old, 25 to 29 years-old, 30 to 34 years-old, 35 to 39 years-old, 40 to 49 years-old, 50 years-old or older). Notably, there are also differences in how gender and racial/ethnic groups are operationalized (see Table 6 and 7).

When comparing the Chancellor's and Consortium Data, there was also variation on the actual data presented by each entity. For example, the Chancellor's Data reported 704 CCB students from 2015-2020, while the Consortium Data reports 1,486 from 2016-2020 (see Table 5). Despite the different years of available data (which is another cause for data discrepancies), this is unlikely to explain more than double the amount of CCB students found in the Consortium Data. Further complicating the interpretation of these counts is that the definitions of enrollment headcounts for the Chancellor's and Consortium Data do not seemingly contradict one another. Ultimately, the total headcount of CCB students reported has implications for the total raw enrollment and persistence/graduation calculations (see Table 5, 9, and 10). However, even when calculating

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<sup>1</sup> Multiple additional data and metrics were provided in the Chancellor's Office and/or Consortium Data. For brevity and the purposes of this report, we focus on a handful of key metrics.

proportions, where appropriate, there are seemingly discrepancies with the proportion of older students (see Table 8). For example, the Chancellor's Data suggests that 10 percent of CCB students are 40 years-old or older and 24 percent of students are 30-39 years-old, while the Consortium Data suggests 19 percent and 31 percent, respectively. Combined, this would suggest that there is 16 percent discrepancy in how many CCB students are 30 years-old or older. Given the need to focus on adult learners as a unique student population within the California community college system, this discrepancy can have major implications of how support, services, and programs are being allocated.

The Chancellor's and Consortium Data also focus on different, key milestone metrics (see Tables 9, 10, and 11). While there are similarities in what the two data sources report (e.g., enrollment), the two sources contain different metrics (e.g., persistence and graduation rate). For example, the Chancellor's Data contains persistence rates by three broad racial/ethnic groups (Asian, Hispanic, white), while the Consortium Data has graduation rates by their defined racial/ethnic groups (which is different from how the Chancellor's Data operationalized it). The Consortium Data also includes self-reported employment data from graduating classes of the CCB programs; no employment data was included with the Chancellor's Data, and to the best of our knowledge, there is no comprehensive official labor market data (e.g., linked to California's Employment Development Department) about students participating in California's CCBs publicly available.

**Table 5. Chancellor’s and Consortium Data, Enrollment Data**

ENROLLMENT COUNT	CHANCELLOR’S DATA	CONSORTIUM DATA
<b>YEARS OF AVAILABLE DATA</b>	Winter 2015 - Winter 2020, depending on which program(s) provided data	Cohorts 2016-2018 and/or 2016-2020
	The dataset is comprised of cohorts of students in the first term they enrolled as a CCB student. The CCB flag is Special Populations (SP) table variable SG12 ( <a href="https://webdata.cccco.edu/ded/sg/sg12.pdf">https://webdata.cccco.edu/ded/sg/sg12.pdf</a> ). The base file is a student-college-semester level file for student characteristics, enrollment, and special populations merged to the degree file. Term-specific variables for fall, spring, and summer terms file were created, and then collapsed to student-college level. Time period covered is winter 2015 to winter 2020.	The unduplicated count of students who enrolled in an upper division course for the first time in a calendar year and received a valid grade. This includes students who enrolled in upper division courses for the first time and dropped all courses with a W. For example, the Fall 2016 cohort consists of students who enrolled in any upper division course for the first time in 2016 calendar year (e.g., spring 2016 or fall 2016) and received a valid grade (A, B, C, D, F, I, P, or W).
<b>2015–2020</b>	704	-
<b>2016–2018</b>	-	790
<b>2016–2020</b>	-	1,486

*Source:* Chancellor’s Data.

**Note.** A dash (-) is denoted in cases where data was not available or could not be displayed.

**Table 6. Chancellor’s and Consortium Data Disaggregated by Race/Ethnicity, Enrollment Rates**

ENROLLMENT RATES	CHANCELLOR’S DATA	CONSORTIUM DATA
	Enrollment figures by race/ethnicity were made available at the college-level from 2017-2019.	Enrollment figures by race/ethnicity for all cohorts from 2016-2020 are displayed below.
<b>RACE/ETHNICITY</b>		
<i>American Indian/Alaska Native</i>	-	1%
<i>Asian</i>	16%	14%
<i>Black/African American</i>	< 10	5%
<i>Filipina/o/x</i>	-	7%
<i>Native Hawaiian/Pacific Islander</i>	-	1%
<i>Hispanic/Latina/o/x</i>	26%	30%
<i>Two or more races</i>	-	6%
<i>White</i>	26%	33%
<i>Not Listed Above</i>	13%	-
<i>Unknown</i>	0%	4%

*Source:* Chancellor’s Data.

**Note.** A dash (-) is denoted in cases where data was not available or could not be displayed. Data were omitted when a subgroup had a population size less than 10. Therefore, figures displayed may not total to 100%.

**Table 7. Chancellor’s and Consortium Data Disaggregated by Gender, Enrollment Rates**

ENROLLMENT RATES	CHANCELLOR’S DATA	CONSORTIUM DATA
	Enrollment figures by age group were made available at the college-level from 2017-2019.	Data disaggregation by gender for all cohorts from 2016-2020 is displayed below.
<b>GENDER</b>		
<i>Female</i>	69%	66%
<i>Male</i>	31%	33%
<i>Non-Binary</i>	-	0%
<i>Unknown</i>	-	1%

Source: Chancellor’s Data.

**Note.** A dash (-) is denoted in cases where data was not available or could not be displayed. Data were omitted when a subgroup had a population size less than 10. Therefore, figures displayed may not total to 100%.

**Table 8. Chancellor’s and Consortium Data Disaggregated by Age Group, Enrollment Rates**

ENROLLMENT RATES	CHANCELLOR’S DATA	CONSORTIUM DATA
	Enrollment figures by age group were made available at the college-level from 2017-2019.	Data disaggregation by age group for all cohorts from 2016-2020 is displayed below.
<b>AGE GROUP</b>		
<i>18 to 22 years-old</i>	24%	-
<i>19 years-old or less</i>	-	1%
<i>23 to 29 years-old</i>	28%	-
<i>20 to 24 years-old</i>	-	22%
<i>25 to 29 years-old</i>	-	27%
<i>30 to 39 years-old</i>	24%	31%
<i>30 to 34 years-old</i>	-	20%
<i>35 to 39 years-old</i>	-	11%
<i>40 years-old or older</i>	10%	19%
<i>40 to 49 years-old</i>	-	14%
<i>50 years-old or older</i>	-	5%

Source: Chancellor’s Data.

**Note.** A dash (-) is denoted in cases where data was not available or could not be displayed. Data were omitted when a subgroup had a population size less than 10. Therefore, figures displayed may not total to 100%.

**Table 9. Chancellor’s and Consortium Data, Persistence Rates**

PERSISTENCE RATES	CHANCELLOR’S DATA	CONSORTIUM DATA
	Data were made available for 8 of the 15 CCB colleges and may not include rates for all terms for each racial/ethnic group. Data should be viewed with caution.	Data not available.
<b>Second-term persistence rate</b>	Persistence rate is measured by whether a student enrolled in the following term (excluding summers) of their initial enrollment into the CCB program.	
<i>Asian</i>	100%	-
<i>Hispanic</i>	81%	-
<i>White</i>	80%	-
<b>1-year persistence rate</b>	Persistence rate is measured by whether a student is enrolled in the following academic year of their initial enrollment into the CCB program.	
<i>Asian</i>	85%	-
<i>Hispanic</i>	35%	-
<i>White</i>	38%	-

Source: Chancellor’s Data.

**Note.** A dash (-) is denoted in cases where data was not available or could not be displayed.

**Table 10. Chancellor’s and Consortium Data, Year-Two Graduation Rates**

YEAR-TWO GRADUATION RATES	CHANCELLOR'S DATA	CONSORTIUM DATA
	Data not available.	Data disaggregation by race/ethnicity for all cohorts from 2016-2018 are displayed below. Year-two graduation rates could be defined as such: within each cohort, the unduplicated count of students who received the bachelor’s degree award by the end of spring of their second calendar year (not including the following summer) upon entry into upper-division coursework.
<b>RACE/ETHNICITY</b>		
American Indian/Alaska Native	-	43%
Asian	-	79%
Black/African American	-	50%
Filipina/o/x	-	67%
Hispanic/Latina/o/x	-	64%
Native Hawaiian/Pacific Islander	-	80%
White	-	67%
Two or more races	-	68%
Unknown	-	71%

Source: Chancellor’s Data.

**Note 1.** A dash (-) is denoted in cases where data was not available or could not be displayed.

**Note 2.** At least 9/15 colleges do not require students to be full-time, such as Antelope Valley, Feather River, Shasta. Thus, their year-two graduation rates are relatively low, but their year-three graduation rates are a lot higher. In addition, some programs have several required internship/work experience upper-division courses that place students at various businesses and organizations. For example, it was challenging for students to be in class and be on the ranches at the same time for Feather River, so students tended to complete this internship requirement in summer after their junior and senior years. Finally, Skyline allows students to enter their program with 30-to-39 lower-division general education (GE) units; thus, the delayed graduation at Skyline is because students were completing lower-division GE units after already completing upper-division coursework, and also because some opted to attend part-time.



**Table 11. Chancellor’s and Consortium Data, Employment Outcomes**

EMPLOYMENT OUTCOMES	CHANCELLOR’S DATA	CONSORTIUM DATA
		Employment outcomes data were derived from the CCB colleges’ Employment Outcomes Survey. The data reported below are from the class of 2020 (82% response rate). Data from the class 2018 and 2019 were made available and reported in the main paper, but not displayed below for brevity. Data across graduating classes are comparable. Additional survey items data are available, but select employment outcomes are reported below.
<b>Employed in California</b>		
Employed in California	-	98%
<b>Employed in the Same Field of Study</b>		
Very Close	-	84%
Close	-	14%
Not Close	-	2%
<b>Job Search Length</b>		
Employed within 3 months of searching	-	80%
<b>Average Annual Income</b>		
Income after completing the program	-	\$67,900
Income gain (compared to before starting the program)	-	\$18,400

**Note 1.** A dash (-) is denoted in cases where data was not available or could not be displayed.

**Note 2.** Sample sizes for each survey item ranged from 140-143 depending on the survey item: employed in California (n = 140), employed in the same field of study (n = 141), job search length (n = 143), and average annual income (n = 141).

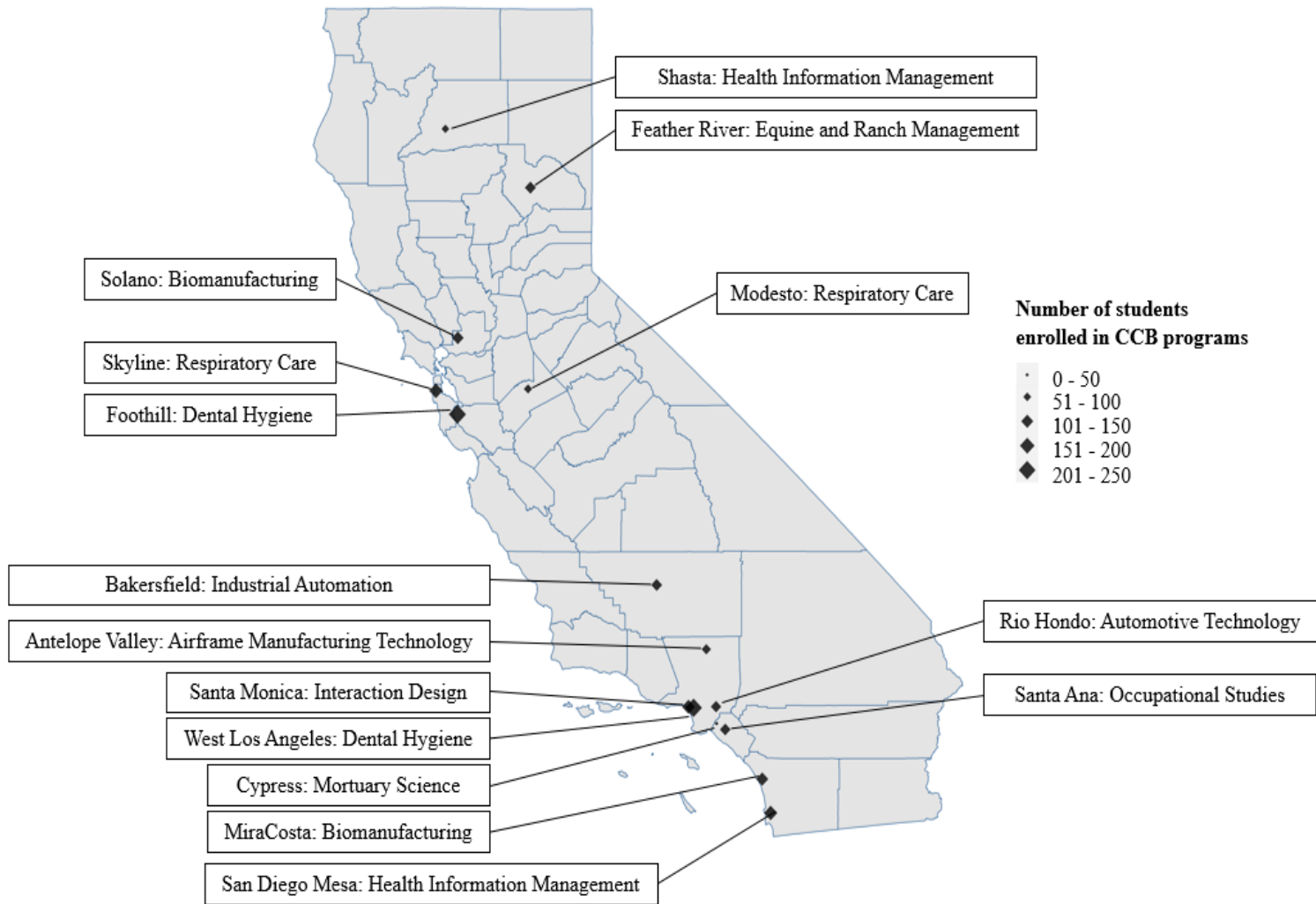
## **To Whom are California's CCBs Providing Educational Access?**

In reconciling differing enrollment counts, it is safe to say that at least 700 students have enrolled in CCB programs across California since pilot programs were approved in 2015. It should be highlighted again that the Consortium Data reports over 1,400 CCB enrolled students in contrast to the ~700 students by the Chancellor's Data. And while there are differences in which colleges have enrolled the most students (Chancellor's Data suggests that Skyline College and Modesto College have enrolled the most students in their respective CCB programs, while the Consortium Data suggests that it has been Foothill and West Los Angeles), there is geographic diversity in where CCB programs are situated across the state (see Figure 7 which shows where the CCB programs are and the reported enrollment count per the Consortium Data). For a detailed profile of students enrolled in CCB programs using Consortium Data see Hoang et al. (2022).

The state education policy community has rallied around the CCB programs as a way to meet both workforce needs and to continue to leverage community colleges as nodes of higher education access from Redding to San Diego (Weissman, 2021). Despite statewide support of the existing programs and the concept of CCBs in general, millions of students are still not yet served by these programs. In addition, there is a wide range in who enrolls in existing CCB programs across racial/ethnic groups. For example, Patek (2020), drawing from the Chancellor's Data, found that white and Asian students were more likely to enroll in the new programs relative to their Latina/o/x peers and that, academically, they resembled four-year transfers. Hoang et al. (2022), drawing from the Consortium Data, also identified underrepresentation of Latina/o/x students enrolled in CCBs on average, despite positive graduation rates relative to Latina/o/x transfer students in the California State University. It is likely that the demographics of who enrolls in the CCB programs reflect the communities where the CCBs are situated, as well as program characteristics. For

example, West Los Angeles College has enrolled a plurality of Latina/o/x students, which are no doubt influenced by local populations in Southern California. West Los Angeles College’s program is also in the healthcare field, which maintains a diverse workforce across the state. At Santa Monica College, conversely, enrollees in their CCB program in Interaction Design have been mostly white—so too, however, is the design profession (AIGA, 2021). As it is, geography and racial/ethnic heterogeneity are only some aspects with which CCB program diversity can be analyzed, but institutional characteristics and outreach/recruitment practices can also impact CCB enrollment.

Figure 7. Geography of CCB Enrollment in California



Source: Consortium Data.

With programs likely expanding beyond the existing pilot colleges as a result of the successful passage of AB 927, more opportunities will soon exist to recruit from communities that the California community colleges are likely to disproportionately over-enroll relative to the UC and CSU system, such as students of color, students from economically disadvantaged backgrounds, first-generation college students, student parents, part-time students, and a host of other socioeconomic roles and identities long associated with community college. Incorporating CCBs into existing efforts to serve those community college students—such as Puente, Umoja, Upward Bound, and other college access and success programs that provide students with targeted academic and sociocultural resources to improve persistence and graduation (Gándara & Cuellar, 2016)—is likely to translate into benefits for students, institutions, and broader state policy goals. CCB program leaders in other states have also established outreach and recruitment plans in their local region by informing high school and middle students and counselors about the opportunities these degrees provide, as well as developing partnerships with industry leaders (Cuellar & Gándara, 2021). California should consider adopting such similar practices. Multi-pronged approaches can not only expand awareness of these programs, but also ensure adequate representation and resources for students from diverse backgrounds who are often best served by the culturally-responsive environments of community colleges (Alcantar & Hernandez, 2020).

All told, it is essential to continue collecting and analyzing disaggregated data to highlight the diversity embedded in the CCB programs throughout the state and to track important racial equity gaps to ensure they are closed over time. Joint disaggregation of race and additional characteristics (e.g., gender) should be conducted to consider multi-dimensionality and intersectionality of students' lived experiences. This also requires the requisite technical and administrative infrastructure to

collect and analyze such data. As such, the state should consider expanding data infrastructure capabilities anytime it is creating new programs and raising enrollments.

### **Student Success and Outcomes in California CCB Programs: What We Know So Far**

In addition to analyzing enrollment patterns in CCB programs, we were also interested in program outcomes, including graduation rates and post-graduation employment outcomes. Average year-two and year-three graduation rates for CCB programs were 67 percent and 78 percent, respectively, in California across three student cohorts (Hoang et al., 2022). The data show graduation trends by race/ethnicity that are not too dissimilar from the broader community college student population; Asian and white students graduating at higher rates than Black and Latina/o/x students (see Table 10). Such distinctions, particularly the white-Latina/o/x gap in graduation rates shown in Consortium Data (see Table 10), are smaller on average compared to those observed for bachelor's degree attainment for the U.S. population as a whole (Flores, Carroll, & Lyons, 2021), suggesting the promise of these programs for mitigating at least some existing racial/ethnic disparities in degree attainment. In addition, year-two graduation rates ranging from 53 percent to 80 percent depending on the gender identity, racial/ethnic group, or age group (where data were not omitted due to small cohort size) (see Hoang et al. 2022 for a detailed profile of students' year-two and year-three graduation rates in CCB programs using Consortium Data).

For analysis of employment outcomes, we relied exclusively on the Consortium Data, since they have engaged in an extensive effort to track their graduates and to survey them to better understand their college experiences and life after obtaining a baccalaureate degree. Based on descriptive analyses, CCB graduates have been relatively successful in gaining employment across three graduating classes, despite the global COVID-19 pandemic and economic recession (see Table

12). In addition to employment data, graduates of CCB programs reported that their current job is in California and closely related to their field of study. Analyses of the survey data from CCB program graduates also show significant increases in income after receiving bachelor’s degrees, with the class of 2018 reporting as high as a \$31,900 income gain.

**Table 12. CCB Employment Outcomes, Class of 2018, 2019, and 2020**

Survey Item	Class of 2018	Class of 2019	Class of 2020
Employed in California	92%	95%	98%
Employment ‘Close’ or ‘Very Close’ to Field of Study	96%	94%	98%
Employed within 3 Months of Job Search	82%	78%	80%
Average Income After Completing the Program	\$70,400	\$56,600	\$67,900
Average Income Gain Compared to Before Starting the Program	\$31,900	\$15,200	\$18,400

*Source:* Consortium Data.

Employment outcomes for California CCB students are generally favorable and certainly attest to the data presented in this paper’s introduction on the economic value of four-year degrees in California. As with any degree program at any college or university in the state, however, improving persistence and graduation rates among CCB students should be an important goal for policymakers and administrators going forward so that students can achieve these beneficial employment outcomes. In California, we are already learning how CCBs can thrive. For example, Aguiar et al. (2022) highlight the West Los Angeles College’s 75 percent year-two graduation rate and 83 percent year-three graduation rate. Practitioners at West Los Angeles College cite and are guided by four pillars—strong leadership, college culture, program quality, and workforce connections—in their development and maintenance of their high-performing CCB program. To

ensure success of programs and their students, state education leaders can also look to a successful CCB implementation in other states, like Florida, that has helped transform the educational landscape in the region.

## **What Can California Learn from Other States Adopting CCBs?**

### **Enrollment, Completion, and Earnings: Lessons from Florida & Washington**

As previously mentioned, Florida and Washington have some of the oldest and most extensive CCB programs in the country, and they are consistently mentioned in the CCB discourse. Like California, Florida has a large Latina/o/x population, with gaps in degree attainment by race/ethnicity (Cuellar & Gándara, 2021).<sup>2</sup> Washington’s Latina/o/x population is also growing—it now ranks 15th among the states in percent share of the population that is Latina/o/x (State of Washington Office of Financial Management, 2021). Florida and Washington also face similar nursing and teaching shortages that helped fuel initial interest in CCBs (Floyd & Walker, 2008). Despite these similarities, Florida and Washington are much further along in their implementation of CCB programs as they have been around longer. While Florida and Washington’s programs—like any program that aims to support equity—have areas for improvement, they can provide insight for California’s implementation of CCB programs given their program popularity, enrollment and completion rates by race/ethnicity, and student employment outcomes.

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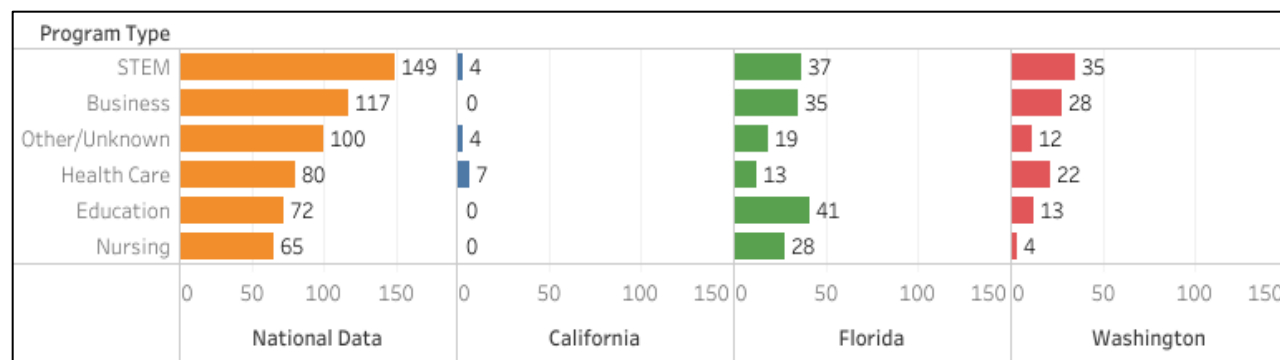
<sup>2</sup> It is important to note that the Latina/o/x population in California is overwhelmingly Mexican (84 percent), whereas the plurality of Latina/o/x in Florida are Cuban (41 percent) (Pew Research Center, 2004). Latina/o/x people of Cuban origin (29.7 percent) are more likely to have postsecondary degrees than Mexican Americans (11.9 percent). Latina/o/x people in California are also more likely to have been born in the United States than those in Florida, which may have a positive impact on degree attainment. In 2016, 20.7 percent of Latina/o/x people born in the U.S. had a bachelor’s degree or above, as compared to 12.5 percent of Latina/o/x people born elsewhere (Schak & Nichols, 2018). These differences in the history of immigration and nativity may underlie many of the differences in educational trajectories seen between the populations of these two states. Simply indicating that there is a large Latina/o/x population in a particular location does not tell the full story.



## Program Popularity

Figure 8 shows the types of CCB programs offered in California, Florida, and Washington, as compared to national data.

**Figure 8. CCB Programs by Area of Study in California, Florida, and Washington**



*Source:* Figure adapted from Meza and Love (2022) and Integrated Postsecondary Education Data System (IPEDS) (2020).

**Note.** Following Meza and Love (2022), California’s STEM programs were classified according to the Department of Homeland Security’s STEM Designated Degree Program List.

Although California has yet to create any CCB programs classified as “business,” it is one of the largest fields in Florida and Washington, both in terms of number of programs and student enrollment. In the 2018-19 academic year, 20,507 of the 44,198 CCB students enrolled in the Florida College System (FCS) were in a business program (Florida Department of Education, 2020). Washington’s business programs have also been one of its most popular—comprising 34% of enrollments between 2009 and 2018. Meza (2019) suggests that business programs in Washington enjoyed long-standing popularity, in part, because they were among the earliest to be offered in the state. Once high-wage and -demand STEM programs were launched in 2013, however, STEM programs continued to grow until surpassing business and healthcare (Meza, 2019). These trends indicate that—although older CCB programs benefit from an established reputation among students,

faculty, and employers, as well as other resources derived from experience—students can be drawn to new programs with clearly articulated links to the labor market.

Explaining why certain CCB programs flourish while others remain less popular requires understanding labor market trends, the program proposal process, state lawmakers' and educational leaders' interests, *and* students' perceptions of the labor market. For example, Florida's business program enrollments are larger than both nursing and education, which are the occupations that originally helped inspire the creation of CCBs in the state. Combined with evidence that the Florida College System is not contributing significantly to the production of nurses and teachers in Florida (Daun-Barnett & Escalante, 2014), the popularity of business degrees and their connection to labor market needs warrants further investigation. Why are business degrees so appealing to students, while teaching and nursing were appealing to legislators? Further research is needed to better understand students' enrollment/major decisions and the information they use to assess demand in the labor market, independent of assessments conducted by the state.

### ***Racial and Ethnic Differences in Enrollment and Completion***

As previously mentioned, one concern expressed by the Legislative Analyst's Office about the California CCB pilot programs is that they had much higher proportions of white and Asian students enrolled and much lower proportions of Latina/o/x students as compared to their community college campuses as a whole (Petek, 2020). Although Florida's CCB program has been around longer than California's, Florida still does not enroll Latina/o/x students in CCBs at the same rate as other credit programs: 31.7 percent of students enrolled in credit programs in 2020-21 were Latina/o/x, as compared to 24.8 percent of CCB students (see Table 13). However, Florida's CCBs do enroll African American, American Indian, multiracial, Asian, and Pacific Islander students at rates comparable to all credit programs as a whole. In Washington, enrollment rates are similar

across programs for students from different racial groups, which is consistent with previous evidence that the state’s CCBs are as diverse as other community college programs (Meza, 2019).

**Table 13. Percent of Enrolled Students by Race/Ethnicity and Program, 2020-21**

	Florida		Washington	
	All Credit Programs N=446,853	CCB N=47,197	Workforce* N=120,892	CCB** N=6,527
Asian	2.6	2.8	10	12.7
American Indian	0.2	0.3	1	1.1
African American	17.6	18	6.2	7.2
Latina/o/x	31.7	24.8	9.9	9.8
White	37.1	46.8	47.9	48.9
Pacific Islander	0.2	0.2	0.8	0.5
Two or More Races	3.5	2.9	13.3	13.7
Unknown/Non-Resident	7.0	4.2	11	6.1

\*These are students enrolled in “professional/technical” programs.

\*\*These students are “BAS (matriculated)”: they are enrolled in a bachelor’s degree program with the intention of getting a bachelor’s degree, in contrast to simply taking bachelor’s level courses.

Source: Florida Department of Education (2022); Washington State Board for Community and Technical Colleges (2021)

These data indicate that more mature programs can successfully attract a diverse student body, although doing so likely requires a sustained and concerted effort to measure and address any racial disparities in enrollment and retention that may emerge (Cuellar & Gándara, 2021).

We do not have CCB graduation rates by race/ethnicity for the states of Florida and Washington as a whole. However, we can see the racial composition of the baccalaureate graduating classes of 2019-2020 at different institutional types (i.e., community college versus traditional four-year university) in Table 14.

**Table 14. Percent of Students Receiving a Baccalaureate by Race/Ethnicity and Institutional Type, 2019-20**

	Florida		Washington	
	Community Colleges (N=28)*	Four-Year Institutions** (N=74)	Community Colleges (N=29)	Four-Year Institutions** (N=30)
Asian	2.5	4.4	9.5	12.2
American Indian/Alaska Native	0.3	0.2	0.9	0.8
African American	16.5	12.5	5.2	3.1
Latina/o/x	22.7	26.4	11.2	11.3
White	50.8	46.0	55.2	55.1
Pacific Islander	0.3	0.2	0.4	0.5
Two or More Races	2.5	3.4	7.5	6.9
Unknown/Non-Resident	4.4	7.0	10.2	10.1

\*\*Public and private, non-profit four-year and above institutions by IPEDS sector, not including community colleges. *Source:* IPEDS (2020).

The graduating classes of the community college system are (more or less) as racially diverse as those of the four-year sector. There are some notable differences. In Florida, the percentage of bachelor’s degree graduates who are African-American is higher in the community college system relative to traditional four-year institutions. The reverse is true for Latina/o/x students. Love (2020) noted a similar trend in her analysis of a subset of Florida College System (FCS) graduates: Florida State University System (SUS) graduates were more likely to be Latina/o/x (27 percent) than FCS graduates, while SUS graduates were less likely to be Black (12 percent) than FCS graduates (16 percent).

It is important to note, however, that racial diversity varies by field of study. Meza & Bragg (2020a) find larger proportions of African-American graduates in healthcare and Latina/o/x

graduates in business in Washington's CCBs as compared to its public universities. Similarly, Love (2020) notes that Latina/o/x students are overrepresented among information technology graduates in Florida (33 percent) as compared to their share of the state population (26 percent). Broadly speaking, there are also racial disparities in who participates in STEM CCBs (i.e., less likely to be African American or Latina/o/x) in Florida (Ortagus et al., 2019) and Washington (Meza, 2019). These variations indicate a need for fine-grained data on students' outcomes by race/ethnicity and program of study, along with additional demographic characteristics of note (e.g., gender and age). When we ask who CCB programs are truly serving, the most useful answers should consider multiple dimensions of students' characteristics and their field of study.

### ***Employment Outcomes***

Both Florida and Washington's CCB alumni enjoy high rates of employment or continuing education after graduation. Eighty-one percent of 2018-2019 Florida College System bachelor's degree completers were either employed or continuing their education in the October-December 2019 quarter (Florida Department of Education, 2021a). Similarly, an average of 75 percent of Washington CCB graduates from 2009 to 2017 were employed by the fourth quarter after graduation (Meza & Bragg, 2020b). In both states, employment rates and wages in the years immediately following graduation tend to be higher for CCB graduates than for graduates of public four-year colleges. In Bloomfield's (2020) analysis of Florida College System and Florida State University System outcome data from 2012 to 2017, FCS graduates were more likely than SUS graduates to be employed five years after graduation (72 percent versus 59 percent) and to have higher median earnings (\$51,396 versus \$49,580). Meza and Bragg (2020a) find a similar trend for Washington graduates, with 76.8 percent of CCB students being employed by the fourth quarter after graduation compared to only 70.3 percent of university graduates.

As indicated in Table 15, earnings differences between CCB and university graduates in key fields tend to shrink over time—a trend which is true in both Washington and Florida (Bloomfield, 2020).

**Table 15. Annualized Earnings for Washington’s CCB Graduates and University Graduates in Popular Program Areas**

Program	CCB Graduates			University Graduates		
	1st Quarter	4th Quarter	12th Quarter	1st Quarter	4th Quarter	12th Quarter
Business	\$40,000	\$45,200	\$49,200	\$32,400	\$42,000	\$53,200
Computer & Info Sciences	\$47,600	\$52,000	N/A	\$42,400	\$49,200	N/A
Healthcare	\$50,000	\$60,000	\$68,400	\$51,600	\$66,000	\$72,400
Visual & Performing Arts	\$32,800	\$39,600	\$50,000	\$23,600	\$38,800	\$48,400

Source: Adapted from Meza & Bragg (2020a).

**Note.** These numbers all represent *annualized* earnings based on the quarter indicated. Because Computer and Information Sciences are new CCBs, Meza & Bragg (2020a) were unable to calculate 12<sup>th</sup> quarter earnings for these programs.

Given that CCB students are older and are often working while attending school, they are likely to have more work experience than their counterparts at traditional four-year universities. They may also be using their CCB program strategically—to advance in a specific workplace at which they are already employed. Their initial higher employment and earnings post-graduation may reflect these experiences and aspirations. Furthermore, CCBs are designed to prepare students to enter high-paying jobs in applied fields, so even though program names are similar across community and four-year colleges, their targeted occupations may be vastly different (Bloomfield, 2020). Notice, for example, that CCB earnings in Visual & Performing Arts remain higher than those of university graduates over the course of 12 quarters. Graduates of CCBs may be engaging in more applied

visual art (e.g., graphic design) than those in university programs and thus, may earn more over their careers.

In most fields, however, as university graduates gain a foothold in the labor market, their earnings meet and begin to exceed those of CCB alumni. Social capital, networks, and/or reputations of four-year colleges and universities may be related to graduates' earnings as they advance in their careers. And the broader liberal arts training on such campuses may signal and/or engender social status and skills that allow university graduates to adapt to the workplace and transition into leadership positions. Unfortunately, we need more research on how employers perceive CCBs—whether or not they have the same reputation as comparable university programs—and the extent to which CCB programs can inculcate leadership, communication, and creative problem-solving skills alongside technical training (Hora, Benbow, & Oleson, 2016). However, the fact that racial differences in hiring exist even after controlling for the selectivity of a job candidate's alma mater suggests that pure racial discrimination also plays a role in wage and employment differences over time (Gaddis, 2015). If CCBs are designed to serve students from historically minoritized backgrounds, then their students are more likely to contend with racism in the labor market. Given this challenge, there is also a need to intentionally understand, develop, and implement pathways for CCB students to pursue stable high-paying positions with opportunities for career mobility.

As a final note, it is important to keep in mind other non-economic returns to education that are not captured in employment and earnings numbers. From the perspective of the state, community colleges are an excellent return on investment, as they reach populations of students who might not otherwise have been welcome or free to enroll in postsecondary education. In a

study commissioned by the Florida Department of Education, Emsi (2013) calculated social savings from the positive externalities of education. Because postsecondary education boosts health outcomes, lowers involvement in crime, and lessens the need for welfare and unemployment benefits, the total avoided social costs associated with the 2011-12 Florida College System student body equals approximately \$158.6 million at their career midpoint. Ninety-three percent of FCS students remain in Florida, which means that their increased knowledge and higher levels of civic engagement directly benefit the state (Emsi, 2013). CCB programs strategically designed for both technical training and the development of the student as a citizen, family member, information consumer, and human may do even more to enhance the well-being of the student and their surrounding community.

### **Program Approval and Duplication: The Limiting Force of the California Master Plan**

Most states with CCBs place limits on the number and type of programs community colleges can offer—in part, to retain the system’s focus on workforce development and transfer (Love & Palmer, 2020). However, state-by-state differences in authorization and regulation make proposing new programs more or less challenging in different contexts. In Michigan, for example, the original legislation approving CCBs explicitly limited programs to four fields: cement technology, maritime technology, energy production technology, and culinary arts (Zielak, 2017). Despite growing workforce needs in areas like nursing and manufacturing technology, proponents of CCBs in the state have been unable to pass legislation to expand programs to these fields (Bray, 2022). The narrow wording of the original law means that new programs need to be established through new legislation, and opponents of CCBs in the legislature can easily point to existing programs at four-year universities as evidence that such new CCBs are unnecessary (Zielak, 2017). As a result, there



are only five active CCB programs in Michigan (Love et al., 2021) and a disequilibrium in supplying qualified workers in fields where there is clearly high labor market demand.<sup>3</sup>

Florida, which maintains one of the largest CCB offerings in the country (Love et al., 2021), has a more permissive approval process, and the Division of Florida Colleges (DFC)—namely, the community college system itself—is involved at every stage. DFC is charged with reviewing preliminary proposals, identifying deficiencies for correction, sending proposals, alternative proposals, and objections to the State Board of Education for final review (Florida Department of Education, 2012). DFC must also share early proposals with public and private four-year colleges and universities, and to receive their objections and alternative proposals (Florida Early Learning-20 Education Code, 2021). Despite the fact that four-year institutions can object, Florida has been able to establish at least one CCB program at every community college, in part, because the community college system itself is in charge of the approval process (Love & Palmer, 2020).

In California, the Chancellor and the Board of Governors of the California Community Colleges have a similar level of involvement, which bodes well for the future expansion of CCBs across the state (California Education Code, 2021). As in Florida, the California Community Colleges Chancellor’s Office consults with the University of California and California State University systems as part of the approval process (Weissman, 2021). Unlike in Florida, however, the CCCCO cannot “offer a baccalaureate degree program or program curricula already offered by the California State University or the University of California” (California Education Code, 2021). Furthermore, the UC and CSU can argue that programs are duplicative, beyond the program name

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<sup>3</sup> Recently, the Michigan state budget provided funding for BSN programs created in partnership with four-year colleges that students can complete on community college campuses. While these programs represent a big step forward in addressing nursing shortages in the state, they are not the same as CCBs, which allow community colleges to design and offer their own BSN programs (Manning, 2022).

and basic description (California Education Code, 2021). The degree to which these provisions will hamper program expansion remains to be seen, as the CCBs move further from their pilot stage and into significant expansion, as permitted by the new AB 927 legislation.

As with other decisions regarding the Californian higher education system, this resistance to duplication likely reflects the enduring legacy of the CA Master Plan for Higher Education. Adopted in 1960, the CA Master Plan formalized a tripartite system of higher education in the state, with guidelines for the activities (e.g., research) and students (e.g., doctoral students) each sector is responsible for (Coons et al., 1960). Despite the fact that some scholars believe its effectiveness peaked in 1968 (Douglass, 2010), it continues to carry rhetorical weight in key debates about Californian higher education and shapes decisions about funding for and access to the UC, CSU, and CCC (Johnson & Li, 2010). While the CA Master Plan has intuitive appeal and historical momentum, there are some reasons why evoking it in this instance may not be useful.

After its approval, the CA Master Plan was widely considered a triumph of modern rational planning—serving as an example for other higher educational systems, governments, and even international intergovernmental organizations (Marginson, 2017).<sup>4</sup> However, many historians of the Master Plan argue that it should be remembered—not as a carefully considered plan to take California in a new direction—but rather as a political contest, aimed at preserving what already existed (Douglass, 2000; Marginson, 2016) and stratifying California’s higher education system across racial lines (Biondi, 2012; Cole, 2020). It was largely intended to maintain the political and economic significance of the UC, boost the prestige of the CSU, keep the California postsecondary system from state oversight, and expand access to higher education for Californians, while simultaneously

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<sup>4</sup> In 1963, the Organization for Economic Co-Operation and Development (OECD) urged its member nations to adopt “development plans of the California type” (Marginson, 2017, p. 51)

controlling costs. The California community colleges were a key component of this latter goal, yet also had the least say in the outcome (Douglass, 2000). Because it was created with a particular goal for a particular time, there are many ways in which it *limits* access to higher education in the state in our modern time.

First, the architects of the CA Master Plan did not account for growth in the credential society, including changes to training requirements for certain professions (Collins, 2019). For example, in their 2011 report, the Institute of Medicine recommended that, in order to keep up with the growing demands of the healthcare system, 80 percent of nurses should have a baccalaureate degree by 2020. At the time of the report's publication, only 36 percent of nurses had a BSN (Institute of Medicine, 2011). Concerted efforts to meet this goal—including developing more RN (Registered Nurse) to BSN (Bachelor of Science in Nursing) programs to provide additional training for RNs with associates degrees to complete their bachelor's degrees—helped this number grow to 62 percent by 2018 (National Academies of Sciences, Engineering and Medicine, 2021). However, according to the American Association of Colleges of Nursing, the capacity of four-year colleges and universities remains a limiting factor in further progress: “U.S. nursing schools turned away 80,407 qualified applicants from baccalaureate and graduate nursing programs in 2019 due to insufficient number of faculty, clinical sites, classroom space, and clinical preceptors, as well as budget constraints” (American Association of Colleges of Nursing, 2020). Such accounts align with the status of CSU's nursing programs where about half of “RN to BSN” programs are impacted (The Campaign for College Opportunity, 2021). Due to the CA Master Plan, the California community colleges cannot currently offer BSNs and, thus, are hamstrung in their ability to help the state meet professional credentialing goals.

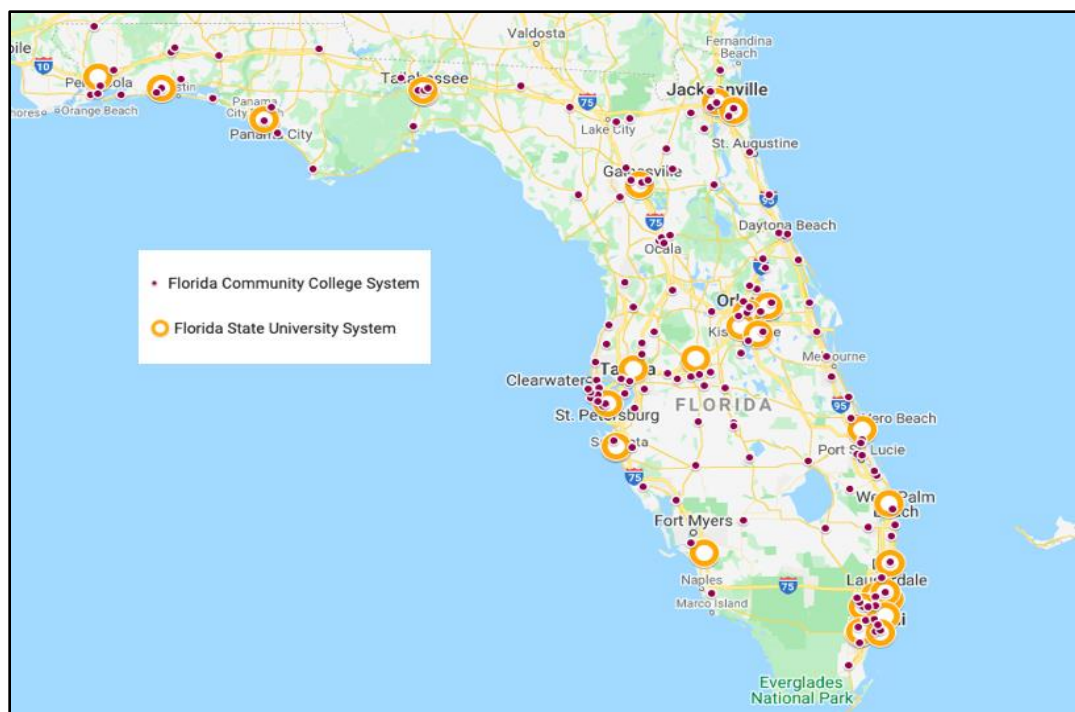
Second, the CA Master Plan is inflexible to population growth and change, which keeps it from fulfilling its original promise of expanded access to higher education (Douglass, 2010). The original CA Master Plan guaranteed admission to postsecondary education for every qualified Californian who chose to apply—with the UC selecting from the top 12.5 percent of applicants, the CSU selecting from the top 33.3 percent, and the community colleges offering admission to all other eligible students (Coons et al., 1960). Today, however, nearly half of California high school students complete the minimum coursework required for admission to the UC and/or CSU, which means that these institutions must regularly raise their admissions standards to stay within the CA Master Plan’s original enrollment proportions. The average high school GPA of students admitted to the UC is near, at, or above 4.0 across all campuses, and GPA requirements for CSU admission have increased as well (The Campaign for College Opportunity, 2021). Where do eligible students who are unable to gain admission to the UC or CSU go? Some end up in community colleges with the intention of transferring to four-year institutions. However, such aspirations may not be realized due to a variety of structural and systemic barriers. Transfer rates remain low for all students, and are lower still among Latina/o/x and African American or Black students (Johnson & Cuellar Mejia, 2020). The enrollment limits imposed by the CA Master Plan have resulted in California being ranked 49th among the 50 states in the share of public four-year undergraduate enrollment (The Campaign for College Opportunity, 2021).

Finally, the CA Master Plan assumed that students are completely mobile within the system, and choose to go to the most-selective school at which they gain admission without regard to geographic location or family and work responsibilities. Florida offers a good counterexample for understanding how students’ life circumstances make program duplication a fine choice and one that

can advance racial equity. In 2015, approximately 60 percent of the Florida College System bachelor's programs were also offered by the State University System, yet the SUS has not experienced any notable enrollment declines in these areas (Sikes, 2015). Why is this the case? In the FCS, students tend to be older, economically disadvantaged, and more likely to be attending part-time than State University System (SUS) students. In 2013-14, the median student age at FCS was 31, as compared to 22 for upper-division SUS students. Seventy-six percent of FCS students were enrolled part-time, while 31 percent of SUS students were enrolled part-time. Forty-four percent of FCS students were eligible for Pell Grants, as opposed to 39 percent at SUS (Sikes, 2015).

CCBs are particularly appealing to older, working students with families and geographical constraints. First, community colleges typically have more locations across the state than their four-year counterparts. As Figure 9 shows, FCS campuses serve areas that SUS does not cover.

**Figure 9. Locations of Florida State University System and Florida College System Campuses**



*Source:* Florida Department of Education (2021b, 2021c); State University System of Florida (2021).

**Note.** This map includes all campuses of both the FCS and SUS, including satellite campuses and instructional centers. The College of the Florida Keys, on the island of Key West, is not pictured here.

CCBs also offer programs with lower sticker costs (Florida Department of Education, 2014), has lower barriers to entry, offers flexible coursework on evenings and weekends (Ruud & Bragg, 2011), and can be less overwhelming for returning students to navigate (Berger & Malaney, 2003). In Wetzstein et al.'s (2022) qualitative evaluation of students in Washington's CCB programs, graduates expressed that they appreciated that CCB programs had flexible course schedules (night and weekend) and modalities (online and hybrid) that accommodated their lifestyles as full-time students and full-time employees. Similarly, in her interviews with Florida community college baccalaureate students, Kersenbrock (2012) found that most did not see public or private four-year colleges as viable options given their work and family responsibilities. Here, one of her respondents explains the cost of attending a different program (as quoted in Kersenbrock, 2012):

I tried University SF, but I would have had to leave my job and move, plus not get in, then University FI, same issue. I'm not even going to try University F or University N. A friend suggested Private College N. I had no idea what it was. I went to the website and it says \$20,000, I thought that's the whole program, but no that's per semester. I was like, no, I can't afford that (p. 182).

For students who have jobs and are breadwinners for their families, uprooting their lives and their children across the state to start a new degree program is a big undertaking. As a result, Kramer, Ortagus, and Donovan (2020) found that community college baccalaureate programs pose little threat to public four-year universities and the biggest threat to for-profit colleges and universities—which enroll similar populations, but cost more and produce worse outcomes for students.

In short, while the logic of the CA Master Plan may have been useful in 1960 and the decade succeeding it, California quickly outgrew its proscriptions. Students need more access to bachelor's level training than the UC and CSU can supply to successfully meet the demands of an ever-changing labor market. Concerns of program duplication in the higher education market are greatly exaggerated, since community colleges have continuously served different student communities than the CSUs and UCs, and can help address the undersupply of qualified workers in certain industries. CCB program duplication does not imply student duplication. Students who are academically prepared to complete four-year degrees are being turned away from the UC and CSU, in part, because of limits on admissions imposed by the CA Master Plan (The Campaign for College Opportunity, 2021). The CA Master Plan failed to account for the growing number of students who are constrained in their higher education choices by work, family, and geographical ties—but who,

nonetheless, are skilled enough to successfully pursue four-year degrees. When it comes to designing CCB programs, there is a fine balance between ensuring that community colleges do not lose sight of their original mission, and limiting their growth such that they cannot be responsive to labor market needs (Love & Palmer, 2020). In the case of California's CCB, it is possible that the CA Master Plan is driving the ardent rejection of duplication, and thus, limiting access to the bachelor's degrees that students need for their career advancement.

## Conclusion

Ensuring economic opportunity for Californians in the face of unprecedented public health and economic challenges requires a clear plan for addressing racial equity gaps that plague the state's education system (Gándara & Cuellar, 2016). Such equity goals should not be in conflict with targeted economic demands and new programs and structural changes to the state's higher education system should keep in mind regional labor market needs. The changes we propose address key concerns raised in the Legislative Analyst's Office report (e.g., low student enrollment, poor fit with the labor market demands), as well as enrollment patterns that were not presented as problematic in their report (e.g., low Latina/o/x and Black/African American student enrollment and relatively lower graduation rates among certain sub-groups of students). We also argue for the critical need to ensure that the statewide and college data sources relating to the CCB are consistent in detailing participating CCB students' profiles, as well as their labor histories, trajectories, experiences in CCB programs (e.g., internships and mentoring) and outcomes (e.g., academic and labor market).



## **Moving Forward: Opportunities Ahead**

The California Master Plan for Higher Education, as it currently stands, is obsolete and is a significant obstacle for many students of color from economically disadvantaged backgrounds who strive to complete a bachelor's degree. Furthermore, it is an important reminder that our state needs to produce more baccalaureate degree earners, with an intentional focus on Black, Indigenous, and Latina/o/x students. Recent data from the National Student Clearinghouse shows that both college enrollment and persistence have significantly dropped, particularly in community colleges and among minoritized racial/ethnic groups. This means that California must attend to this issue now with bold actions. While we acknowledge differences and areas for improvement among other states, there is merit in examining other states' CCB programs to selectively incorporate practices, processes, policies, structures, and systems that are applicable in the advance of educational equity and economic justice via California's implementation of CCBs. Upon careful examination of available data from California's CCB programs, Florida's permissive approval processes that have allowed the expansive implementation CCBs, and Washington's significant progress in implementing CCBs while centering racial equity, we argue that this is a pivotal moment. Adoption and embrace of CCBs in California has the potential to address weaknesses in the design of the state's educational pipeline and transform California's public higher education landscape. With the passage of Assembly Bill 927, new CCB programs can be created every year and/or existing ones will be renewed ("Public postsecondary education...", 2021). Such legislation provides state education leaders with an existing framework to grow and to support CCBs, and by extension, students and their communities. While this step is important, we urge legislators, administrators, practitioners, and other education leaders to consider addressing the following issues in the plans to expand CCB programs:

## 1. Center racial equity

Colleges interested in expanding and/or creating new CCBs need to develop strategies to attract more students from diverse racial/ethnic backgrounds, as well as students who can significantly benefit from participation in CCB programs, including student parents, first-generation college students, and adult learners. Legislation needs to also center racial equity while documenting and highlighting the economic value of CCB programs. A concrete way to achieve this goal is to look to other states. Washington, for example, has passed legislation that contains the following race-conscious language (Revised Code of Washington, 2021):

The legislature finds it essential that Washington students, especially low-income students and students of color, have the necessary credentials to secure the high-demand jobs of the future... The legislature also finds that the state can do a better job of training Washington residents to secure these living wage jobs of the future. Additionally, of the 1,883 computer science degrees awarded in Washington during the 2018-19 school year, only 3.8 percent were awarded to African American students, 5.6 percent to Hispanic students, and less than 1 percent to Native Americans. The legislature further finds that Washington's competitiveness in the global economy requires the state to ensure companies are able to hire a qualified workforce of Washington residents.

California can do more to advance racial equity and using language like the one proposed in Washington state is a step in the right direction. Policymakers and college administrators must also commit to tangible accountability for such promises, as well, and ensure that students and communities will draw the most benefit from added investments of state resources towards such

efforts. As programs grow, regularly and systematically collecting and reporting data on post-graduation employment and earnings by race/ethnicity and additional student characteristics will be key to assessing the impact of CCBs.

## **2. Evaluate and improve implementation, quality, and accountability**

- a. Effective program evaluation tools and resources are necessary for program growth. California must create a cohesive data and research infrastructure that is inclusive of CCB programs. This infrastructure should include data collection capabilities that support campuses with programs and be in charge of collecting data with the flexibility that programs need to consistently and reliably document the academic and career trajectories of students. As we document here, the existing data infrastructure consists of parallel data systems that can differ in how they count/report students and how they measure progress and outcomes. Streamlining data efforts will create more efficient and effective means of evaluating CCB programs. Improved data collection requires investment in human resources and research support to assess and evaluate CCB implementation and quality.
- b. Furthermore, the state cannot ask the Consortium to continue operating without any resources. At the state level, consistent evaluation efforts would provide programs with effective information required to continuously build and sustain CCB success for both students and institutions. The state needs to provide the programs with research support needed to track students before, during, and after participating in these programs. It needs to constantly evaluate these efforts and to provide timely and meaningful feedback to improve them.

- c. Policymakers, practitioners, researchers, and community members should collaborate to establish agreed-upon metrics that will inform relevant, reliable, and timely program evaluation and improvement. Such metrics can be aligned with the California Community Colleges Chancellor's Office initiatives and policies, such as the Vision for Success, the Student Equity Plan, Student-Centered Funding Formula, as well as current data systems like the Student Success Metrics and Launch Board by Cal-PASS Plus. In addition, metrics could also include (but would not be exclusive to) students' comprehensive labor histories and work experiences, academic progression (course-taking and enrollment patterns, retention/persistence, success), career capital developed and gained via the CCB, employment outcomes (e.g., job placement and alignment, earnings, satisfaction). Layered with student characteristics, these data should ultimately center racial equity, and capture and improve the academic and career trajectories of students from diverse backgrounds in the CCB programs.
- d. The infrastructure must also integrate the necessary metrics to monitor program outcomes. For example, the manner in which degree completion is defined should follow the similar methods as transfer-level students at the CSU and UC (year-two and year-three degree completion). Additionally, more comprehensive employment data should be integrated into this data infrastructure.
- e. Qualitative data should also be generated to gather insights from students about their experiences before, during, and after participating. Data from program and campus leaders should also be generated to learn about how programs can be further enhanced. The utilization of both qualitative and quantitative data can provide richer insights on

- the experiences and impact of CCB programs for students, practitioners, and institutions.
- f. In line with equity-oriented decision-making, data on these programs should be disaggregated by race and other social identities to identify possible gaps in outcomes at the student, program, and college level. There may be heterogeneity in the experiences and impact of CCB programs for different students. Quantitative and qualitative analyses should be mindful and examine the extent of these differences.

**3. Invest in community colleges and CCB programs, especially those directly involved and impacted (e.g., the students and the faculty)**

- a. The above efforts ought to be considered alongside changes to the Student-Centered Funding Formula (SCFF) that would reward community colleges for expanding opportunities and outcomes for students of color from economically disadvantaged backgrounds that earn baccalaureate degrees in the state. There is a need to better align financial incentives to expand these programs and keep the state and the CCB programs accountable. Changes to the California community colleges' SCFF need to occur so community colleges get rewarded for their investments, for their efforts in awarding baccalaureate degrees to students of color from economically disadvantaged backgrounds, for closing racial equity gaps, for helping students get jobs with livable wages, and for creating pathways for students to go to graduate school.
- b. Recognizing the higher costs associated with offering upper-division courses compared to associate-degree level courses, the SCFF should be modified to provide higher levels of funding for student enrollment in the third and fourth years of CCBs. Given the

- unique role of CCBs in contributing to the state's baccalaureate degree production, third and fourth year of CCBs should be paid at a higher rate than AA/AS and ADT completion within the SCFF.
- c. Increase financial aid to students in upper-division CCB courses to account for higher per unit fees (\$84 vs \$46) and additional costs associated with programs. For example, in dental hygiene CCB programs, additional fees include: textbooks, uniforms, professional instrumental kits, malpractice insurance, federal and state licensing exams, and other dental hygiene supplies, which can total up to \$13,000 in the first year alone and an additional \$6,000 the following year. These additional costs can serve as a barrier for students from lower-income backgrounds and other underserved communities. Financial support for CCB students should adapt as changes to the state and federal government policies take place (e.g., any new Cal Grant provisions).
  - d. The state needs to elevate the work of faculty teaching in these programs and to compensate them adequately for the work they are doing inside and outside of the classroom (e.g., curriculum design, mentoring). Faculty at CCB programs are required to hold an advanced degree to effectively teach. As such, colleges should receive additional resources to increase compensation for faculty teaching in CCB programs and achieve more parity with CSU and UC faculty.

#### **4. Strategic expansion of CCBs**

- a. Community colleges might consider offering degrees in fields where there is a clear shortage of bachelor's degree-educated workers, even if these fields overlap with existing four-year programs (e.g., if local demand for registered nurses outpaces the production

of bachelor's degrees in nursing at the nearest California State University). Evidence from states that allow program overlap between the community college and state university system (e.g., Florida) indicates little competition for students between sectors, as CCBs generally serve a different student population than the four-year sector. As such, there is a need to develop a more clear and consistent process to approve new CCB programs and document progress in existing ones to ensure alignment of program offerings and their communities. This process must center the local labor market supply/demand, statewide economic growth, social and economic inequalities in higher education and in the labor market. To develop a new program, this process expands upon the existing process to document and examine the:

- Labor market needs (in local and regional economies) with data from various sources (e.g., Lightcast, Bureau of Labor Statistics, Glassdoor, and the California Cradle-to-Career data system), with considerations to labor market conditions by race
  - Historical production of postsecondary credentials and racial equity gaps in college access, persistence, and completion in the region
  - Lack of baccalaureate programs in a specific geographic proximity by race
  - Disciplinary fields in which baccalaureate degrees are needed
  - How the program will integrate with the regional academic (e.g., high schools, California State Universities, University of California system, etc.) and economic pipeline (e.g., employers)
- b. Community colleges might also consider offering degrees in fields where there is a clear shortage of bachelor's degree-educated workers, even if these fields overlap with existing

four-year programs (e.g., if local demand for registered nurses outpaces the production of bachelor's degrees in nursing at the nearest CSU and/or UC campus).

#### **5. Market the educational and economic benefits**

Community colleges should make explicit to students the opportunities that completing CCBs bring to their academic and career trajectories. High-quality CCBs programs should be highlighted to students and households for how it is an affordable and accessible pathway to a well-paying job. Colleges can also promote that students can further their education and apply to graduate school after obtaining a bachelor's degree via the CCB program.

#### **6. Create a community of practice to learn together**

Colleges interested in growing their CCB programs and/or creating new CCBs need guidance on how and where to connect their programs so that there is better alignment with local and regional economies and labor markets. This process can be informed by data and research to contextualize and identify workforce needs with considerations to racial equity as well as identify best practices, policies, structures, and systems relating to CCBs across the state and nation to inform the development, implementation, and expansion of CCB programs in California (Bragg et al., 2022). Colleges can partner with related businesses and services on- and off-campus to sustain and grow these programs. Collaboration amongst multiple entities will help ensure how to develop best practices, policies, structures, and systems that will be beneficial for colleges, businesses, and students.

Many of the inequities experienced by Californians were exacerbated in the face of the Covid-19 pandemic and economic recession. A critical examination of California's public higher education system quickly reveals inequities in who is served and benefits from baccalaureate



attainment. The social and economic conditions and realities for many Californians suggest there is much to be done to advance racial equity. The preliminary findings of the California Community College Baccalaureate program, and findings from CCB programs in Florida and Washington, suggest that CCB programs, with strategic processes for implementation and investment as well as a focus on racial equity, can be one mechanism to improve and transform the lives of the historically minoritized. Growing California's CCB programs' reach and impact in meaningful ways to expand educational and economic access for historically underserved students, including racially minoritized communities, will require increasing financial incentives, resources, and support to CCB programs to reward student success and ensure program implementation, quality, and accountability. Expanding data and research infrastructure to monitor program success and improvement will be instrumental in understanding students' academic and career trajectories. Communities of practice will support the work of creating equitable pathways and life conditions for Californians. The California CCBs can be an affordable and accessible pathway to social and economic mobility, but it will ultimately be up to education leaders across the state to realize its potential for advancing racial equity and serving Californians.

## References

- Abel, J.R. & Deitz, R. (2019). Despite rising costs, college is still a good investment. Federal Reserve Bank of New York. <https://libertystreeteconomics.newyorkfed.org/2019/06/despite-rising-costs-college-is-still-a-good-investment.html>
- AIGA. (2021). Design point of view: Full report. <https://www.aiga.org/aiga-design-pov-reports>
- Aguiar, A., Dones, C., Quiñones, P., Rios-Aguilar, C., Chavac, L., & Cruz, Patrosinio (2022). *Pioneering the community college baccalaureate in California: The experience of West Los Angeles College* [Research brief]. University of California, Davis Wheelhouse: The Center for Community College Leadership and Research, 7(2), 1-14. [https://education.ucdavis.edu/sites/main/files/file-attachments/wheelhouse\\_research\\_brief\\_vol\\_7\\_no\\_2\\_final.pdf](https://education.ucdavis.edu/sites/main/files/file-attachments/wheelhouse_research_brief_vol_7_no_2_final.pdf)
- Alcantar, C. M., & Hernandez, E. (2020). “Here the professors are your guide, tus guías”: Latina/o student validating experiences with faculty at a Hispanic-serving community college. *Journal of Hispanic Higher Education*, 19(1), 3-18.
- American Association of Community Colleges. (2022). *Fast facts*. <https://www.aacc.nche.edu/research-trends/fast-facts/>
- American Association of Colleges of Nursing. (2020). *Fact sheet: Nursing shortage*. <https://www.aacnnursing.org/news-information/fact-sheets/nursing-shortage>
- Arum, R., Eccles, J.S., Heckhausen, J., Orona, G.A., von Keyserlingk, L., Wegemer, C.M., Wright, C.E., & Yamaguchi-Pedroza, K. (2021). *Ensuring a more equitable future: Assessing student learning and growth in higher education*. Postsecondary Value Commission. <https://www.postsecondaryvalue.org/wp-content/uploads/2021/05/PVC-Arum-FINAL.pdf>
- Associated Press. (2017). *Some Texas community colleges to offer bachelor's degrees*. <https://apnews.com/article/98615056eed5481bbe20dd82e311669e>
- Assembly Bill No. 1455 (AB 1455), California Education Code. Ch. 560 § 6254 (2017). [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201720180AB1455](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180AB1455)
- Assembly Bill No. 2400 (AB 2400). (2010). [http://www.leginfo.ca.gov/pub/09-10/bill\\_asm/ab\\_2351-2400/ab\\_2400\\_cfa\\_20100430\\_102549\\_asm\\_comm.html](http://www.leginfo.ca.gov/pub/09-10/bill_asm/ab_2351-2400/ab_2400_cfa_20100430_102549_asm_comm.html)
- Assembly Bill No. 661 (AB 661). (2011). [http://www.leginfo.ca.gov/pub/11-12/bill\\_asm/ab\\_0651-0700/ab\\_661\\_bill\\_20110216\\_introduced.html](http://www.leginfo.ca.gov/pub/11-12/bill_asm/ab_0651-0700/ab_661_bill_20110216_introduced.html)
- Assembly Bill No. 927 (AB 927), California Education Code. Ch. 565 § 78043 (2021). [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202120220AB927](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB927)

- Barrow, L., & Rouse, C. E. (2005). Does college still pay? *The Economists' Voice*, 2(4), 1-9.
- Bartik, T. J., & Hershbein, B. (2018). *Degrees of poverty: The relationship between family income background and the returns to education* (Upjohn Institute Working Paper 18-284). Kalamazoo, MI: W.E. Upjohn Institute for Employment Research.  
[https://research.upjohn.org/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1302&context=up\\_workingpapers](https://research.upjohn.org/cgi/viewcontent.cgi?referer=&httpsredir=1&article=1302&context=up_workingpapers)
- Bellevue College (2021). *Computer Science: General information*.  
<https://www.bellevuecollege.edu/cs/about/>
- Bemmel, E. P., Floyd, D. L., & Bryan, V. C. (2008). Perceptions and reflections of administrators: Community colleges transitioning to baccalaureate colleges. *Community College Journal of Research and Practice*, 33, 151-176.
- Berger, J.B. & Malaney, G.D. (2003). Assessing the transition of transfer students from community colleges to a university. *NASPA Journal* 40(4), 1-23.
- Biondi, M. (2012). *The Black revolution on campus*. Berkeley: University of California Press.
- Bloomfield, A. (2020). *Outcomes for Graduates of Florida's Public Postsecondary Educational Institutions*.  
<https://www.fldoe.org/core/fileparse.php/5652/urlt/2019EconomicSecurityReport.pdf>
- Bragg, D. D., Harmon, T., Napiontek, T., Wasserman, E., & Kersenbrock, A. (2022). *20 promising practices to advance quality, equity, and success in community college baccalaureate (CCB) degree programs*. Community College Baccalaureate Association (CCBA). <https://www.accbd.org/wp-content/uploads/2022/07/CCBA-Ebook.pdf>
- Bragg, D.D. & McCarthy, M.A. (2020). *The equity imperative: Taking community college baccalaureates to scale* [Conference presentation]. League for Innovation in the Community College Conference, Seattle, WA, United States.
- Bragg, D. D., & Ruud, C. M. (2011). *The adult learner and the applied baccalaureate: Lessons from six states*. Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign.
- Bray, J. (2022). *Michigan community colleges offer bachelor's degrees to increase degree attainment and close skills gap*. AACT Perspectives. <https://perspectives.acct.org/stories/michigan-community-colleges-offer-bachelor-s-degrees-to-increase-degree-attainment-and-close-skills-gap>
- California Community College Baccalaureate Association. (2022). *About us*.  
<https://cccbac.org/about-us/>
- California Community Colleges Chancellor's Office. (2020a). *Student count*.  
[https://datamart.cccco.edu/Students/Student\\_Term\\_Annual\\_Count.aspx](https://datamart.cccco.edu/Students/Student_Term_Annual_Count.aspx)

- California Community Colleges Chancellor's Office. (2020b). *Financial aid summary*.  
[https://datamart.cccco.edu/Services/FinAid\\_Summary.aspx](https://datamart.cccco.edu/Services/FinAid_Summary.aspx)
- California Community Colleges Chancellor's Office. (2022). *Key facts*.  
<https://www.cccco.edu/About-Us/Key-Facts>
- California Competes. (2017). *Moving past the master plan: Report on the California Master Plan for Higher Education*. <https://californiacompetes.org/assets/general-files/Master-Plan-Report--with-cover-for-hearing.pdf>
- California Competes. (2020). *Postsecondary to prosperity: Examining California's opportunity landscape*.  
[https://californiacompetes.org/assets/general-files/CACompetes\\_P2P-Full-Report.pdf?mc\\_cid=ec68454dc6&mc\\_eid=ae03873582](https://californiacompetes.org/assets/general-files/CACompetes_P2P-Full-Report.pdf?mc_cid=ec68454dc6&mc_eid=ae03873582)
- California Education Code, Section 78042, Education Code (2021).  
[https://leginfo.ca.gov/faces/codes\\_displaySection.xhtml?sectionNum=78042&lawCode=EDC](https://leginfo.ca.gov/faces/codes_displaySection.xhtml?sectionNum=78042&lawCode=EDC)
- California State University. (2020). *State-supported enrollment*.  
[https://tableau.calstate.edu/views/SelfEnrollmentDashboard/EnrollmentSummary?iframeSizedToWindow=true&%3Aembed=y&%3AshowAppBanner=false&%3Adisplay\\_count=no&%3AshowVizHome=no](https://tableau.calstate.edu/views/SelfEnrollmentDashboard/EnrollmentSummary?iframeSizedToWindow=true&%3Aembed=y&%3AshowAppBanner=false&%3Adisplay_count=no&%3AshowVizHome=no)
- The Campaign for College Opportunity. (2021). *Shut out: The need to increase access to the University of California and the California State University*. <https://collegecampaign.org/wp-content/uploads/2021/12/Shut-Out-Report-final.pdf>
- Card, D. (1999). The causal effect of education on earnings. In O. Ashenfelter & D. Card (Eds.), *Handbook of Labor Economics* (Vol. 3, pp. 1801-1863). Amsterdam, The Netherlands: North-Holland.
- Carnevale, A., & Strohl, J. (2013). *Separate and unequal: How higher education reinforces the intergenerational reproduction of White racial privilege*. Washington, DC: Center of Education and the Workforce, Georgetown Public Policy Institute, Georgetown University.
- Carnevale, A. P., Jayasundera, T., & Gulish, A. (2016). *America's divided recovery: College haves and have-nots*. Washington, DC: Georgetown University Center on Education and the Workforce.  
<https://cew.georgetown.edu/wp-content/uploads/Americas-Divided-Recovery-web.pdf>
- Carnevale, A., Rose, S., & Cheah, B. (2013). *The college payoff: Education, occupation, and lifetime earnings (Report)* Washington, DC: Washington, DC: Center of Education and the Workforce, Georgetown Public Policy Institute, Georgetown University.  
<https://cew.georgetown.edu/report/the-college-payoff/>
- Carnevale, A., Schmidt, P., & Strohl, J. (2020). *The merit myth: How our colleges favor the rich and divide America*. The New Press: New York, NY.

- Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R., & Narang, J. (2017). The fading American dream: Trends in absolute income mobility since 1940. *Science*, 356(6336), 398-406.
- Cole, E. R. (2020). *The campus color line: College presidents and the struggle for Black freedom*. Princeton University Press.
- Collins, R. (2019). *The credential society: An historical sociology of education and stratification*. Columbia University Press.
- Community College Baccalaureate Association. (n.d.). State inventory. <https://www.accbd.org/state-inventory/>
- Coons, A., G., Browne, A. D., Campion, H. A., Dumke, G. S., Holy, T. C., McHenry, D. E., Tyler, H. T., & Wert, R. J. (1960). *A master plan for higher education in California, 1960-1975*. California State Department of Education. <https://www.ucop.edu/acadinit/mastplan/MasterPlan1960.pdf>
- Cuellar, M.G. & Gándara, P. (2021). Promoting access and equity for underrepresented racial minorities? An examination of policies and practices in community college baccalaureate programs. *Community College Review*, 49(1), 52-75.
- Daun-Barnett, N. & Escalante, S. (2014). Local influences of community college baccalaureate legislation on nursing and teaching degree production in Florida. *Community College Journal of Research and Practice*, 38(11), 1030-1043.
- Douglass, J. A. (2000). *The California idea and American higher education: 1850 to the 1960 Master Plan*. Stanford University Press.
- Douglass, J. A. (2010). From Chaos to Order and Back? A Revisionist Reflection on the California Master Plan for Higher Education @ 50 and Thoughts About its Future. Center for Studies in Higher Education, University of California, Berkeley, 21.
- Emsi. (2013). *Economic contribution of the Florida College System: Analysis of investment effectiveness and economic growth*. Florida Department of Education. [http://www.fldoe.org/core/fileparse.php/3/urlt/economicimpact\\_fullreport.pdf](http://www.fldoe.org/core/fileparse.php/3/urlt/economicimpact_fullreport.pdf)
- Flores, S. M., Carroll, T., & Lyons, S. M. (2021). Beyond the tipping point: Searching for a new vision for Latino college success in the United States. *The ANNALS of the American Academy of Political and Social Science*, 696(1), 128-155.
- Florida Department of Education. (2012). *Baccalaureate proposal approval process*. <https://www.fldoe.org/core/fileparse.php/5592/urlt/0082804-flowchart.pdf>
- Florida Department of Education. (2014). *What does it cost to attend a Florida College System credit program and how does that compare with other college options?* <http://www.fldoe.org/schools/higher-ed/fl-college-system/data-reports/transparency-accountability.stml>

- Florida Department of Education. (2020). *2020 Fact Book*.  
<http://www.fldoe.org/accountability/data-sys/CCTCMIS/reports.stml>
- Florida Department of Education. (2021a). *2018-19 Florida College System Bachelor's Degree Completers*.  
<https://www.fldoe.org/core/fileparse.php/7592/urlt/FCS1819-Bachelor-Outcomes-S-R.pdf>
- Florida Department of Education. (2021b). *Florida Colleges*. <https://www.fldoe.org/schools/higher-ed/fl-college-system/colleges/>
- Florida Department of Education. (2021c). *List of Approved Baccalaureate Degree Programs in the Florida College System*. <https://www.fldoe.org/schools/higher-ed/fl-college-system/baccalaureate-degree-proposal-process.stml>
- Florida Department of Education. (2022). *Reports*. <https://www.fldoe.org/accountability/data-sys/CCTCMIS/reports.stml>
- Florida Early Learning-20 Education Code Articulation and Access: Site-determined baccalaureate degree access, 1007.33 Title XLVIII, Chapter 1007 (2021).
- Floyd, D. L., Falconetti, A. M. G., & Felsher, R. A. (2012). Applied and workforce baccalaureate models. *New Directions for Community Colleges*, 158, 5-11. D
- Floyd, D. L., & Skolnik, M. L. (2019). The community college baccalaureate movement: Evolutionary and revolutionary. In T. U. O'Banion (Ed.), *13 ideas that are transforming the community college world* (pp. 103–126). Lanham, MD: Rowman & Littlefield.
- Floyd, D.L. & Walker, K.P. (2008). The community college baccalaureate: Putting the pieces together. *Community College Journal of Research and Practice*, 33, 90-124.
- Fuller, J. B., Lipson, R., Encinas, J., Forshaw, T., Gable, A., Schramm, J.B. (2022). *Working to learn: Despite a growing set of innovators, America struggles to connect education and career*. Cambridge, MA: Project on Workforce, Malcolm Wiener Center for Social Policy, Harvard Kennedy School, Harvard Business School Managing the Future of Work Project.  
<https://www.pw.hks.harvard.edu/post/working-to-learn>
- Fulton, M. (2020). *Community college bachelor's degrees: An update on state activity and policy considerations* [Policy brief]. Education Commission of the States. <https://www.ecs.org/wp-content/uploads/Community-College-Bachelors-Degrees.pdf>
- Gándara, P., & Cuellar, M. (2016). *The baccalaureate in the California community college: Current challenges & future prospects*. Los Angeles, CA: The Civil Rights Project/Proyecto Derechos Civiles, UCLA.
- Gándara, P., Alvarado, E., Driscoll, A., & Orfield, G. (2012). *Building pathways to transfer: Community colleges that break the chain of failure for students of color*. Los Angeles, CA: The Civil Rights Project/Proyecto Derechos Civiles, UCLA.

- Geiser, S., & Atkinson, R. C. (2013). Beyond the Master Plan: The case for restructuring baccalaureate education in California. *California Journal of Politics and Policy*, 5(1), 67-123.
- Gaddis, S. M. (2015). Discrimination in the credential society: An audit study of race and college selectivity in the labor market. *Social Forces*, 93(4), 1451-1479.
- Governor's Office of Planning and Research. (2018). *The Master Plan for higher education in California and state workforce needs: A review*. [https://opr.ca.gov/docs/20181226-Master\\_Plan\\_Report.pdf](https://opr.ca.gov/docs/20181226-Master_Plan_Report.pdf)
- Hanson, C. (2009). The community college baccalaureate: An historic and cultural imperative. *Community College Journal of Research and Practice*, 33(12), 985-994.
- Hoang, H., Vo, D., & Rios-Aguilar, C. (2022). *California's community college baccalaureate programs: Benefits and opportunities* [Research brief]. University of California, Davis Wheelhouse: The Center for Community College Leadership and Research, 7(1), 1-14. [https://education.ucdavis.edu/sites/main/files/file-attachments/wheelhouse\\_research\\_brief\\_vol\\_7\\_no\\_1\\_final.pdf](https://education.ucdavis.edu/sites/main/files/file-attachments/wheelhouse_research_brief_vol_7_no_1_final.pdf)
- Hora, M., Benbow, R. J., & Oleson, A. K. (2016). *Beyond the skills gap: Preparing college students for life and work*. Harvard Education Press.
- Institute of Medicine. (2011). *The future of nursing: Leading change, advancing health*. The National Academies Press. <https://nap.nationalacademies.org/catalog/12956/the-future-of-nursing-leading-change-advancing-health>
- U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS), 2020, *Statistical Tables*. <https://nces.ed.gov/ipeds/use-the-data>
- Johnson, H., & Mejia, M. C. (2019). *California's higher education system*. Public Policy Institute of California. <https://www.ppic.org/wp-content/uploads/higher-education-in-california-californias-higher-education-system-october-2019.pdf>
- Johnson, H. & Cuellar Mejia, M. (2020). *Higher education and economic opportunity in California*. Public Policy Institute of California. <https://www.ppic.org/publication/higher-education-and-economic-opportunity-in-california/>
- Johnson, H., & Li, Q. (2010). *Higher education in California: New goals for the master plan*. Public Policy Institute of California. [https://www.ppic.org/wp-content/uploads/content/pubs/report/R\\_410HJR.pdf](https://www.ppic.org/wp-content/uploads/content/pubs/report/R_410HJR.pdf)
- Kimberlin, S., & Hutchful, E. (2019). Income inequality significantly increased for Californians in 2018: Millions of people can't afford their basic needs. California Budget & Policy Center. <https://calbudgetcenter.org/resources/income-inequality-significantly-increased-for-californians-in-2018/>

- Kaikkonen, D. A., & Quarles, C. L. (2018). The effect on earnings of the applied baccalaureate degree. *Community College Review*, 46(4), 347-367.
- Kersenbrock, A.M. (2012). *The community college baccalaureate and adult students: A qualitative analysis*. [Doctoral dissertation, University of Central Florida]. UCF Electronic Theses and Dissertations. <https://stars.library.ucf.edu/etd/2395/>
- Kramer, D., Ortagus, J.C., & Donovan, J. (2020). Competing for Bachelor's degrees: Are community colleges cutting into the market share of 4-year institutions? *American Educational Research Journal*, 58(2), 343-385.
- Love, I. (2020). *The baccalaureate and beyond. An analysis of demographics and labor market outcomes of Florida community college baccalaureate graduates*. New America. <https://www.newamerica.org/education-policy/reports/baccalaureate-and-beyond/>
- Love, I. & Palmer, I. (2020). *Community college baccalaureate programs: A state policy framework*. New America. <https://www.newamerica.org/education-policy/reports/community-college-baccalaureate-programs-state-policy-framework/>
- Love, I., Bragg, D., & Harmon, T. (2021). *Mapping the community college baccalaureate. An inventory of the institutes and programs comprising the current landscape*. New America. <https://www.newamerica.org/education-policy/briefs/mapping-the-community-college-baccalaureate/>
- Ma, J., Pender, M., & Welch, M. (2019). *Education pays 2016: The benefits of higher education for individuals and society*. The College Board. <https://research.collegeboard.org/media/pdf/education-pays-2019-full-report.pdf>
- Manning, C. (2022). *2023 state budget will bring bachelor's degrees to NMC at long last*. Traverse City Ticker. <https://www.traverseticker.com/news/2023-state-budget-will-bring-nursing-bachelors-degrees-to-nmc/>
- Marginson, S. (2016). *The dream is over: The crisis of Clark Kerr's California idea of higher education*. University of California Press.
- Marginson, S. (2017). The master plan and the California higher education system: Success, failure and implications for China. *International Journal of Chinese Education*, 6(1), 1-26.
- McKinney, L., Scicchitano, M., & Johns, T. (2013). A national survey of community college baccalaureate institutions. *Community College Journal of Research and Practice*, 37(1), 54-63.
- Meza, E. (2019). The Community College Baccalaureate in Washington: Who Enrolls? (New Baccalaureate Series, Data Note). [https://evans.uw.edu/wp-content/uploads/2021/05/NewBA\\_DataNote2.pdf](https://evans.uw.edu/wp-content/uploads/2021/05/NewBA_DataNote2.pdf)



- Meza, E., & Bragg, D. (2020a). *Comparison of employment and earnings outcomes of Washington community college baccalaureate graduates and university graduates* [New Baccalaureate Series, Data Note]. Community College Research Initiatives, University of Washington. <https://files-eric-ed-gov.ezproxy.library.wisc.edu/fulltext/ED608176.pdf>
- Meza, E., & Bragg, D. D. (2020b). *Washington's Bachelor's of Applied Science graduate employment and earnings outcomes* (New Baccalaureate Series, Data Note) [Community College Research Initiatives]. <https://files-eric-ed-gov.ezproxy.library.wisc.edu/fulltext/ED608163.pdf>
- Meza, E., & Love, I. (2022). *Community college baccalaureate programs as an equity strategy: Student access and outcomes data*. New America. <https://www.newamerica.org/education-policy/briefs/community-college-baccalaureate-programs-as-an-equity-strategy-student-access-and-outcomes-data/>
- National Academies of Sciences, Engineering and Medicine. (2021). *The future of nursing 2020-2030: Charting a path to achieve health equity*. The National Academies Press. <https://www.nationalacademies.org/our-work/the-future-of-nursing-2020-2030>
- National Center for O\*Net Development. (2019). *Crosswalk search*. <https://www.onetcenter.org/crosswalks.html>
- Ortagus, J. C., & Hu, X. (2020). A national study of the financial implications of community college baccalaureate adoption. *The Journal of Higher Education*, 91(7), 1053-1086.
- Ortagus, J., Kramer, D., González Canché, M., & Fernandez, F. (2019). The impact of community college baccalaureate adoption on associate degree production. *Teachers College Record*, 122(1).
- Park, T. J., Tandberg, D. A., Shim, H., Hu, S., & Herrington, C. D. (2018). Community college teacher education baccalaureate programs: Early evidence yields mixed results. *Educational Policy*, 32(7), 1018-1040.
- Petek, G. (2020). Final evaluation of community college bachelor's degree pilot. *Legislative Analyst's Office*. <https://lao.ca.gov/reports/2020/4140/final-eval-cc-bachelors-degree-012320.pdf>
- Pew Research Center. (2004). *Latinos in California, Texas, New York, Florida and New Jersey*. <https://www.pewresearch.org/hispanic/2004/03/19/latinos-in-california-texas-new-york-florida-and-new-jersey/>
- Postsecondary Value Commission. (2021). *Equitable value: Promoting economic mobility and social justice through postsecondary education*. <https://www.postsecondaryvalue.org/wp-content/uploads/2021/05/PVC-Final-Report-FINAL.pdf>
- Public postsecondary education: community colleges: statewide baccalaureate degree program, AB-927, California Legislature-2021-2022 Regular Session. (2021). [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=202120220AB927](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=202120220AB927)

- Revised Code of Washington, Title 28B, Chapter, 50, Section 825 (RCW 28B.50.825) (2021).  
<https://app.leg.wa.gov/rcw/default.aspx?cite=28B.50.825>
- Russell, A. (2010). *Update on the community college baccalaureate: Evolving trends and issues*. American Association of State Colleges and Universities.  
<https://www.aascu.org/policy/publications/policymatters/2010/communitycollegebaccalaureate.pdf>
- Russell, A.B. (2013). Update on the community college baccalaureate: Evolving trends and issues. In N. Remington & R. Remington (Eds.), *Alternative pathways to the baccalaureate: Do community colleges offer a viable solution to the nation's knowledge deficit* (pp. 67-83). Stylus Publishing.
- Ruud, C.M. & Bragg, D.D. (2011). *The applied baccalaureate: What we know, what we learned, and what we need to know*. Office of Community College Research and Leadership: University of Illinois at Urbana-Champaign. <https://occril.illinois.edu/docs/librariesprovider2/ab/ab-what-we-know>
- Schak, J.O. & Nichols, A.H. (2018). *Degree attainment for Latino adults: National and state trends*. The Education Trust. [https://edtrust.org/wp-content/uploads/2014/09/Latino-Degree-Attainment\\_FINAL\\_4-1.pdf](https://edtrust.org/wp-content/uploads/2014/09/Latino-Degree-Attainment_FINAL_4-1.pdf)
- Senate Bill No. 850 (SB 850), California Education Code. Ch. 747 § 78040. (2014).  
[https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201320140SB850](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201320140SB850)
- Sikes, E. (2015). *OPAGA research on Florida College System baccalaureate degree programs*. Senate Committee on Higher Education. <https://www.trbas.com/media/media/acrobat/2018-01/70201696189400-18123310.pdf>
- Smith, A. (2020). *Enrollment growth doesn't justify the cost of a new CSU campus*. EdSource.  
<https://edsources.org/2020/cost-of-a-new-csu-campus-doesnt-justify-enrollment-growth/636900#:~:text=The%20report%20estimates%20building%20and,the%20type%20of%20campus%20chosen>
- State University System of Florida. (2021). *Explore Florida's Public Universities*.  
<https://www.flbog.edu/>
- State of Washington Office of Financial Management. (2021). Population of Hispanic/Latino origin. Population Estimates. <https://ofm.wa.gov/washington-data-research/statewide-data/washington-trends/population-changes/population-hispaniclatino-origin>
- Statistical Atlas. (2018a). College graduates by race.  
<https://statisticalatlas.com/state/California/Educational-Attainment>
- Statistical Atlas. (2018b). Race and ethnicity in California.  
<https://statisticalatlas.com/state/California/Race-and-Ethnicity>

- Townsend, B. K., Bragg, D. D., & Ruud, C.M. (2008). *The adult learner and the Applied Baccalaureate: National and state-by-state Inventory*. Office of Community College Research and Leadership, University of Illinois at Urbana-Champaign.
- University of California. (2020). *Fall enrollment at a glance*.  
<https://www.universityofcalifornia.edu/about-us/information-center/fall-enrollment-glance>
- Walker, & Pendleton. (2013). The history of the community college baccalaureate movement: Meeting the educational needs of the 21st century. In N. Remington & R. Remington (Eds.), *Alternative pathways to the baccalaureate: Do community colleges offer a viable solution to the nation's knowledge deficit* (pp. 7-16). Stylus Publishing.
- Washington State Board for Community and Technical Colleges. (2021). *Enrollment (public)*.  
<https://www.sbctc.edu/colleges-staff/research/data-public/enrollment-public.aspx>
- Weissman, S. (2021). *4-year degrees for California's 2-year colleges*. Inside Higher Ed.  
<https://www.insidehighered.com/news/2021/10/18/california-community-colleges-expand-baccalaureate-programs>
- Wetzstein, L., Meza, E., & Bragg, D. (2022). *Evaluating the Student Experience at Community College Baccalaureate Programs*. New America. <https://www.newamerica.org/education-policy/briefs/evaluating-the-student-experience-at-community-college-baccalaureate-programs/>
- Zielak, P. (2017). *Four-year degree offerings at Michigan community colleges*. House Fiscal Agency.  
[https://www.house.mi.gov/hfa/PDF/CommunityColleges/CC\\_FourYearDegrees\\_memo\\_Oct17.pdf](https://www.house.mi.gov/hfa/PDF/CommunityColleges/CC_FourYearDegrees_memo_Oct17.pdf)