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JOHN W. GARDNER CENTER
for Youth and Their Communities

Secondary to Postsecondary Transitions for Youth in San Francisco Unified School District

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Background

The San Francisco Postsecondary Success Partnership (SF-PSP), a joint effort of the City and County of San Francisco, City College of San Francisco (CCSF), San Francisco Unified School District (SFUSD), and key community organizations, was formed in November 2009 to promote postsecondary success for all students. The goals of the partnership were to create shared ownership of the responsibility for postsecondary attainment and to build a coordinated strategy to define on the ground changes needed to make a real difference in the lives of youth. To help achieve these goals, SF-PSP asked the Youth Data Archive (YDA) of the John W. Gardner Center for Youth and Their Communities (JGC) at Stanford University to investigate the following:

- How many SFUSD 9th grade students graduated from high school, attended a postsecondary institution, and received a postsecondary credential?
- Where can SF-PSP partners implement programmatic or policy changes that could improve postsecondary educational attainment for San Francisco youth?

Figure 1, which follows the 2001 cohort of first-time 9th grade students, shows that 63% graduated from SFUSD within four years, 78% of SFUSD graduates attended a postsecondary institution the following year, and 54% of postsecondary attendees earned a credential from a two- or four-year institution within five years. In sum, these findings indicate that slightly more than one in four SFUSD 9th grade students (27%) earned a postsecondary credential by the approximate age of 23.[1]

Figure 1. Academic Pathways of SFUSD Students, 2001 9th Grade Cohort

4,798 SFUSD 9th Graders

63% of 9th Graders Graduated from SFUSD Within Four Years

3,043 SFUSD Graduates

78% of Graduates Attended a Postsecondary Institution the Year After Graduating from SFUSD

2,386 Postsecondary Attendees

54% of Postsecondary Attendees Graduated Within Five Years

1,281 Postsecondary Completers

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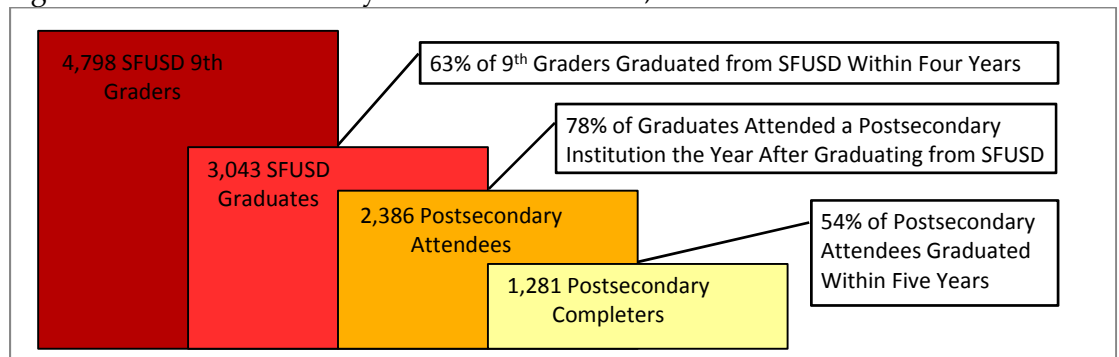
[1] The true postsecondary completion rate may be higher as data limitations prevented us from including students who: completed secondary school outside of SFUSD, took more than four years to graduate high school, did not enter a postsecondary institution immediately upon completing high school, and took longer than five years to complete their postsecondary studies.

Pathway Analysis of SFUSD 9th Grade Students

The analysis in this brief followed 4,798 first-time 9th grade students who were enrolled in the 2000-01 school year at SFUSD (excluding students who were initially enrolled in SFUSD charter or alternative schools). Using the YDA, we tracked students by linking individual-level student data from three data sources: SFUSD administrative records that included demographic, attendance, and academic data; CCSF administrative records that included course transcripts, placement tests, and completion dates for students who received a vocational certificate, associate degree, or transferred to a four-year institution; and National Student Clearinghouse (NSC) records, which included the postsecondary attendance and graduation dates of SFUSD graduates who did not attend CCSF. The earliest reliable NSC data were from the 2004-05 school year, preventing us from analyzing earlier student cohorts.

High School Graduation

Figure 2 shows that 63.4% of 9th grade students in the 2001 school year graduated from SFUSD in four years; non-graduates included students who took more than four years to graduate, transferred to a non-SFUSD high school, or dropped out altogether. Chinese students had the highest graduation rates and Latino and African-American students had the lowest graduation rates, mirroring ethnic differences in graduation rates seen throughout California (Rumberger & Rotermund, 2009). Female students were more likely to graduate than males, regardless of ethnicity (graduation rates disaggregated by gender and ethnicity simultaneously are not presented here). The graduation rates presented in this chart are only for the 9th grade cohort and do not take into account students who entered SFUSD in 10th grade or later.

Figure 2. Four-Year High School Graduation Rates for 9th Grade SFUSD Students, 2001 9th Grade Cohort
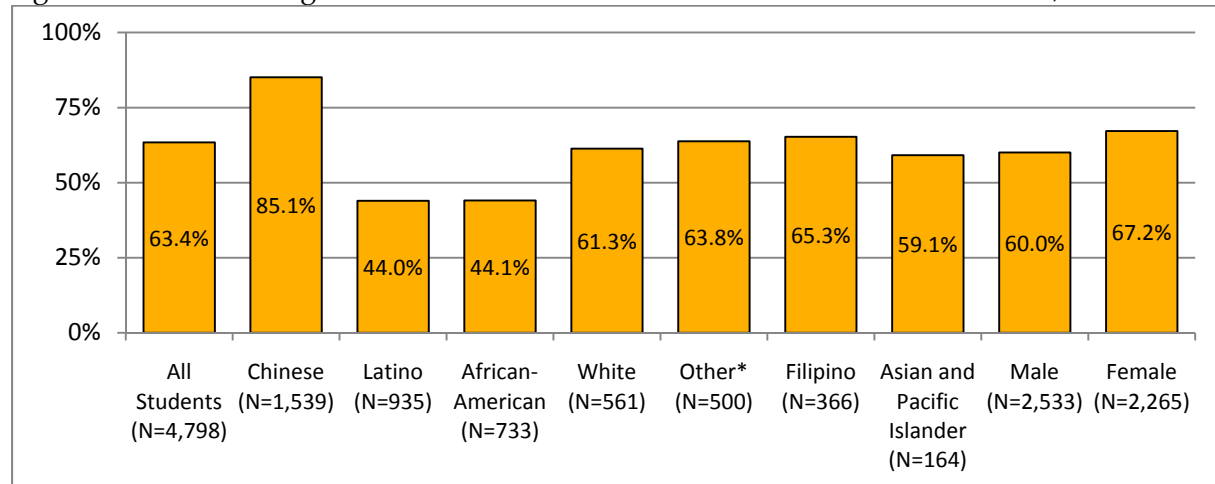
* The Asian and Pacific Islander category includes Japanese, Korean, Pacific Islander, and Other Asian. The Other category includes Native American and all students listed as Other.

Postsecondary Attendance

Figure 3 shows the postsecondary attendance rates of all four-year SFUSD graduates who were enrolled as 9th graders in the 2001 school year, disaggregated by ethnicity and gender. The year after graduating SFUSD, 44.5% of students attended a four-year institution and 33.9% attended a two-year institution, for an overall college-going rate of 78.4%.[2] SFUSD graduates exhibited high college-going rates, regardless of ethnicity, but there were significant differences in the types of institutions attended. Over half of Asian/Pacific Islander, Chinese, and White SFUSD graduates attended a four-year institution compared to just one-fifth of African-American and Latino graduates. Females were also 12 percentage points more likely than males to attend a four-year institution.

Figure 3. Postsecondary Attendance Rates Year After Graduating SFUSD, by Institution Type, Four-Year High School Graduates, 2001 9th Grade Cohort
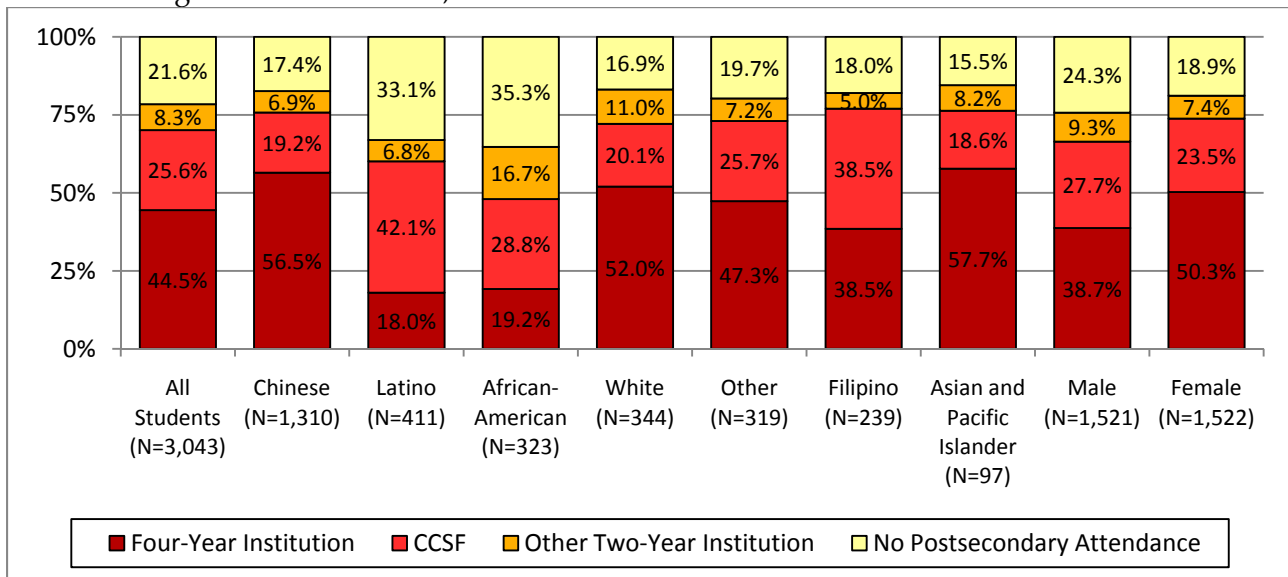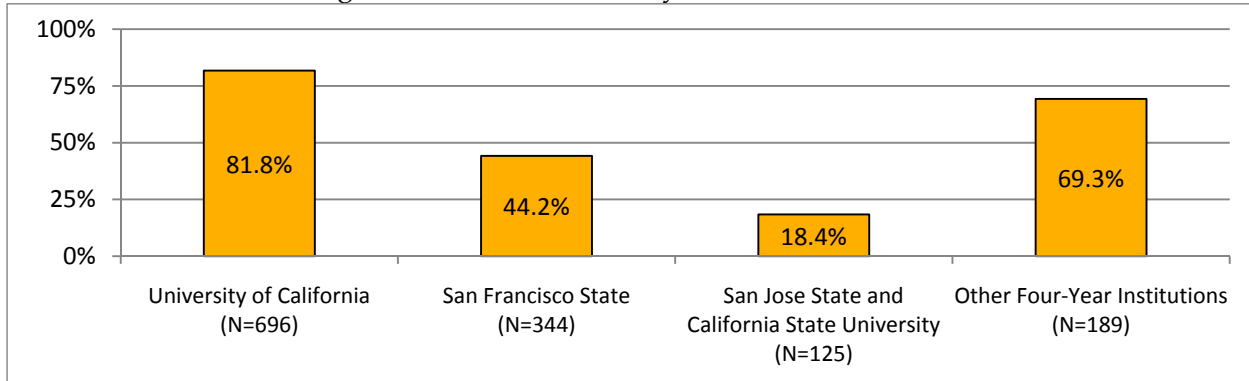

Postsecondary Completion at Four-Year Institutions

A closer examination of enrollment patterns shows that approximately half of the SFUSD graduates in our cohort who attended a four-year institution initially enrolled in the University of California (UC) system (51.4%) and one quarter attended San Francisco State University (25.4%), with the remaining students attending San Jose State University or the California State University (CSU) system (9.2%), or one of a variety of other institutions (14.0%). Five-year bachelor degree completion rates varied significantly by institution attended, with the highest completion rates for UC students and students in other four-year institutions at 81.8% and 69.3%, respectively (Figure 4).[3] Our current sample is too small to accurately determine whether there are significant ethnic or gender differences in postsecondary completion rates, but four-year completion rates appear to be determined more by the institution attended than individual characteristics.

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[2] SFUSD graduates who required more than four years to graduate had very different postsecondary pathways, with 3.1% attending a four-year institution, 33.8% attending CCSF, and 3.1% attending another two-year institution, for an overall college-going rate of 40.0%.
[3] National data that examined high school graduates who initially attend a four-year institution found that, of students who received a bachelor degree, between 90% to 95% complete their postsecondary studies within five years (Bowen, Chingos, & McPherson, 2009).

Figure 4. Five-Year Bachelor Degree Completion Rates for SFUSD Graduates Attending Four-Year Institutions, Four-Year High School Graduates Only, 2001 9th Grade Cohort

* A small number of students who initially attended a four-year institution did not earn a bachelor degree but earned a vocational certificate or associate degree from a two-year postsecondary institution within five years.

CCSF Completion Rates and Predictors of Postsecondary Completion

Of the 1,032 SFUSD graduates in our cohort who enrolled in a two-year institution, three-fourths (75.5%) enrolled at CCSF. Within five years of enrolling at CCSF, 25.9% of attendees "completed" their studies by receiving a vocational certificate, associate degree, or transferring to a four-year institution, and an additional 7.6% transferred and received a bachelor degree from a four-year institution, for a total five-year completion rate of 33.5%.

Using detailed records from SFUSD and students' first year at CCSF, we employed logistic regression models to examine which factors were correlated with higher rates of CCSF completion among SFUSD graduates. Regressions combined data from the 2001 and 2002 9th grade SFUSD cohorts in order to track 1,658 SFUSD graduates through their studies at CCSF. Using two cohorts increased the sample size to help produce more reliable estimates, but limited the study to following students for four years, not five. As a result, all findings are in relation to the likelihood of completing CCSF within four years. The total four-year CCSF completion rate was 26.9%. There are two important cautions in interpreting regression findings:

- Regressions highlight associations between individual-level characteristics and CCSF completion, but the findings cannot be used to infer a causal relationship between students' characteristics and differences in educational outcomes.

- Some key variables that may predict student outcomes, such as financial aid receipt or workforce participation, were unavailable in administrative records. In addition, many variables were highly correlated (e.g. SFUSD students with high GPAs also had high SFUSD attendance rates and high CCSF GPAs), making it difficult to isolate the relationship between any one factor and postsecondary completion. In these cases, we selected variables based on model testing, relevant literature, and ease of interpretation.[4] Complete regression results, along with notes about variable construction and selection, are presented in the appendix.

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[4] Existing literature highlights the importance of curricular rigor and high school math levels (Adelman, 2006), and GPA as a better predictor of postsecondary success than standardized test scores (Bowen, et al., 2009; Geiser & Santelices, 2007).

Regression results highlight key indicators of postsecondary completion at both the high school and postsecondary levels:

- At the high school level, a one point increase in GPA (e.g. an average GPA of 3.0 compared to 2.0) was associated with a 9.0 percentage point increase in the likelihood of completing CCSF. A one proficiency level increase in a student's most recent California Standards Test (e.g. a proficiency level of 4 compared to 3) was associated with a 3.5 percentage point increase in CCSF completion. Students whose highest math course was Geometry or lower were 6.4 percentage points less likely to complete CCSF than students who had reached Algebra 2 (Figure 5).

- At the community college level, attending school full-time was associated with a 16.0 percentage point increase in the likelihood of completing CCSF.[5]

- Finishing the first year of CCSF below college-level English, especially for students four or more levels below, was negatively associated with CCSF completion (Figure 5).[6] There is no significant difference between students finishing their first year one, two, or three levels below college-level English, but these results might be altered by future analysis with a larger student sample. Students who did not take any English course their first year at CCSF, which included 10% of full-time students and 33% of part-time students, were 15.6 percentage points less likely to complete CCSF within four years.[7]

- There was no significant difference in postsecondary completion rates for males and females, after controlling for other academic and attendance factors. Findings on ethnic differences were also inconclusive; controlling for high school attended, which may be correlated with unobserved factors such as instructional quality or counselor support, removes almost all ethnic differences.

Figure 5. Relationship Between Completing CCSF in Four Years and Course Taking Patterns at SFUSD and CCSF, Four-Year High School Graduates Only, 2001 and 2002 9th Grade Cohorts
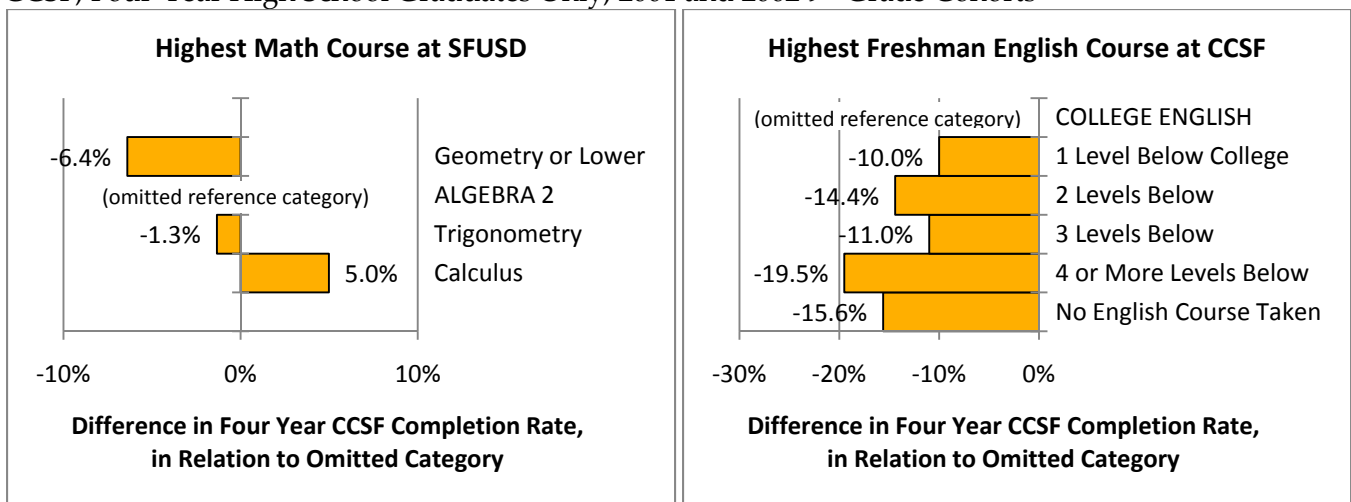
Marginal effects are presented in relation to the reference category designated in capital letters. Marginal effects are calculated from regression (1), presented in the appendix.

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[5] Full-time attendance was 24 units in one year or 12 units in one term.

[6] CCSF offers a sequence of English and ESL courses that place students from 1 to 8 levels below college-level English.

[7] Part-time students with high school GPAs below 2.0 or greater than 3.0 were less likely to have enrolled in an English course than other part-time students, indicating that there may be barriers to enrolling in specific levels of English courses.

Alternate Pathways: SFUSD Non-Graduates

An important omission from the analyses above is the pathways of 9th grade SFUSD students who did not receive a high school diploma from SFUSD; these students may have transferred to another high school district, earned a GED, dropped out, or had another non-traditional high school pathway. This analysis focused on non-graduates who attended CCSF because NSC data were only available for graduates.

Focusing on students in the 2001 cohort who left SFUSD by 2004 without graduating, a total of 27.3% attended CCSF within two years of leaving SFUSD, with students in the upper grades more likely to attend (Table 1). However, some students may have simultaneously enrolled in another high school district while also taking CCSF courses, perhaps during the summer. Among non-graduates who enrolled in CCSF by 2004, only 12 of 185 (6.5%) had earned a postsecondary credential within five years.[8]

Table 1. Percent of SFUSD Non-Graduates who Entered CCSF, 2001 9th Grade Cohort

Grade Level When Exiting SFUSD	N	Enrolled at CCSF Year After Leaving SFUSD	Enrolled at CCSF Two Years After Leaving SFUSD	Total Percentage of Students Enrolling in CCSF Within Two Years of Leaving SFUSD
9th Grade	481	7.3%	3.7%	11.0%
10th Grade	428	21.3%	6.1%	27.4%
11th Grade	380	26.8%	7.4%	34.2%
12th Grade	306	37.3%	7.2%	44.5%
Total	**1,595**	**21.4%**	**5.9%**	**27.3%**

Conclusions and Implications

In the past year, the SF-PSP partnership made significant progress towards the creation of a system of shared accountability for the postsecondary success of all students. Participants examined data, reviewed best practices in the field, and shared local experiences, in order to help develop a relevant and timely strategic plan for San Francisco. The YDA assisted this process by linking data from SFUSD, CCSF, and the National Student Clearinghouse, and found that 27% of all 9th grade SFUSD students obtained a postsecondary credential by the approximate age of 23. Additional quantitative and qualitative research is needed to better understand differences in high school graduation rates and postsecondary attendance rates, especially for African-American and Latino students. Postsecondary attendance and completion rates can improve by understanding what factors, including academic preparation, financial support, knowledge about the application process, or career goals, have most influence on students' postsecondary choices, especially for those who choose two-year over four-year institutions (Pascarella & Terenzini, 2005; Venezia & Kirst, 2005). Postsecondary institutions can also help students lower expenses and minimize time-to-degree by encouraging full-time enrollment, especially through the use of financial aid, and facilitating student enrollment in the courses that will most quickly lead them to their educational and career goals (Adelman, 2005; Burdman, 2005; King, 2002; Zumeta & Frankle, 2007). This is especially important in an era of budget cuts and cancelled courses that can leave students frustrated and prone to dropping out (California Community College Chancellor's Office, 2010; Lewin, 2010).

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[8] Data on intermediate steps towards postsecondary completion, including earning a high school diploma or passing the GED, were unavailable.

Ultimately, the goal of the YDA is to infuse data analyses into program and policy development to improve outcomes for youth. Additional examples of this from the SF-PSP collaboration include:

- The majority of SFUSD graduates entering CCSF were unable to place into college-level English. SFUSD and CCSF staff plan to create professional learning communities that examine samples of student work to highlight disconnects and better define and align expectations for students in both institutions.[9]

- Based on the large number of first-year students who did not enroll in core courses, CCSF is considering a change in priority enrollment policies to ensure that incoming students have more opportunities to enroll in core English or Math courses. Timely entry into core courses may be important for keeping students engaged and on track for postsecondary completion.

- Analysis showed significant alignment between CCSF English and Math placement tests and the California State University's Early Assessment Program (EAP), taken by 11th grade SFUSD students. CCSF departments are investigating the possibility of accepting EAP results in lieu of placement tests to help students who missed or were unaware of placement test dates to enroll in a timely manner.

- SFUSD and CCSF have committed to use these linked data to continue monitoring student progress. Comparing the 9th grade cohort of 2001 to the 9th grade cohort of 2005, we found that the four-year high school graduation rate increased from 63% to 66% and the college-going rate for these graduates increased from 78% to 83%. We also found positive indicators of student enrollment at CCSF in comparing the cohorts, with more incoming SFUSD graduates enrolling full-time and more SFUSD non-graduates enrolling in credit courses that can lead to a postsecondary credential.

The next step for SF-PSP is to develop an infrastructure to support its future work, so that these initial discussions can be turned into concrete plans. An infrastructure that supports research and ensures that partners have opportunities to convene and discuss research findings is best poised to turn research into action. Participants have proposed a wide array of data-focused questions and projects, such as the development of an early warning system to ensure that students stay on track for high school graduation and postsecondary success. Given the variety of possible questions to be explored, it will be necessary to develop a prioritization process which focuses on cross-agency questions – those that that can only be answered by linking data across systems – and balances the amount of work required with the likelihood that the resulting data could lead to actionable steps.

In addition to developing a permanent infrastructure, the scope of the SF-PSP work can be enhanced by increasing the number of data-contributing partners. Linking school data to what students experience outside of school, including involvement with social services, dependency or delinquency systems, or other supporting activities such as career and technical education or after school programs, is critical for creating programs and policies that prepare all youth – and especially high-risk or disadvantaged youth – for productive adulthood (London & Gurantz, 2010). Just as conversations between SFUSD and CCSF have highlighted areas where districts can focus their efforts, conversations between the school district, CCSF and other city and county agencies can help identify more opportunities for better delivery of services to support youth. By including a variety of youth-service providers in the SF-PSP collaborative, San Francisco can begin to develop a comprehensive, city-wide approach to youth success.

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[9] Better curricular alignment between secondary and postsecondary systems has been advocated by Venezia (2003), amongst others.

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APPENDIX: REGRESSION RESULTS, VARIABLE DEFINITIONS, AND NOTES ON VARIABLE SELECTION

Regressions focused on the 1,658 students who were enrolled as 9th grade students in SFUSD in 2001 and 2002, graduated from SFUSD in four years, and attended CCSF the year after graduating (excluding students who were simultaneously enrolled in a four-year postsecondary institution). Inconsistent data collection required us to focus on the following high schools: Balboa, Burton, Downtown, Galileo, Ida B. Wells, Independence, International Studies Academy, June Jordan, Lincoln, Lowell, Marshall, McAteer (closed in 2002), Mission, Newcomer, O'Connell, School of the Arts, Wallenberg, and Washington. Column (A) of Appendix Table 1 provides the population means for the explanatory variables in the first column. Logistic regressions (1) through (4) use four-year CCSF completion rates (transferring to a four-year institution or obtaining either a vocational certificate or associate degree) as the binary dependent variable. Regressions (3) and (4) implement stepwise variable selection with a default threshold of $p<0.2$ for model entry (Adelman, 2006); blank values indicate that the variable was not selected in the final model. Figure 5 in the text is derived from Regression (1); Estimates from logistic regressions were converted to marginal effects by taking the sample average calculated for each observation.

Variable Selection: Selection of model variables was based on theoretical and practical considerations. In addition to the variables included in Appendix Table 1, the following variables were tested but not included in the final regression models: total number of course failures at SFUSD during high school, high school attendance rate, first-year CCSF GPA, highest English course passed during the first year at CCSF, and results from CCSF English and math placement tests. To remove unsuitably high correlations, high school GPA was chosen over total number of course failures (correlation coefficient α=0.91) and attendance rate (α=0.45) at SFUSD, in part due to reader familiarity with interpreting GPA; total number of course failures may be a better predictor of postsecondary success than GPA, especially for students with a GPA near a C average. High school GPA was also chosen over first-year CCSF GPA (α=0.44) as first-year CCSF GPAs were generally based on few classes, especially for part-time students, and it is more likely that causality runs from high school to college. The CST value was calculated by taking the maximum of the most recent English Language Arts (ELA) and Mathematics proficiency levels (CST ELA and Math, α=0.46). Highest English course attempted at CCSF was selected over highest English course passed to distinguish between students who passed no English course their first year but had attempted more challenging coursework. Highest English course attempted was selected over the initial CCSF placement test in order to measure student motivation and achievement over the course of their first year. Taking higher level math courses during the first year at CCSF was predictive only if several other variables, most notably highest math course taken at SFUSD and highest English course taken at CCSF, were removed. Highest CCSF math course taken may be less predictive as more students entered CCSF college-ready in math than English; the course sequence prior to college-level math is less easily quantified; the math sequence may require less time to complete than the range of English courses.

Appendix Table 1. Odds Ratios from Logistic Regressions of Four-Year CCSF Completion Rates on High School and Community College Level Factors, Four-Year SFUSD Graduates Only, 2001 and 2002 cohorts

Explanatory Variables	(A) Population Means	Logistic Regression Odds Ratios			
		(1)	**(2)**	**(3)**	**(4)**
DEMOGRAPHIC FACTORS					
English Learner at Time of High School Graduation	15.1%	1.07	1.05		
Special Education	10.8%	1.04	0.88		
Female	46.6%	1.12	1.00		
Ethnicity:					
African-American	11.7%	1.60	1.33		
Chinese	33.2%	1.62*	1.06	1.34*	
Filipino	11.5%	0.56*	0.40**	0.47**	0.42**
Latino	22.1%	(omitted)			
Other	13.0%	1.34	0.89		
White	8.4%	1.01	0.67		
Parental Education:					
College Graduate or Higher	33.5%	1.20	1.18		
High School Graduate or Some College	45.4%	(omitted)			
Not A High School Graduate	18.2%	1.02	1.12		
Missing / Declined to State	2.8%	0.79	0.83		
HIGH SCHOOL FACTORS					
High School GPA	2.50	1.97**	2.10**	2.01**	2.09**
Ever Suspended	5.7%	0.84	0.92		
Highest Math Course Taken at SFUSD:					
Calculus	13.0%	1.46	1.72*	1.56*	1.90**
Trigonometry	21.6%	0.90	0.93		
Algebra 2	41.3%	(omitted)			
Geometry or lower	24.1%	0.62*	0.66	0.64*	0.64*
Proficiency level (1-5) on last CST test taken	2.99	1.30**	1.20	1.32**	1.26**
Number of CCSF units earned in HS	1.15	1.07**	1.09**	1.07**	1.09**
CCSF FACTORS					
Attended CCSF Full-Time	34.1%	3.35**	3.16**	3.35**	3.60**
Concurrently Enrolled in Another Two-Year College	5.5%	3.90**	4.01**	4.17**	4.24**
Highest English Course Taken First Year at CCSF:					
No English Course Taken	25.3%	0.31**	0.34**	0.32**	0.46**
College English	12.9%	(omitted)			
One Level Below College English	13.6%	0.47**	0.52**	0.46**	0.67*
Two Levels Below College English	15.1%	0.34**	0.40**	0.33**	0.52**
Three Levels Below College English	10.5%	0.43**	0.53*	0.43**	
Four or More Levels Below College English	22.6%	0.23**	0.27**	0.23**	0.39**
Highest Math Course Taken First Year at CCSF:					
No Math Course Taken	39.1%	0.99	1.00		
College Math	20.6%	(omitted)			
Pre-College Math	23.2%	0.84	0.93		
Basic Math	17.1%	0.80	0.93		
Final High School Attended Dummies		No	Yes	No	Yes
N		1,658	1,658	1,658	1,658

Asterisks indicate odds ratios statistically significant from one at the following significance levels: ** $p \leq 0.01$, * $p \leq 0.05$.