Effective Practices for Postsecondary Student Success in California

This brief offers California higher education leaders a set of evidence-based practices and interventions drawn from around the country and shown to improve college completion. The College Futures Foundation is highlighting these practices to support organizations interested in applying for California's Award for Innovation in Higher Education or College Promise Innovation Grant Program.

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Background

Postsecondary leaders across California are committed to help all students complete college on time and with skills and knowledge to support their success in life. At present, the Golden State is projected to be 1.1 million bachelor's degrees short of economic demand by 2030.[i] A majority of high school students in California go directly to college but more must be done to help all students achieve a college degree or credential with value in the labor market.

To address this challenge, California lawmakers have authorized new grants for state and local education leaders focused on degree attainment, particularly among historically underserved students. The Award for Innovation in Higher Education and College Promise Innovation Grants Program have different requirements and timelines, but in general grantees can use these awards to develop programs and refine policies that (a) reduce the cost of attendance and the amount of time it takes students to earn their credentials, and (b) strengthen partnerships between school districts and community colleges or other postsecondary institutions to better prepare all students for college, increase the percentage of students earning associate degrees, technical certifications and Bachelor's degrees and improve transfer rates from community colleges to California universities.

Effective Practices

This brief highlights four practice areas and evidence-based implementation strategies drawn from around the country to improve college completion among diverse student populations:

1. Improve K–12 to college transitions
2. Transform remediation and program coherence, and accelerate time-to-degree
3. Improve transfer rates from two- to four-year colleges
4. Collect and use of data to improve student progress and outcomes

These practices, which will help education leaders focus on proven strategies at key points along a student's post-secondary career, align well with the grant guidelines for California's Innovation Awards and College Promise Grant programs.

Effective Practices and Strategies Table of Contents

EFFECTIVE PRACTICES	STRATEGIES
1. Improve K–12 to College Transitions	A. Prioritize opportunities for high school students to learn about college and align programs to support seamless K–12 to college transitions B. Design pre-college interventions through collaborative policy design, data use and programming between secondary and postsecondary institutions C. Prioritize dual/concurrent enrollment programs to help high school students earn college credit and experience postsecondary instruction
2. Transform Remediation and Program Coherence, and Accelerate Time-to-Degree	D. Implement corequiste remediation to help students save time and money and succeed in their chosen field. E. Organize students into learning communities using a structured cohort model F. Extend semester-long credit-bearing courses while offering increased supports G. Provide students with accelerated degree options H. Design competency-based degrees that offer credits based on direct demonstrations of learning I. Implement three-year degrees
3. Improve Transfer Rates from two- to four-Year Colleges	J. Provide students with rigorous, subject-specific program maps that plot the journey from community college through a four-year degree, such as through Guided Pathways programs K. Establish recruitment partnerships that allow two- and four-year colleges to increase transfer student success rates L. Help transferring students ease their transition, especially those enrolled in STEM programs
4. Collect and Use Subgroup Data to Improve Student Progress and Outcomes	M. Define data requirements and routines that offer administrators a clear lens into student performance N. Engage key stakeholders in strengths and growth areas to improve transfer student outcomes O. Continuously monitor student progress toward transfer eligibility and intervene when students are off track

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Effective Practice #1: Improve K–12 to College Transitions

Focus question: In what ways can education leaders improve college readiness and successful transitions for students from high school to community college and community college to four-year institutions?

A. **Prioritize opportunities for high school students to learn about college and align programs to support seamless K–12 to college transitions**. During high school, most students can expect less than an hour of postsecondary education counseling during the entire school year.[ii] First-generation college students are even less likely to receive college advising, leaving them more likely to delay college entry.[iii] Partnering with a local K–12 district enables more opportunities for all students to receive important college context and information. Higher education institutions across the country that partner with their local K–12 districts to share resources and data, align curricula, coordinate support services and provide college transition advising are seeing promising payoffs. [iv] For example, the University of California's college access programs reach 100,000 students every year and up to 70 percent of participants go on to higher education, compared with 41 percent of all California students.[v] These partnerships help high school students build their college knowledge, navigate the college application, financial aid and college transition processes, and develop enduring college aspirations.

   ▪ Northern Virginia's Pathway to Baccalaureate program—comprised of a consortium of Northern Virginia K–12 public schools, local community colleges and George Mason University—provides students with support and structures for transferring from high school to community college and community college to a four-year college. More than 80 percent of the program's students transition directly from high school into postsecondary education and are retained from year to year.

   ▪ Valencia College's (FL) Got College initiative partners with Osceola County School District to engage parents and students in the college process and provide them with services that will aid successful enrollment. The program includes sessions for parents on college and financial aid assistance, and pairs current college students with seniors from their high school to discuss college and offers high school students campus tours and transition coaches to aid the application process.[vi] Since 2005, Valencia has doubled the number of associate's degrees it awards due to the large increase in degree seeking students.[vii]

B. **Design pre-college interventions through collaborative policy design, data use and programming between secondary and postsecondary institutions**. Nearly 68 percent of first-year students at community colleges discover that they must take remedial English and/or math courses; less than half of those students go on to enroll in college-level English and/or math courses.[viii] High schools and postsecondary institutions that collaborate by aligning on college readiness testing requirements and proficiency levels, curriculum and data are better equipped to identify and design interventions that help at-risk students get on track before college.

   ▪ Maryland recently passed legislation requiring students not yet college ready by the end of 11th grade (based on their SAT, ACT, Advanced Placement, Accuplacer or PARCC tests) to be provided mandatory extra support during their senior year.[ix] College-ready scores are co-determined by state and local education leaders and community college administrators. K–12 districts and high school teachers are also partnering with local community college faculty to develop curriculum for developmental classes to ensure that students improve their readiness for college.[x] Other states including North Carolina and Tennessee have implemented similar programs though with more flexibility.[xi]

- Tennessee's [Seamless Alignment and Integrated Learning Support (SAILS)](#) Math program makes it possible for 12th graders not yet meeting college readiness benchmarks in mathematics to take developmental courses during their high school senior year. In the first year of statewide implementation, 69 percent of SAILS students completed all developmental requirements and an additional 19 percent saved at least a semester of remediation in college, resulting in over $6.4 million in savings on tuition and books for Tennessee students.[xii] Since SAILS was implemented in 2012, there has been a 15.6 percent decrease in the number of students that enter community college in need of remediation.[xiii]

C. **Prioritize dual/concurrent enrollment programs to help high school students earn college credit and experience post-secondary instruction.** Dual enrollment programs allow high school students to enroll in college-level courses for college credit. These programs vary by target population (e.g., middle performing students, historically underserved students, rural communities), staffing (e.g., high school teachers, community college faculty), location (e.g., college campus, high school campus) and cost to students. States and districts that remove a student's tuition burden see larger proportions of minority and low-income students participating in dual enrollment programs.[xiv] Graduates of dual enrollment programs become familiar with college expectations and academic behaviors, which helps to boost their college identity.[xv] The result? Students in these programs are 50 percent more likely to graduate college within six years than their peers who did not participate in such programs.[xvi]

> **EVIDENCE OF SUCCESS:**
> Tennessee's Seamless Alignment and Integrated Learning Support (SAILS) Math Program
>
> Nearly 70 percent of community college freshman in Tennessee are placed in remedial courses upon enrollment in higher education. Tennessee's SAILS Math program, developed by K–12 teachers and faculty at Chattanooga State Community College, provides a developmental Math curriculum to students that have not met college-ready benchmarks by their senior year of high school.
>
> In fall 2014, over 25 percent of eligible students participated in the SAILS Math program and—with a 62 percent completion rate—saved Tennessee more than $6 million on remediation at the college level.

- University of Texas's (UT) [OnRamps](#) program provides high school students with a series of college-credit courses designed by University of Texas at Austin faculty and taught by local high school teachers within their high schools. Teachers go through intense training and receive year-round 1:1 support. The state of Texas reimburses teacher training and student course fees for all participating districts. As a result, more students are learning first-hand what it takes to succeed in college-level courses. Since the program began in in 2011, more than 6,000 students have benefited, earning more than 2,600 UT credit hours.

Effective Practice #2: Transform Remediation and Program Coherence, and Accelerate Time to Degree

Focus question: What effective strategies can dramatically improve student readiness for credit-bearing work and shorten their time-to-degree?

D. **Implement corequisite remediation to help students save time and money and succeed in their chosen field**. The corequisite model delivers academic and nonacademic support while students are learning college-level content. Corequisite support takes many forms to help students develop the suite of academic and nonacademic skills necessary for gateway course success and academic momentum. The supports are discipline-appropriate and might include, for example, required tutoring, supplemental instruction, computer lab learning, group assignments, study groups and/or co-enrollment in a skill-building course. The corequisite model removes the traditional delayed start to credit-bearing courses due to remediation requirements and helps students master the content needed for success in their chosen field. Corequisite remediation is more expensive to implement than traditional remediation but results in lower costs per successful student than traditional models.[xvii] It has also proven to be more effective for students, regardless of academic preparation level, age, or ethnicity than traditional remediation. These findings are true both in the university and community college setting.

- West Virginia Community and Technical Colleges offers corequisite remediation across the entire system, increasing the percentage of students enrolled in remediation who complete a credit-bearing math gateway course. These corequisite courses offer college-level English and math, and provide struggling students with additional support, including tutoring and academic skills coaching.

- The Virginia Community College System uses a newly-designed diagnostic to better match students to corequisite options, resulting in higher placement and enrollment rates for college-level math. The previous diagnostic required all degree-seeking students to demonstrate competency through the intermediate algebra level to enroll in college level math. The new diagnostic separates math competency requirements for students pursuing liberal arts and STEM programs. As a result of this redesigned approach, the percentage of students placed directly into entry-level college math has increased by 24 percent from 2010 to 2012.

EVIDENCE OF SUCCESS:
Corequisite Model

Within one year implementing corequisite remediation throughout West Virginia Community and Technical Colleges (WVCTC), the percentage of students enrolled in remediation and completing a credit-bearing math gateway course increased from 14 percent to 62 percent.

Georgia experienced similar dramatic improvements. The percentage of students enrolled in remediation who completed an associated, credit-bearing gateway course increased from 29 percent to 69 percent (math) and 27 percent to 73.4 percent (English). Results for African-American students are similar to system-wide results and even higher for Hispanic students with 75.4 percent of students enrolled in co-requisites completing their gateway math and /or English in one year.

In Tennessee, success rates in gateway math courses in one academic year improved from 12.3 percent to 54 percent regardless of entering ACT score.

E. **Organize students into learning communities using a structured cohort model.** Students in highly structured cohort models with integrated supports take their courses with a set of peers organized as a learning community. Some models require that cohorts enroll in 1-2 required courses together each semester, giving students autonomy over the remainder of their schedule. Other less flexible models group students by program of study and require students to take all their courses together. Both approaches have been linked to increasing academic and social integration, which in turn has a significant positive impact on student success.[xviii] These findings are substantiated both in the university and community college setting.

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- Kingsborough Community College designs learning communities (25 remedial students in each) during their first semester. During that semester, students take the same English course as well as an academic and a freshmen orientation course. Cohort students also receive textbook vouchers, academic counseling and tutoring. A recent MDRC report on the Kingsborough program shows that, after six years, more students in the learning communities program earned a degree (35.9 percent) than did students in the control group (31.3 percent)—an impact of 4.6 percentage points. The program also increased average credit accumulation by 4.0 credits over six years.[xix]

F. **Extend semester-long credit-bearing courses while offering increased supports.** Extending a semester-long course into a full year offers students college-level content and basic skills (e.g., time management and study skills) in just one course. This approach has been shown to significantly help students who are enrolled at the lowest remediation levels.[xx] The California Acceleration Project's Path2Stats model, Carnegie Foundation's Statway and Quantway models and the Charles A. Dana Center's New Mathways model have all used the one-year model to achieve significant increases in gateway course success compared to traditional prerequisite models. Institutions that offer the Statway model are experiencing a 45 percent increase in students who pass their math gateway course.[xxi] While nearly 20 percent of students needing two or more developmental classes complete a college-level course in three years, 30 percent of New Mathway students complete the credit-bearing sequence in one year.[xxii]

> **EVIDENCE OF SUCCESS:** Texas Affordable Baccalaureate (TAB)
>
> In response to the Texas governor's 2011 challenge to the state to create a $10,000 bachelor's degree, TAMU-C partnered with other Texas public higher education stakeholders to develop the Texas Affordable Baccalaureate (TAB). TAB is a fully online, competency-based bachelor's degree program in Organizational Leadership made up of 99 competencies. Students can attempt to master as many competencies as possible in a seven-week term, with each term costing $750. The first cohort of students graduated in 2015 with an average cost savings of more than $6,000.

- The California Acceleration Project's Path2Stats is a rigorous two-semester model for college-level statistics that eliminates the need for students to complete remedial algebra and basic math skills courses as a prerequisite. The course model eliminates algebra concepts that may unnecessarily hinder non-STEM students' success, and emphasizes math's applicability to real-world situations. During a pilot study at Los Medanos College (CA), students in the Path2Stats program completed college math by more than twice the rate of their peers.[xxiii]

G. **Provide students with accelerated degree options.** Options that allow students to earn their degree in less time include designing an associate's degree program to be completed in one year (attending full time) or in two years (attending part time). Studies show that the longer it takes some students to graduate due to lack of resources, discouragement or other competing priorities, the more likely they are to drop out of school. Decreasing the time to degree reduces these risks and increases the likelihood of a student applying for a transfer to a four-year institution. Research has shown that accelerated degree options result in cost savings for everyone involved. A study in Florida found that credit hours outside of degree requirements cost the state an average of $62 million a year and accelerated options saved families $30 million in college expenses.[xxiv]

- Tidewater Community College's accelerated degree program allows students to earn an associate's degree in one year, decreasing the time it takes to transfer to a four year-school. To be eligible for the program, students must first place into college-level math and English. Students then complete

the program over four, 12-week sessions that run from July of one year to June of the next year, earning 61 credits in 12 months.

- St. Louis Community College's Global Path to Success program offers working and adult students the opportunity to earn an associate's degree in two years by taking part-time classes only one night per week. To be eligible for the program, students must place into college-level English. Students complete nine integrated learning modules that emphasize written and oral communication skills.

H. **Design competency-based degrees that offer credits based on direct demonstrations of learning**. A growing number of colleges and universities offer credits based on demonstrated competency instead of time in seat. Students move through courses at their own pace, moving to new ones as they master the material. Students enrolled in a competency-based degree program are typically over 25 and come with prior work experience.[xxv] Competency-based programs are considered to offer students more direct and affordable degree options.

- Texas A&M University Commerce's (TAMU-C) Texas Affordable Baccalaureate (TAB) program is a fully-online competency-based degree program for under $10,000 that is breaking historically negative persistence patterns among its transfer student population. Students demonstrate mastery in as many of the program's 99 competencies as possible during the seven-week term; each term costing $750. The average transfer student enters the program with an average of 87 credits and gains a cost savings of $6,650 compared to students in traditional programs on TAMU's campus. Students who enter the program with 50 to 70 transfer credits are most likely to succeed with an average persistence rate of 25 percent.[xxvi]

I. **Implement three-year degrees**. Recently, in response to rising tuition rates despite still low completion rates, several states, including California, have begun exploring the three-year bachelor's degree option as one strategy to reduce time-to-degree completion and to serve more students.[xxvii] Although three-year degree programs are not common today and only a small number of students complete a bachelor's degree in three years or less, proponents of the model believe that it can lower costs (both tuition and opportunity costs), encourage students to make better use of college preparation activities in high school, streamline course sequencing and enhance student recruitment.[xxviii] Critics of the model argue that the three-year degree is not a panacea and in fact does nothing to support students who enter college unprepared and requiring remediation.[xxix] In fact, only 27 percent of students at public institutions and 48 percent of students at private institutions finish in four years.[xxx] In spite of these drawbacks, several colleges and universities have begun exploring options for three-year bachelor's degrees ranging from programs that offer extensive *credit for prior learning* (such as from dual enrollment or high school Advanced Placement courses), *competency-based models* (often online) that rely on mastery rather than seat time, *course reduction* (decreasing the number of credits required to complete a degree), or *compression* of four years' of school work into three by using year-round sessions. Many institutions are piloting these models in a set of limited academic departments.

- Northern Arizona University (NAU). NAU partnered with Pearson Higher Education to develop fully online, competency-based bachelor's degrees in business administration, computer information technology and liberal studies that students can complete in as little as three years. The program is geared toward adult students with professional and life experiences who are looking to complete a college degree. The program began in early 2013 and costs students $2,500 every six months, allowing them to finish courses at their own pace. The university also offers a traditional three-year track for students with prior learning credits and those who are willing to take summer and/or winter courses.[xxxi]

- University of Houston-Victoria (Texas). The Degree in Three, ("Dn3"), launched in 2010, offers a compressed 120-credit degree format for a select number of academic majors. The program freezes tuition and mandatory fees for three years, as long as students meet specified grade and progress benchmarks. The program can save students $1,400 on tuition. Dn3 also includes a study abroad experience and hands-on work option.[xxxii]

Effective Practice #3: Improve Transfer Rates from two- to four-year Colleges

Focus question: How can colleges increase the transfer rate of associate degree holders to four-year institutions?

J. **Provide students with rigorous, subject-specific program maps that plot the journey from community college through a four-year degree, such as through Guided Pathways programs**. Students enter community colleges with diverse backgrounds and goals. Without tailored academic advising, such as mapping out clear pathways and supports, students may not understand how to achieve their goals to enter a four-year university or get on the path toward a particular career. Community colleges and four-year institutions must work together to provide community college students with clear guidance and tailored supports to choose the right prerequisite courses to enter a bachelor's program with junior standing in their desired major. Transfer program maps, created collaboratively by community colleges and four-year institutions, provide students with a list of course sequences, prerequisites and extracurricular activities to help them translate their academic goals into a term-by-term registration plan and remain on track for a bachelor's degree. Institutions should ensure that the course sequences include rigorous coursework and high-quality academic experiences to prepare students for four-year programs.[xxxiii]

- The Pathways Project, a national effort aimed at building the capacity of community colleges to design and implement structured academic and career pathways at scale, offers an array of resources and planning templates to facilitate the local design of pathways programs. Resources and guidance available on its website can help institutions adopt and implement a pathways model by focusing on these four dimensions: (1) create clear curricular pathways to employment and further education, (2) help students get on a path, (3) keep students on a path, and (4) ensure that students are learning along their path.[xxxiv] The pathways model encourages higher education institutions to help students efficiently enroll and complete academic programs that will lead to a degree or certification in their chosen field. At a minimum, this approach requires campuses to create clear, educationally coherent program maps aligned to what students will be expected to do upon completion of their program, and help students select and matriculate to and through their program of interest through targeted support that is ongoing throughout the student's journey.[xxxv]

- Everett Community College (WA) offers students customized, field-specific transfer agreements that (1) map the various ways students can transfer based on major, (2) provide suggested sequences of courses, (3) indicate how requirements differ across specific four-year colleges, (4) identify program advisors to assist in academic planning and (5) track progress. Since implementation of the agreements, Everett Community College has increased its transfer rate 47 percent and its four-year bachelor's degree graduation rate by 57 percent.

K. **Establish recruitment partnerships that allow two- and four-year colleges to increase transfer student success rates**. Effective recruitment partnerships target diverse student populations and prepare them while at community colleges for four-year colleges. Recruitment partnerships commonly include admission and advising agreements that provide students with guaranteed admission so long as they attain the pre-determined set of classes and GPA. While at community college, students meet with a four-year college or university representatives to develop their transfer plan and receive recommendations on services and

supports that will improve their transfer application. Successful partnerships include clear transfer requirements, transfer guides, and transfer counseling to ensure student success.[xxxvi] Partner institutions also work to share data on transfer students' achievement to understand trends and dispel myths and misperceptions about transfer students' lack of preparation for rigorous coursework.[xxxvii]

- In 2010, California lawmakers passed the Student Transfer Achievement Reform Act (SB 1440 – Padilla), allowing students who earn one of two types of associate's degrees from a California Community College priority transfer to a California State University (CSU) beginning their junior year.[xxxviii] Highlighted by key advocacy organizations as a huge step toward improving California's transfer process, higher education leaders can expand access even further by continuing to align coursework requirements between community college and CSU programs. As one article highlighted from a report by the Campaign for College Opportunity on implementation of SB 1440, "a main sticking point… is finding agreement on community college courses that are similar to required classes at CSU but aren't quite on the mark."[xxxix] This would help to expand degree programs available to transferring students and eliminate barriers for transfer.

- Through the Iowa State University's Admissions Partnership Program, eligible community college students who intend to enroll at Iowa State University receive guaranteed admission (i.e. with academic requirements met), personal and academic advising and mentoring, degree planning, free transcript exchange and access to Iowa State University libraries, learning communities and other events.

L. **Provide customized and targeted support for transfer students.** Recognizing that transfer students have different needs than other first-year students, successful transition programming includes targeted advising at the community college and four-year institutions to articulate options, monitor student progress and helps students access financial resources. Four-year institutions should commit dedicated personnel, structures and resources to provide targeted support for transfer students and consider orientation and community building activities such as day- to week-long orientations, summer bridge programs and year-long community building to increase retention rates.[xl]

- California State University, Fullerton's STEM[2] program partners with three local community colleges to provide peer mentors and an eight-week summer research experience for potential STEM transfer students. Peer mentors, consisting of current CSU Fullerton students who transferred from partner colleges, have 1:1 meetings with STEM[2] students throughout the school year to assist them in the transfer process. During the summer research experience, STEM[2] students work in a lab with a faculty member, submit a research paper and present their findings at a summer research symposium. Since the launch of STEM[2] in 2011, the program has consistently increased the number of STEM transfer students and the retention of STEM majors.

- University of Wisconsin (UW) connects new transfer students with an experienced transfer student to assist with the transition, and provides housing exclusively for transfer students who are new to the UW community but not to college.

Effective Practice #4: Collect and Use Subgroup Data to Improve Student Progress and Outcomes

Focus question: How can administrators use data to improve time to degree and to reduce attainment gaps?

M. **Define data requirements and routines that offer administrators a clear lens into student performance.** Education leaders need comparable and consistent data to track and respond to performance trends on

campuses with diverse student populations. The Bill and Melinda Gates Foundation partnered with the Institute for Higher Education Policy (IHEP) to develop A Field-Driven Metrics Framework that represents how leading institutions and states are measuring their performance. The framework offers a set of metrics that are currently in use by major initiatives to measure institutional performance related to student access, progression, completion, cost, and post-college outcomes. The framework also highlights metrics in use that examine institutional performance in relation to resources (efficiency) and with respect to diverse populations (equity). These metrics represent a baseline that has garnered consensus across institutions, organizations, and states.

A Field-Driven Metrics Framework[xli]

	ACCESS	PROGRESSION	COMPLETION	COST	POST-COLLEGE OUTCOMES
Performance	▪ Enrollment	▪ Credit Accumulation ▪ Credit Completion Ratio ▪ Gateway Course Completion ▪ Program of Study Selection ▪ Retention Rate ▪ Persistence Rate	▪ Transfer Rate ▪ Graduation Rate ▪ Success Rate ▪ Completers	▪ Net Price ▪ Unmet Need ▪ Cumulative Debt	▪ Employment Rate ▪ Median Earnings ▪ Loan Repayment and Default Rates ▪ Graduate Education Rate ▪ Learning Outcomes
Efficiency	▪ Expenditures per Student	▪ Cost for Credits Not Completed ▪ Cost for Completing Gateway Courses ▪ Change in Revenue from Change in Retention	▪ Test/Credits to Credential ▪ Cost of Excess Credits to Credential ▪ Completions per Student	▪ Student Share of Cost ▪ Expenditures per Completion	▪ Earnings Threshold
Equity	▪ Enrollment by (at least) Preparation, Economic Status, Age, Race/Ethnicity	▪ Progression Performance by (at least) Preparation, Economic Status, Age, Race/Ethnicity	▪ Completion Performance by (at least) Preparation, Economic Status, Age, Race/Ethnicity	▪ Net Price and Unmet Need by (at least) Preparation, Economic Status, Age, Race/Ethnicity ▪ Debt by (at least) Preparation, Economic Status, Age, Race/Ethnicity	▪ Outcomes of Performance by (at least) Preparation, Economic Status, Age, Race/Ethnicity

N. **Engage key stakeholders in strengths and growth areas to improve transfer student outcomes.** Policies and practices that enable transparency while protecting student privacy allow for all stakeholders to see the economic value of enrolling and graduating transfer students, the rate at which transfer students are succeeding and the gaps where transfer students are falling through the cracks.

- University of Massachusetts Amherst (UMass Amherst) transfer admission staff meet individually with any faculty who express concern about transfer students' academic abilities. Transfer admission staff use these meetings to share data showing how on average transfer students are performing as well or better than their non-transfer peers. They also use these meetings identify

trends in courses or majors that transfer students may be struggling with to inform community college partners and develop way to address systemic issues collaboratively.

O. **Continuously monitor student progress toward transfer eligibility and intervene when students are off track**. Data routines and data transparency policies allow institutions to closely track transfer student progress and provide tailored support and interventions for students at risk of dropping out or extending time to degree. Successful intervention models use data to identify and then address common factors among struggling students and create early-warning systems to flag those factors and proactively provide support.

- The [Predictive Analytics for Student Success (PASS)](#) project is a collaboration between University of Maryland University College, Montgomery College and Prince George's Community College. The three institutions collaborated to build an integrated, cross-institutional database of student information and academic performance data to support the use of data mining to identify factors driving student success such as: age, marital status, community college math and English courses taken, community college GPA and credits earned.

EVIDENCE OF SUCCESS: Predictive Analytics for Student Success (PASS)

University of Maryland University College, Montgomery College and Prince George's Community College began partnering in 2010 on the PASS project, using data and analytics to improve transfer student success. Together, they built a cross-institutional database of student information and academic performance data to identify predictors of student success and developed the Success Calculator that predicts a student's probability of success at UMUC based on the predictors.

Using the cross-institutional database and Success Calculator, partner institutions are now able to predict student success and develop programs and interventions to support student success.

With the use of these proactive programs and predictions, 66 percent of community-college transfer students enroll at UMUC and 78 percent are retained from year to year.

A Final Word

As California works to graduate more students from high school and meet the demand for students with a Bachelor's degree or higher, institutions may do well to consider these four effective practices. These practices support students not only in transitioning from high school or community college into a four-year college, but also in *persisting* to completion. The opportunity provided by the new grants to put these practices and strategies into action will support a whole generation of students, particularly those traditionally underserved by our education system, to succeed and prosper.

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Appendix: Useful Resources

The following publications provide a comprehensive perspective on system and institutional improvements to support students:

Education Commission of the States, Policy Report (Nov 2015). *Core Principles for Transforming Remediation within a Comprehensive Student Success Strategy*: Highlights practices such as placing the vast majority of students directly into credit-bearing work with effective support; refining mathematical and other academic content to align with each student's choice of academic direction; and helping students stay on track to a college credential.

Jennifer Engle. *Answering the Call: Institutions and States Lead the Way toward Better Measures of Postsecondary Performance*. (Seattle, WA: Bill & Melinda Gates Foundation, 2016): Focuses on "post-traditional" students attending college and makes recommendations for adjusting college and university data systems to support them.

Joshua Wyner, K.C. Deane, Davis Jenkins & John Fink. *The Transfer Playbook: Essential Practices for Two- and Four-Year Colleges*. (The Aspen Institute and Columbia University, Teachers College, Community College Research Center, 2016): Outlines the essential practices of high-performing community colleges and universities, including making transfer student success a priority, creating clear pathways with aligned instruction and providing tailored advising for transfer students.

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