



Differentiated Dual Enrollment and Other Collegiate Experiences

LESSONS FROM THE STEM EARLY COLLEGE EXPANSION PARTNERSHIP

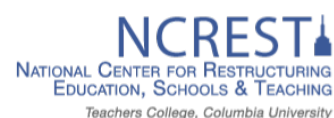
NCREST
NATIONAL CENTER FOR RESTRUCTURING
EDUCATION, SCHOOLS & TEACHING
Teachers College, Columbia University

By Elisabeth Barnett • March 2018

JOB'S FOR THE FUTURE

JFF is a national nonprofit that drives transformation in the American workforce and education systems. For 35 years, JFF has led the way in designing innovative and scalable solutions that create access to economic advancement for all.

www.jff.org



NCREST is a research and development organization, founded in 1990, to advance education stakeholders' understanding of the complex and challenging work of restructuring schools. To carry out this mission, NCREST conducts research, fosters connections, and shares expertise, resources, and images that help education practitioners, reformers, researchers, parents and community members to reimagine and create equitable and effective schools.

NCREST is particularly known for our collaborative work with school systems, districts, school networks, and non-profit organizations. At NCREST, we assert that research can become relevant, which we take to mean actionable, when a particular set of conditions are in place. These conditions include a trusting, respectful, and credible practitioner-researcher partnership where each party believes that the other contributes uniquely to the issues under investigation.

tc.columbia.edu/ncrest



The Middle College National Consortium believes that authentic school reform grows out of sustained collaboration among master practitioners, structured communication, and support for perpetual growth of leadership skills for all constituents. Centered on four Design Principles, MCNC schools bridge the high school and college experience for underserved youth leading to increased access to and success in college. A school-based, data driven practitioner network, Middle College National Consortium has successfully pioneered innovation in programs that serve districts, community colleges, universities, both public and charter; around the country for over three decades.

mcnc.us

ACKNOWLEDGMENTS

I am deeply grateful to our partners at Jobs for the Future, the Middle College National Consortium (MCNC), and the Michigan Early Middle College Association (MEMCA) for their support in developing this publication and for their contributions to our understanding of the ways that access to dual enrollment can be vastly expanded.

In addition, representatives of a number of Michigan schools involved in the STEM Early College Expansion Partnership graciously gave of their time to share information on how they differentiate dual enrollment and other collegiate experiences. Thank you to interviewees from Carman Ainsworth High School, Clio High School, Imlay City High School, North Branch High School, and Ypsilanti STEMM Academy. Much appreciation also to Chery Wagonlander and Joel Vargas for their comments on a draft of this publication. And special thanks to Debbie Davis for her willingness to co-present on this topic.

Our colleagues at JFF have been instrumental in the development, editing, and publication of this brief. Thank you to Joel Vargas for his guidance and careful review, as well as to the entire communications team for their production and design work.

Finally, I am grateful to the Investing in Innovation Fund managed by the U.S. Department of Education for allowing us to undertake the STEM Early College Expansion Project, and for matching fund support provided by the AT&T Foundation, the Charles Stewart Mott Foundation, the Fairfield County Community Foundation, and Teachers College, Columbia University.

AUTHOR

Elisabeth Barnett is associate director of the National Center for Restructuring Education, Schools and Teaching at Teachers College, Columbia University as well as project director of the STEM Early College Expansion Partnership, funded by the USDOE's Investing in Innovation grant. She is also a senior research scientist for the Community College Research Center at Teachers College. Barnett has led research on the high school-to-college transition, college readiness, dual enrollment, community colleges, developmental education, middle and early college high schools, and career and technical education practices. Barnett received her PhD from the University of Illinois at Urbana-Champaign in higher education.

TABLE OF CONTENTS

01

Introduction

02

Why Focus on
Dual Enrollment
and Other
Collegiate
Experiences

04

Differentiated
Dual Enrollment
and Collegiate
Experiences

05

The SECEP
Context

07

What SECEP
Schools Are
Doing to
Differentiate

14

Conclusion



INTRODUCTION

Students in Bridgeport, Connecticut and four intermediate school districts (ISDs) in Michigan have opportunities to experience themselves as college students while still in high school.¹ Educators believe—and research has shown—that participating in college credit coursework while in high school increases the chances that students will graduate, go on to college, and earn a college degree.

While these opportunities have been available for a long time in the form of dual and concurrent enrollment, as well as Advanced Placement (AP) and International Baccalaureate (IB) courses, they have tended to be extended primarily to the most academically advanced students—those who would have completed college in any case. But what if they could also be offered to those in the academic middle, including students who are on the fence about attending college? And perhaps students who are not eligible for dual enrollment could engage in other experiences that have some of the same benefits, called here “collegiate experiences.”

The STEM Early College Expansion Partnership (SECEP) was developed to increase access to dual enrollment courses and other collegiate experiences to students in traditional high schools, based on the early/middle high school model. In alignment with the practices of middle and early colleges, SECEP schools commit to enabling at least 90 percent of their students to engage in some form of college course-taking before graduation from high school.

STEM Early College Expansion Partnership

Middle and early college high schools enable students to take college courses as part of a comprehensive plan to accelerate their progress through secondary and postsecondary education. They have proven particularly effective for young people from low-income families and other backgrounds underrepresented in higher education. More recently, traditional high schools are using methods developed in middle and early college high schools to expand access to dual enrollment such as early preparation for college coursework and comprehensive student supports. When these efforts are embedded in traditional schools, they are called early college programs.

The national STEM Early College Expansion Partnership seeks to develop and support early college programs in traditional schools. The project is led by the National Center for Restructuring Education, Schools and Teaching (NCREST) at Teachers College, Columbia University, in collaboration with Jobs for the Future (JFF), the Middle College National Consortium (MCNC), Bridgeport Public Schools, and four intermediate school districts in Michigan. The work is made possible by a \$12 million, five-year Investing in Innovations grant from the U.S. Department of Education.

NCREST, JFF, and MCNC provide technical assistance to the participating districts and schools. They offer professional development and provide coaches for district leaders, teachers, and principals; assist with aligning curriculum and instruction with the early college model; support the development of secondary-postsecondary partnerships; and build shared understandings through a community of practice.²

WHY FOCUS ON DUAL ENROLLMENT AND OTHER COLLEGIATE EXPERIENCES

Dual enrollment coursework has been shown to increase the likelihood that traditionally underserved students will succeed in college. Further, dual enrollment holds the potential to offer an onramp to postsecondary success for traditionally underserved students. Karp, Calcagno, Hughes, Jeong, and Bailey (2007) conducted research using administrative datasets from Florida and the City University of New York. Using correlational research methods and controlling for key student characteristics such as race/ethnicity, gender, socioeconomic background, and previous academic attainment, they found that Florida students who participated in dual enrollment were more likely to graduate from high school and enroll in college when compared with similar students who did not participate in dual enrollment. Similar results were found for CUNY students. Some additional findings from this study were:

- Dual enrollment students persisted in college and earned 15 more college credits three years after high school graduation than nonparticipants.
- The college GPAs of dual enrollment students were significantly higher than those of nonparticipants.
- Males and low-income students benefited more from dual enrollment participation than their peers.
- Students with lower high school grades benefited to a greater extent from dual enrollment participation than students with higher grades.

Swanson (2008) conducted another study of 213,000 dual enrollment students who graduated in 1992. When compared with their peers, dual enrollment students were 12 percent more likely to enter college within seven months of graduation and 11 percent more likely to remain enrolled through the second year of college. Dual enrollment students who entered college within seven months of graduation from high school were between 16 and 21 percent more likely to earn a bachelor's degree than nonparticipants.

In another study, An (2013) used national survey data and compared samples of participants and nonparticipants. He found positive effects of dual enrollment participation on earning a bachelor's degree. Importantly, An's research found that taking two or more dual enrollment courses approximately doubled the effect. The positive effects of participating in dual enrollment were particularly strong for first-generation college students and students whose parents had some college but no degree.

Both AP and IB programs offer rigorous courses that include opportunities to demonstrate mastery on final exams that sometimes result in the award of college credit. They also position students well for admission to selective colleges (Hertberg-Davis, Callahan, and Kyburg 2006). While a number of studies (Dougherty, Mellor, and Jian 2005; Geiser and Santelices 2005; Klopfenstein and Thomas 2009) found little impact of participation in AP courses on subsequent performance in college, higher scores on AP exams were associated with positive college outcomes (Geiser and Santelices 2004). One study showed that students who enrolled in IB programs went on to earn higher GPAs in college (Geiser and Santelices 2004).

Other collegiate experiences may provide some of the benefits of dual enrollment. For example, summer bridge programs were found to increase the likelihood that students would pass college-level math and English courses and accumulate more credits in their first year of college (Barnett et al. 2012). Participation in student success or College 101 courses, sometimes offered in high schools, increase the likelihood that students will complete college (Zeidenberg, Jenkins, and Calcagno 2007).

DIFFERENTIATED DUAL ENROLLMENT AND COLLEGIATE EXPERIENCES

Generally, dual enrollment and other collegiate experiences are more likely to be offered to students who are academically advanced. However, many more students could benefit. We suggest that schools expand access by making sure that there are options for a broader range of students. This approach is framed here as “differentiated” dual enrollment and other collegiate experiences. The emphasis is on finding ways to make sure that students who may not be ready to undertake college-level coursework while in high school are exposed to the world of postsecondary education.

Table A shows a way to think about differentiation within a school. Typically, students can be classified into three groups based on their prior academic achievement. The boundaries of these groups are not firmly defined, and group membership may vary over time. They are:

- Most academically advanced: Generally, these are students who have always known they will go to college and are eligible for any collegiate experience option available.
- Academically midrange students: These students might want to go to college, but are worried about their grades and/or their ability to pay for and succeed in college. They are generally eligible for fewer options.
- Least academically advanced: These students perform less well academically and may not think of themselves as likely to attend college. However, they might be open to the idea under the right circumstances.

Further, students in each of these groups may be attracted to undertaking coursework with general education content or in career-focused topics. Often, students may be interested in both of these options. With this in mind, we propose a planning framework that schools can use to offer engaging collegiate experiences to each of these groups.

TABLE A

Students' prior academic record	Dual enrollment and other collegiate experiences	
	General education focused options	Career focused options
Most advanced academically		
Academically mid-range		
Least advanced academically		

THE SECEP CONTEXT

In this report, we describe ways that schools in the SECEP project are working to make sure that their students participate in at least one college course or other meaningful collegiate experience before graduation from high school. The participating schools are undertaking the hard work of developing a menu of options for students whose readiness and goals vary considerably. Furthermore, they are learning to address the logistical hurdles involved in offering dual enrollment courses and other collegiate experiences: working with college partners, figuring out the finances, and navigating the complexities of setting up these opportunities in each local community. They are taking full advantage of currently existing curricular options, while initiating new ones when needed.

Before the start of the SECEP project in 2014, the participating high schools had all offered limited numbers of dual enrollment and Advanced Placement courses. In addition, many had programs that allowed students to earn articulated credits in career technical education courses.³ What is more, a number of high schools were working with local colleges to introduce students to the college environment by setting up college fairs, college visits, counseling by college outreach staff, etc. However, there was not a systematic effort to involve the majority of students, including those in career-technical education or those who were unsure about whether to go to college.

The SECEP project challenged participating schools to set the bar high. They were asked to find ways to ensure that 90 percent of their students would graduate with at least one college credit earned. To set the stage, we conducted a baseline analysis of schools' status at the outset of the project. Upon compiling the relevant data, we found that the schools generally offered dual enrollment and Advanced Placement courses to relatively few students, as shown in **Table B**.

TABLE B

Proportion of 2013-14 students participating	Dual enrollment	Advanced Placement
5% or less	9 schools	2 schools
6% to 15%	3 schools	7 schools
16% to 50%	2 schools	1 school
Total	14 schools	10 schools

Clearly, there was a lot of work to be done to reach more students. Further, new thinking was required to make sure that the options were aligned with students' needs and interests. Over the course of the project, different schools have expanded access to dual enrollment and other collegiate experiences in unique ways. Each school, often working with college partners and sometimes an external organization (e.g. College Board, Project Lead the Way), has determined which offerings made sense in each category.



WHAT SECEP SCHOOLS ARE DOING TO DIFFERENTIATE

In 2017, to learn more about how schools were expanding opportunities in this area, we gathered information from attendees at SECEP conferences. They described their dual enrollment and other collegiate experience opportunities and ways that they overcome barriers to expanded access. We classified examples of their current offerings into our framework, as shown in **Table C**, and describe them further below.

TABLE C

Students' prior academic record	General education focused SECEP examples	Career focused SECEP examples
Most advanced academically	<ul style="list-style-type: none"> • Advanced Placement (AP) • Dual/concurrent enrollment 	<ul style="list-style-type: none"> • DEEP in medical, law, or engineering careers • Project Lead the Way
Mid-range	<ul style="list-style-type: none"> • Middle/early college with a general education focus • Dual /concurrent enrollment with seminar or a co-req course 	<ul style="list-style-type: none"> • Career pathways programs
Least advanced academically	<ul style="list-style-type: none"> • Student success or college-ready courses • Summer bridges • College brush up programs for placement tests⁴ • On campus experiences (use of science labs, clubs, library, other) 	<ul style="list-style-type: none"> • CTE articulated credit programs • On-campus experiences (use of CTE labs, other)

For Academically Advanced Students

Students who are academically advanced have a range of options because they can take advantage of dual enrollment and other collegiate experiences that admit students who score well on tests or earn good grades. The ones mentioned here were available to the most academically advanced students in one or more SECEP schools.

Advanced Placement (general education): All of the interviewees indicated that their schools offer AP courses. The most commonly mentioned courses were calculus, literature, languages, and English composition. Students did not always take AP exams at the end of these courses, and when they did, substantial numbers did not earn a score of 3 or higher (out of 5), making it unlikely that the courses would be accepted for college credit in the future. Even so, interviewees believed that students benefited from the rigor of AP courses, and from the extra weighting awarded in the calculation of the high school GPA.⁵

Dual/concurrent enrollment (general education and career): A number of the schools work with multiple colleges to offer dual enrollment options, picking the college courses that work best for their students, their structure, and their calendar. According to the interviewees, many of the academically advanced students are interested in taking general education core courses that will be readily accepted at the colleges they plan to attend, and most likely to apply to the requirements for any future major. Some also take courses in career-focused areas, especially when these are unavailable at the high school. In some cases, students take courses offered by the colleges they intend to attend in the future, making it highly likely that the courses will be approved for credit.

For students to take dual enrollment courses, they generally need to pass the college placement test and be on track to graduate. Courses passed typically count for both high school and college credit. They may be offered on the college campus or at the high school, and are usually taught by a college faculty member. There

is less enthusiasm in Michigan and Connecticut, as compared with other states, for offering courses taught by regular high school teachers with adjunct faculty status, partly because college credits from courses taught at the high school are not accepted by some top universities. In addition, course offerings are limited by funding considerations as high schools must pay the college tuition for these courses, although sometimes at a reduced rate.⁶

DEEP (career): For academically advanced students in Genesee County, Michigan with interest in medical, law, or engineering careers, one option is the Dual Enrollment Educational Partnerships (DEEP) program. Developed by the University of Michigan at Flint in collaboration with local school districts, DEEP is designed to allow motivated and academically strong students to take a series of college courses related to their career interest.

DEEP students participate in a two-year sequence of college courses along with their high school coursework. College courses taken during the 11th grade focus on general education subjects, and may include Introduction to Logic, Introduction to Sociology, and Topics in Writing for the Sciences. The courses were selected as helpful for building the skill set that would prepare students well for a university experience. College courses taken in the 12th grade are specific to the career pathway.

Project Lead the Way (career): Several districts are also offering Project Lead the Way, a national curriculum model with a focus on STEM subjects, especially engineering. Students may earn both high school and college credit for some courses in this pathway.

For Mid-Range Students

Middle/early college with a general education or career focus: Middle and early college high schools and programs offer sequences of high school and college courses that allow students to graduate high school with 20 or more college credits earned. Their intent is to reach and serve students from groups under-represented in college. They are located on or near college campuses and combine rigorous coursework with extra supports to help

students become ready to take college courses and then to succeed once they are enrolled in them. Mott Middle College High School, established in 1991, was the first such school in Michigan; as of 2017, there are 24 in the state.

Comprehensive Michigan high schools have the option of offering early college programs to students as well. These programs, embedded in the high school, allow participating students to earn a high school diploma and a substantial number of college credits by graduating in five years instead of four. Participating schools enter into a formal agreement with one or more postsecondary partners and must obtain authorization from the Michigan Department of Education. Program students can take free college courses while still receiving support from their home high school, making them of particular value to students who might struggle to succeed in college.

School districts receive full funding for each participating student, a portion of which is distributed to the college to cover the cost of tuition. As of 2017, there are 110 such programs in Michigan.



“[Our school] offers the early college program ... for students wanting the fifth-year option. We graduated our first fifth-years last year. Students ... can declare in their sophomore year and take the [College] Skills Class during the second semester of the sophomore year. Then in the junior year, they take two college classes each semester, usually in humanities: psychology, sociology, or art or music appreciation. They are on the [college] campus half the day.”

– High School Counselor

“The Advanced Manufacturing Program is a one-school-year certificate program. It is an intense 35-hour per week, 34-college-credits program designed to provide students with the twenty-first century manufacturing skills needed by today’s manufacturers. Students can choose a day or night schedule.”

– High School Administrator

Pathways programs (career): Bridgeport Public Schools have set up two pathways in which students start in a career area in high school that connects with college level programs in advanced manufacturing (with Housatonic Community College) and health occupations (with St. Vincent College). In the advanced manufacturing pathway, students are able to earn 17 college credits by the end of 12th grade. If they choose to enroll in another semester of coursework after graduation, they can complete the pathway and earn a certificate and/or work toward an associate’s degree. Similarly, many of the Michigan ISDs offer career pathways options for students that combine high school and college coursework, and often the chance to earn certifications of value in the workplace.

Dual/concurrent enrollment with seminar or a co-req course: Some academically mid-range students could succeed in a college course with additional support, and research indicates that these are the students most likely to benefit from the dual enrollment experience (An 2013; Karp 2007). One way to offer this support is to set up a companion course to provide extra help throughout the course. This is a common practice among middle and early college high schools and is often called “seminar.” For example, Mott Middle College High School in Flint, Michigan offers seminar courses that accompany such college courses as English 101, Computers 150, and College Algebra 110. Colleges

are often using this approach as well, implementing the “co-req” model, an approach that has been shown to help students placed into remedial writing or math to complete college-level courses sooner (Cho, Kopko, Jenkins, and Jaggars 2012).⁷

For Least Academically Advanced Students

Student success or college-ready courses: A number of schools affiliated with the SECEP initiative have vastly broadened access to college “student success courses,” typically taught during a student’s first semester. Sometimes called Freshman Seminar or College 101, these courses serve several functions. First, they are designed to help enrollees to develop academic skills and an understanding of the college environment; some also provide help with college and career planning and with analyzing one’s own strengths and challenges. Second, students have the experience of participating in a college curriculum in which they learn actual college material and are awarded college credit, potentially making them feel like “college material.” Finally, these courses are typically open to students of different academic proficiency levels, making them accessible to most students.

Bridgeport Public Schools is offering Housatonic Community College’s Freshman Seminar 100 to ninth

grade students, taught by a college professor. Several Michigan schools are offering their 10th-graders a Baker College course entitled Running Start that allows them to earn one college credit.

Other schools offer their local community college's student success course. For example, Escanaba High School offers Bay College's College Experience course.

Summer bridge programs: Schools in the Washtenaw Intermediate School District enroll selected students in a summer bridge program, held on the campus of Washtenaw Technical and Community College. These students spend four weeks studying college-related "soft skills," exploring academic pathway options, and improving their reading and writing skills, while also learning how it feels to be in the college environment. Students are considered college-ready in writing and/

or reading if they obtain good grades and demonstrate high competency in soft skills. Students who complete this program may participate the following summer in a math bridge program.

CTE articulated credit programs: Most of Michigan's Independent School Districts house an Ed Tech Center in which students can prepare for careers or further postsecondary education in a career area. In many of their career pathways, articulation agreements are in place with local colleges. These allow students who have completed specified courses to earn college credits once they matriculate to the participating college; in some cases, they must complete additional requirements such as passing the next course in the sequence.

“Baker College’s course covers personal learning styles, test taking, critical thinking, study skills; also personal preparedness, goal setting, financial literacy; academic preparedness, and study skills. I think it’s going well. It’s getting kids on Blackboard, which is very applicable to college. We run the course one to two days a week during English class, taught by an English teacher vetted by Baker College. It is integrated with the English standards”

– High School Counselor

“Careers in education are very popular at the Ed Tech Center. The teacher runs a preschool program there. She is a phenomenal teacher with a background in developmental psychology and she’s very knowledgeable. Marketing is also popular. It’s not available at the high school. Kids can set themselves up well at the Ed Tech Center”

– High School Counselor

College brush-up programs for placement tests: In many cases, participation in dual enrollment courses is only possible for students who have passed a college’s placement test. Students who have learned but later forgotten material can benefit from participating in brush-up preparation activities, which may be encouraged or facilitated by the school. For example, Mott Community College in Michigan provides access to an AccuPlacer test preparation website and encourages students to make use of it to improve their performance on the placement test.⁸

On campus experiences (labs, clubs, library, activities): There are ways to make sure that all students are exposed to the college environment by structuring opportunities to spend time on a college campus. Schools in the SECEP project have found a variety of ways to make this happen. These include campus visits or a day spent shadowing a college student. High school courses may incorporate some labs that are completed on the college campus. For example, a science course unit could include work in a college lab with more extensive equipment than is available at the high school. Or students can get involved in college clubs or activities if this is structured through an agreement between the college and school.

“There are things we coordinate through the [local] College Access Network for college and career readiness and preparation. We have speakers come in from the college. We do tours, college nights, and other activities.”

– High School Assistant Principal

Strategies That Enable Differentiation

Helping students plan ahead: Students may be better positioned to take advantage of dual enrollment and other collegiate experiences if they know about them early and plan to participate. For example, at Ypsilanti STEMM Academy, they are working to develop a plan or map for each student that covers all their high school coursework. In the future, students will do these as they

enter ninth grade. Other schools are working to better communicate the range of options to both students and parents, while also addressing fears that students will struggle or that credits won't transfer.

Career-specific differentiation: Among SECEP schools in Michigan, some leaders are working to structure opportunities that would allow students of different academic proficiency levels to advance their learning related to a particular topic such as health and medicine.

“There is something for every level in medicine. Students can take Health Occupations at the Ed Tech Center, or Health Science at Ed Tech. Health Science is more in-depth [than Health Occupations]. We try to personalize to students’ interests. AP Chem or Anatomy is available. Or they can do Medical Terminology with [the community college]. There is also dual enrollment with [the university] including Medical Careers-Accelerated. Students can earn 13 college credits through an agreement between the county and the college.”

– High School Counselor

Matching students to available options: Advisors regularly work with students and parents to help them decide which options make the most sense. AP may have the advantage of boosting the student's GPA when the course is weighted. However, it may not be accepted for college credit, depending on the AP exam score earned and the requirements of each college. On the other hand, while dual enrollment courses generally transfer, they don't boost the GPA and are sometimes less highly regarded in the college admissions process.⁹

It appears that there is sometimes a tension between AP and dual enrollment options as schools have limited numbers of high achieving students who would be eligible to participate. Typically, a critical mass is needed to offer a particular AP class; the same is true for dual enrollment courses offered at the high school.

Student supports: Students taking challenging courses may run into problems. Ideally, school counselors and others at the high school make a point of keeping track

of how they are doing to make sure that they get help from a college professor, teacher, or tutor when needed. This is especially important when students are involved in a new experience such as taking a college class. In some settings, supports are offered that are designed to prepare students to be ready for a college class. Students at Ypsilanti STEMM are taught soft skills in their high school classes before they dually enroll using a curriculum developed by Washtenaw Technical Middle College.

Financing and state oversight: State policy in Michigan has played a major role in facilitating dual enrollment and early and middle colleges. Legislation dating back to 1996 first established a postsecondary enrollment options program. The law stipulated that school districts were required to pay dual enrollment students' tuition and fees as well as to provide counseling and information to eligible students and their parents. Other legislation permits the establishment of fifth-year programs in high schools as described above. In Connecticut, there is little support from the state, although there is helpful assistance from local foundations for some collegiate and career preparation experiences.



CONCLUSION

The SECEP program provides a context in which high schools are committed to work with college partners to increase student access to dual enrollment and other collegiate experiences. In this context, it has been necessary to look at how to find options that work for students with different interests, goals, and academic preparation. This work is ongoing, but considerable progress has been made in figuring out ways to include many more students in these important opportunities.

In some cases, approaches and ideas have been adopted from middle and early college high schools such as academic support for dually enrolled students. In other settings, schools are coming up with local solutions or expanding access to programs that have been around for a long time, such as AP courses or articulated credit opportunities.

We hope that this brief supports the efforts of comprehensive high schools seeking to expand the number of students who participate in dual enrollment and other collegiate experiences. Based on prior research, access to these opportunities will allow more students to achieve successful educational outcomes.

REFERENCES

- An, B. 2013. "The Impact of Dual Enrollment on College Degree Attainment: Do Low-SES Students Benefit?" *Educational Evaluation and Policy Analysis* 35 (1): 57-75.
- Barnett, E. A., R. H. Bork, A. K. Mayer, J. Pretlow, H. D. Wathington, and M.J. Weiss. 2012. *Bridging the Gap: An Impact Study of Eight Developmental Summer Bridge Programs in Texas*. New York: National Center for Postsecondary Research.
- Cho, S., E. Kopko, D. Jenkins, and S.S. Jaggars. 2012. *New Evidence of Success for Community College Remedial English Students: Tracking the Outcomes of Students in the Accelerated Learning Program (ALP)*. New York: Columbia University, Teachers College, Community College Research Center.
- Dougherty, C., L. Mellor, and S. Jian. 2006. *Orange Juice or Orange Drink? Ensuring that 'Advanced Courses' Live up to Their Labels*. Austin: National Center for Educational Achievement.
- Geiser, S., and V. Santelices. 2004. *The Role of Advanced Placement and Honors Courses in College Admissions*. Berkeley: University of California, Berkeley.
- Hertberg-Davis, H., C. M. Callahan, and R. M. Kyburg. 2006. *Advanced Placement and International Baccalaureate Programs: A "Fit" for Gifted Learners? (RM06222)*. Storrs, CT: The National Research Center on the Gifted and Talented, University of Connecticut.
- Karp, M. M., J. C. Calcagno, K. L. Hughes, D. W. Jeong, and T. R. Bailey. 2007. *The Postsecondary Achievement of Participants in Dual Enrollment: An Analysis of Student Outcomes in Two States*. Saint Paul: University of Minnesota, National Research Center for Career and Technical Education.
- Klopfenstein, K., and M. K. Thomas. 2009. "The Link between Advanced Placement Experience and Early College Success." *Southern Economic Journal* 75 (3): 873-891.
- Swanson, J. *An Analysis of the Impact of High School Dual Enrollment Course Participation on Post-Secondary Academic Success, Persistence and Degree Completion*. Paper presented at the meeting of the National Association for Gifted Children in Tampa, FL, and the National Alliance of Concurrent Enrollment Partnerships in Kansas City, MO, 2008.
- Zeidenberg, M., D. Jenkins, and J. C. Calcagno. 2007. *Do Student Success Courses Actually Help Community College Students Succeed?* New York: Columbia University, Teachers College, Community College Research Center.

ENDNOTES

1. Delta-Schoolcraft, Genesee, Lapeer, and Washtenaw intermediate school districts (ISDs)
2. Collaborative Group Work, Writing to Learn, Scaffolding, Questioning, Classroom Talk, and Literacy Groups. Also see: “Helping Districts Reinvent High Schools for Postsecondary Success,” Jobs for the Future, n.d., <http://www.jff.org/services/early-college-design-services/common-instructional-framework>.
3. Articulated credit allows students to earn college credit for courses completed in high school once they have shown evidence of meeting certain criteria. Sometimes they may have to pass the next course in the sequence in order to be awarded college credit.
4. See for example: “Key Features of Our AccuPlacer Math Test Prep Courses,” MATHhelp.com, 2017, <http://www.mathhelp.com/accuplacer-math-test-prep/>.
5. In many schools, AP course grades are “weighted,” meaning that they count extra in the calculation of a student’s GPA.
6. This situation differs from that in many states where courses are more heavily subsidized by colleges, districts, or the state.
7. One well-known form is the Accelerated Learning Program developed by the Community College of Baltimore County. For more information, see: Accelerated Learning Program, n.d., <http://alp-deved.org/>.
8. See for example: “Key Features of Our AccuPlacer Math Test Prep Courses,” MATHhelp.com, 2017, <http://www.mathhelp.com/accuplacer-math-test-prep/>.
9. A situation that is changing in many states where both dual enrollment and AP courses are weighted. In addition, colleges are increasingly likely to accept dual enrollment courses in many settings.

JOBS FOR THE FUTURE

NCREST
NATIONAL CENTER FOR RESTRUCTURING
EDUCATION, SCHOOLS & TEACHING
Teachers College, Columbia University

m c n c
middle college national consortium
EXPANDING COLLEGE ACCESS

TEL 617.728.4446 FAX 617.728.4857 info@jff.org

88 Broad Street, 8th Floor, Boston, MA 02110 (HQ)
122 C Street, NW, Suite 650, Washington, DC 20001
505 14th Street, Suite 340, Oakland, CA 94612

WWW.JFF.ORG

