Address
550 West Baltimore Street
Baltimore, MD 21201

Phone
410-706-2085

Email
mlds.center@maryland.gov

Website
www.MLDSCenter.org

MLDS Center
Maryland Longitudinal Data System

December 13, 2013

The Honorable Martin O'Malley
Office of the Governor
100 State Circle
Annapolis, MD 21401

Dear Governor O'Malley,

The College and Career Readiness Act of 2013 requires the Maryland Longitudinal Data System Center to report to the Governor and the Maryland General Assembly the number of students who are dually enrolled and information about the courses in which they are enrolled.

I am pleased to be given the opportunity to provide you with this report, which is enclosed, and hope that you find it useful and informative.

I am happy to address any questions you may have and look forward to future reporting on this topic, which, as the MLDS continues to develop, will be more comprehensive.

Sincerely,

Ross Goldstein
Executive Director

Enclosure

cc: President Thomas Miller
Speaker Michael Busch
John Ratliff, Office of the Governor
MLDS Governing Board
Caroline Boice, DLS
Nathan Bowen, DBM
Sarah Albert, DLS

MLDS Center
Maryland Longitudinal Data System

A Report to the Maryland General Assembly and Governor Martin O'Malley

Regarding Dual Enrollment

December 2013

Submitted by:
Maryland Longitudinal Data System Center
Ross Goldstein, Executive Director

Written by:
Dr. Jon Enriquez, Associate Director
Reporting and Portal Services Branch

INTRODUCTION

The term "dual enrollment" has been used to apply to a number of learning experiences, most of which share the core idea that a high school student is enrolled in one or more classes on a college or university campus. These classes are used to fulfill requirements for high school graduation and can also qualify for college credit if the student enrolls in college. Dual enrollment allows students to undertake challenging learning experiences, explore subjects of interest through classes generally not available at high schools, demonstrate readiness for college study, and complete coursework that can be accepted as transfer credit towards earning a postsecondary degree.

The College and Career Readiness and College Completion Act of 2013 ("CCRCCA") established a statutory requirement that the Maryland Longitudinal Data System Center ("Center") provide an annual report to the Governor and General Assembly about the number of students who are dually enrolled in high schools and in colleges or universities (Annotated Code of Maryland, Education Article §24-703.1). At present, the Center does not receive data that allow it to present the full range of information stipulated in the statute. It is expected that these data will be available for the 2014 report. This edition of the report will discuss the data issues to be resolved in order to ensure full responsiveness by 2014, and provide the best information on dual enrollment that is currently available.

The data in this report describe dual enrollment as of Fall 2012. Therefore, the changes to dual enrollment deriving from the CCRCCA are not reflected in this information. This report is therefore best understood as describing the baseline for evaluating changes to dual enrollment programs beginning with the CCRCCA. Future editions of this report will refer to this baseline for determining the effects of the CCRCCA.

One final note: The data in this report were obtained directly from the Maryland Higher Education Commission (MHEC). The Center is grateful to MHEC for providing the data used to produce this report.

Discussion of data issues

One of the principal challenges that the Center faces in preparing this report lies in the existing use of the term "dual enrollment." That broad term contains a number of important distinctions. For example, the Maryland State Department of Education (MSDE) makes a distinction between students who are receiving high school credit for a college course and those who do not; the latter are often described as "concurrently enrolled," rather than "dually enrolled." However, the CCRCCA defines "dually enrolled" students as those who are enrolled at both a secondary school and an institution of higher education in Maryland, regardless of whether they are earning high school credit. For its part, MHEC asks colleges and universities to identify students as dually enrolled if they are enrolled at any time prior to graduation from high school, a definition which also does not turn on the earning of high school credit. Similarly, neither the CCRCCA definition nor the MHEC definition excludes private and homeschool students, whereas MSDE naturally emphasizes those students enrolled at public high schools.

Because it receives data from multiple sources, and because it is required to complete annual editions of this report, the Center is well positioned to examine these issues in conjunction with MSDE, MHEC, the Maryland Association of Community Colleges, and other stakeholders. The Center is mindful of its obligation to provide information on the Early College Access Grant program and its effects on dual enrollment. Nevertheless, examinations of other subpopulations will provide useful information on the role that dual enrollment, broadly defined, plays in preparing Maryland high school students for college.

The statute governing this report requires that the report contain the number of students who are dually enrolled as defined in the legislation, along with the number and title of the courses taken by these students, and that this information must be disaggregated by local school system (Md. Ed. Art. §24-703.1). In order to satisfy this requirement, the Center must receive the following information from MSDE and MHEC:

(a) An enrollment record from the college identifying the student as a dually enrolled student (MHEC);
(b) An enrollment record from the high school identifying the student as enrolled (MSDE);
(c) A registration record from the high school identifying the student as dually enrolled and receiving credit toward high school graduation requirements for the college course (MSDE);
(d) A course record from the college specifying the title and number of the course in which the student is enrolled (MHEC).

At this writing, only (a) and (b) are being collected by the respective agencies. Any student who is enrolling in college coursework before completing high school is identified in the MHEC data. This includes students attending private high schools, homeschooled students, and other students under special arrangements and programs. High schools do not report dually enrolled students to MSDE at the student level, so (c) is not available, and at this time the Center is not aware that MSDE plans to collect this information. That is why (b) will be used by the Center in future years to ensure that students identified in (a) are enrolled at a public high school. Finally, MHEC is about to begin collection of student-level course records starting with students enrolled during Fall 2013. These records will provide the information in (d), and are expected to be available in time for the 2014 edition of this report. These data will assist in understanding the types of courses taken by dually-enrolled students.

ANALYSIS

In Fall 2012, 5,534 students were identified by the colleges and universities they attended as dually enrolled. 5,428 of these students (98.1%) attended community colleges, 69 (1.2%) attended public four-year colleges and universities, and 37 (0.7%) attended independent colleges and universities. Because almost all dual enrollment occurs at community colleges, the report will use the universe of community college students as a basis for comparison when needed. The number and percentage of students dually enrolled at public and independent four-year

institutions is so small that meaningful comparisons cannot be made with these broader populations.

The report will also use the population of Maryland public high schools for certain comparisons with the dually enrolled population, despite the fact that this comparison is much more problematic. The present data do not differentiate between students enrolled in Maryland public high schools and students enrolled in other kinds of high schools (such as homeschools, private schools, or out-of-state schools). There is reason to believe that a significant number of students classified by colleges as dual enrollees are not enrolled at public high schools; some estimates by the Maryland State Department of Education put the number of dual enrollees at about 3,800, which implies that almost one-third of dual enrollees derive from other sources. Nevertheless, comparisons of this kind can be helpful in identifying some patterns of dual enrollment and suggesting directions for further study and practice.

Headcount enrollment

The dually enrolled population is a very small fraction of college enrollment as well as high school enrollment. The 5,534 dually enrolled students represented 3.7% of all students enrolled in community colleges, and less than 0.1% of all students enrolled in public four-year colleges and universities and independent colleges and universities. The dually enrolled population is equivalent to 2.2% of the total population of students in grades 9-12 in public high schools, and 9.2% of the total population of students in grade 12 alone. By comparison, data from the National Student Clearinghouse indicate that approximately 65% of high school completers enroll in some college within 16 months of graduation.

Credit hour enrollment

The 5,534 dually enrolled students registered for 24,289 credit hours, for an average of 4.4 credit hours per student. Since most college courses earn 3 credit hours, the total volume of dual enrollment can be considered equivalent to approximately 8,100 college courses. By comparison, Maryland public high school students completed more than 104,000 Advanced Placement (AP) exams. A successful score on an AP exam can usually earn a student 3 transfer credit hours at many colleges and universities, so each of these exams can be considered equivalent to a single college course, and are an an important element of early-college strategies. We can therefore estimate that high school students were at least 13 times more likely to take an AP exam than take a dual enrollment course. Thus, again, dual enrollment has made up a relatively small component of the early-college strategies of public high school students.

Table 1 shows the pattern of credit hours taken by dually enrolled students, both statewide and by institution. More than five out of six students enrolled in one or two classes (1-6 credit hours), but a small group were effectively enrolled full-time at the college level (12 credit hours or more).

TABLE 1. CREDIT HOURS ATTEMPTED, PERCENTAGE OF DUALLY ENROLLED STUDENTS, BY INSTITUTION OF HIGHER EDUCATION, FALL 2012.

	Number of Credit Hours Attempted			
Institution	1-3	4-6	7-11	12 and up
Allegany College of Maryland	76.7%	17.6%	5.3%	0.3%
Anne Arundel Community College	60.2%	26.4%	11.0%	2.5%
Baltimore City Community College	73.9%	21.6%	2.3%	2.3%
Carroll Community College	35.2%	32.4%	31.7%	0.7%
Cecil College	62.6%	23.9%	12.9%	0.7%
Chesapeake College	55.4%	32.8%	9.0%	2.8%
College of Southern Maryland	57.6%	19.5%	11.0%	11.9%
Community College of Baltimore County	49.0%	36.8%	11.8%	2.4%
Frederick Community College	53.4%	23.5%	16.7%	6.5%
Garrett College	30.0%	50.0%	15.0%	5.0%
Hagerstown Community College	51.5%	39.8%	6.8%	2.0%
Harford Community College	72.6%	14.1%	8.4%	4.9%
Howard Community College	53.0%	33.9%	11.3%	1.7%
Montgomery College	68.3%	24.4%	6.6%	0.7%
Prince George's Community College	48.8%	43.9%	4.9%	2.5%
Wor-Wic Community College	57.0%	29.6%	12.0%	1.4%
All Other Colleges and Universities	*47.2%*	*42.5%*	*8.5%*	*1.9%*
TOTAL (PERCENTAGE)	**59.0%**	**28.6%**	**9.8%**	**2.7%**
TOTAL (NUMBER)	**3,263**	**1,581**	**541**	**149**

In general, most community colleges follow the statewide pattern, although it is notable that Carroll Community College has a relatively large group of students enrolling in 7 to 11 credit hours, and College of Southern Maryland enrolls a relatively large number on a full-time basis. In the future, additional data will be explored to understand the local conditions and institutional practices that contribute to these unusual patterns, as well as the high school circumstances of these students.

Age

Dual enrollment is primarily intended as an opportunity for high school students who are ready to undertake college-level coursework. Although the available data do not indicate the grade level of the dually enrolled student, the data do identify the students' birth year, which can provide a rough approximation of grade level. 69.2% of dually enrolled students were born in 1995, 17 years prior to the date of enrollment; an additional 11.3% were born in 1994, 18 years prior, and 12.6% were born in 1996, 16 years prior. This distribution, with 93.1% of students in the 16-18 age range, is consistent with what can be expected for high school students in upper grades. This birth year pattern is consistent in the data for most community colleges. An interesting exception, however, occurs at Prince George's Community College, where only 43.9% of dually enrolled students are in the 16-18 age range. An additional 49.9% of PGCC's

dually enrolled students were born in 1997 and 1998, or age 14 and 15 at the time of enrollment. In the future, detailed data will allow further analysis of this pattern.

Gender

Among dually enrolled students, 39.5% are male, while 60.4% are female. This ratio more closely resembles the gender mix of community college students (42.5% male, 57.5% female) than that of public high school students (50.9% male, 49.1% female). Dually enrolled students are thus more likely to resemble the college-going population than the high school population. There are no significant variations to this general pattern among different community colleges.

Race and ethnicity

The racial and ethnic composition of the community college student body is similar to that of the high school student body, as shown in Table 2 below. Students who are white, American Indian or Alaska Native, and Native Hawaiian or Pacific Islander are somewhat overrepresented in the community college population, while African Americans, Hispanics, and Asians are somewhat underrepresented. In Fall 2012, however, dually enrolled students were overwhelmingly white, as indicated in Table 2 below.

TABLE 2. RACE AND ETHNICITY OF THREE STUDENT POPULATIONS: PUBLIC HIGH SCHOOLS, COMMUNITY COLLEGES, AND DUALLY ENROLLED STUDENTS.

Race or Ethnicity	Public High School Population	Community College Population	Dual Enrollment Population
White	43.8%	48.0%	70.2%
African American	36.1%	30.4%	12.2%
Hispanic, any race	10.6%	7.6%	5.4%
Asian	5.9%	5.2%	3.6%
Two or more races	3.0%	2.4%	3.0%
American Indian/Alaska Native, Native Hawaiian/ Pacific Islander	0.4%	0.6%	0.7%
Unknown	0	2.1%	3.5%
Non-resident alien	0	3.7%	1.4%

The number of white students is about three times as large as expected for a group of this size. The overrepresentation of white students among the dually enrolled population is so strong that it is extremely unlikely to be accidental. In addition, there is some indication that African American students are slightly underrepresented compared to other groups even after controlling for the number of white students. However, from the currently available data, there are no readily apparent explanations for this disparity. Naturally, the inclusion of additional data in the future will help to provide more information for this phenomenon. It may be, for example, that dual enrollees from the homeschool and private school sectors skew the data, or that white students are especially likely to prefer this particular type of early-college experience while being underrepresented in others. By comparison, of the 108,038 Advanced Placement exams

taken by Maryland public high school students in 2012-2013, 48.3% were taken by students identifying as white. It will be useful to compare the full range of early-college experiences as more data become available. Another possibility is that students of certain races and ethnicities encounter barriers to access such as geography, transportation, and finance. In Fall 2012, dually enrolled students were self-funded, although in many jurisdictions dually enrolled students paid a reduced tuition rate. The CCRCCA requires that local school boards provide funding for public high school students participating in dual enrollment, but also allows school boards to require partial reimbursement from some individuals. It may be that this shift in funding practices will foster the participation of a more diverse dual enrollment population. In the meantime, high schools, LEAs, and community colleges should work to ensure that information about dual enrollment opportunities is distributed to students of all races and ethnicities, and that any potential barriers to enrollment are reduced or removed.

Geographic origin

Although colleges and universities do not identify the high school or local educational authority where the students were enrolled, they do provide information on the students' "geographic origin." Typically, this variable identifies the student's permanent residence. As such, it does not indicate the high school or LEA in which the student is enrolled at the secondary level, or even whether the student is enrolled in a public high school at all. Nevertheless, the geographic data reveal some interesting patterns in dual enrollment.

As expected, most dually enrolled students have their geographic origins in the counties that comprise the service areas of the community college at which they are enrolled. For example, about 94% of dually enrolled students at Howard Community College are from Howard County, and over 99% of dually enrolled students at the College of Southern Maryland are from Calvert, Charles, or St. Mary's Counties. Table 3 shows the percentage of dually enrolled students by college with respect to service area.

TABLE 3. DUALLY ENROLLED STUDENTS, PERCENTAGE ENROLLMENT BY GEOGRAPHIC ORIGIN.

	Percentage of Students From			
Institution	Service Area	All Other Maryland Localities	Pennsylvania	All Other States and Nations
Allegany College of Maryland	15.1%	0.5%	84.1%	0.3%
Anne Arundel Community College	81.5%	18.2%	0.0%	0.2%
Baltimore City Community College	75.0%	25.0%	0.0%	0.0%
Carroll Community College	93.0%	6.3%	0.7%	0.0%
Cecil College	100.0%	0.0%	0.0%	0.0%
Chesapeake College	98.9%	0.0%	0.0%	1.1%
College of Southern Maryland	99.6%	0.4%	0.0%	0.0%
Community College of Baltimore County	89.6%	10.2%	0.0%	0.3%
Frederick Community College	97.5%	2.5%	0.0%	0.0%
Garrett College	100.0%	0.0%	0.0%	0.0%
Hagerstown Community College	84.3%	1.7%	13.0%	1.0%
Harford Community College	97.8%	1.7%	0.0%	0.5%

Howard Community College	93.9%	6.1%	0.0%	0.0%
Montgomery College	98.0%	0.7%	0.0%	1.3%
Prince George's Community College	99.7%	0.3%	0.0%	0.0%
Wor-Wic Community College	97.2%	0.0%	0.0%	2.8%
All Other Colleges and Universities	n/a	100%	0.0%	0.0%
TOTAL	**81.9%**	**7.3%**	**10.4%**	**0.5%**

Baltimore City and Baltimore County are the two Maryland localities most likely to send dual-enrolled students to colleges located outside their own service area. This is probably due to the fact that these areas are physically close to a number of other community colleges. Similarly, Baltimore City Community College and the Community College of Baltimore County are the second and third largest importers of dually enrolled students, behind Anne Arundel Community College, which has several widely dispersed instructional locations that are convenient for students in other counties.

Two community colleges differ substantially from this pattern because they enroll a significant number of dually enrolled students from Pennsylvania, as indicated in Table 3. Allegany College of Maryland enrolls 506 Pennsylvanians, or 84.1% of its dually enrolled students, and Hagerstown Community College enrolls 67 Pennsylvanians, 13.0% of its dually enrolled population. If Pennsylvania were a Maryland county, it would be the third largest producer of dually enrolled students, behind Baltimore County (821) and Anne Arundel County (664) and just ahead of Montgomery County (549).

One effect of this Pennsylvanian presence is that Allegany and Hagerstown are the two community colleges at which dually enrolled students make up the largest share. Table 4 shows dually enrolled students at each community college, both as a headcount number and as a percentage of the student population of each community college, sorted by the percentage column. Without Pennsylvanians, Hagerstown would still have the highest percentage of dually enrolled students at 9.0%, while Allegany's percentage would be 2.6%.

TABLE 4. HEADCOUNT ENROLLMENT, ALL STUDENTS AND DUALLY ENROLLED STUDENTS, COMMUNITY COLLEGES.

Community College	Number of Students	Number of Dually Enrolled Students	Percentage of Students who are Dually Enrolled
Allegany College of Maryland	3,631	602	16.5%
Hagerstown Community College	4,965	515	10.4%
Chesapeake College	2,645	177	6.7%
Cecil College	2,698	155	5.7%
Harford Community College	7,153	405	5.7%
Frederick Community College	6,104	324	5.3%
Anne Arundel Community College	17,512	812	4.6%
Wor-Wic Community College	3,709	142	3.8%
Carroll Community College	4,067	142	3.5%

Community College of Baltimore County	24,915	778	3.1%
Prince George's Community College	13,729	367	2.7%
College of Southern Maryland	9,147	236	2.6%
Garrett College	864	20	2.3%
Montgomery College	27,218	550	2.0%
Baltimore City Community College	5,395	88	1.6%
Howard Community College	10,038	115	1.1%

SUMMARY OF FINDINGS AND DISCUSSION OF FUTURE STUDY

The data in this report presents a baseline of information about dual enrollment.

- In the Fall 2012 semester, 5,534 students took college coursework through dual enrollment programs.
- 98.1% of those students enrolled at community colleges.
- Most dually enrolled students registered for one to two classes.
- 93.1% of dually enrolled students were aged 16 to 18, consistent with the age of high school students in upper grades.
- Female students outnumbered male students 3 to 2, a ratio closer to that of the community college population than that of the high school population.
- White students are substantially overrepresented among dually enrolled students.
- Community colleges tend to enroll dually enrolled students from their own counties. Pennsylvania contributes a large number of dually enrolled students to Allegany College of Maryland and Hagerstown Community College.

The inclusion of additional data in future editions of the report will allow discussion of a number of additional questions, chief among which will be these.

- How many dually enrolled students attend Maryland public high schools, and how many attend other schools such as homeschools and private high schools?
- For what kinds of courses are dually enrolled students registering? Are they taking advanced courses in areas offered at their high schools, such as non-English languages and organic chemistry, or are they taking subjects not available at their high schools, such as psychology and philosophy? Are they concentrating in core academic areas such as science and literature; or are they exploring complementary areas such as dance, agriculture, photography, and computer science; or are they studying technical and career-oriented courses in subjects such as emergency medical services and hotel and restaurant management?
- Do the different types of dual-enrollment experiences have different effects?
- What factors explain the demographics of the dual enrollment population?
- How does dual enrollment compare to other early-college experiences such as Advanced Placement or International Baccalaureate?
- What special initiatives by individual schools, LEAs, community colleges, or localities are used to change the demographic, curricular, and other patterns of dual enrollment?

What are the effects of these programs? Can successful initiatives be scaled up or adapted by other locations in order to increase participation, course completion, or postsecondary degree completion?

- To what extent does dual enrollment improve college readiness and college-going opportunity and equity, and to what extent does it simply improve the experience of students who are already college-bound?
- To what extent does dual enrollment enhance the achievement of desirable postsecondary outcomes such as graduation and time-to-degree?
- What effects will the changes enacted in the CCRCCA have on the students who undertake dual enrollment and on the courses that they take?

These future studies will greatly expand our understanding of this important early-college program.