As the Maryland Equity Project enters its second year, we are taking this opportunity to update our supporters on our first year accomplishments. This Policy Report—the first of two—summarizes our work on higher education. A second Policy Report to follow summarizes our work on pre-K to 12 education.

The Maryland Equity Project was launched because we saw a need for an independent, non-partisan research and policy center focused on education in the state of Maryland. We also wanted to broaden the debate around educational issues to include the related social and economic challenges that impact education in Maryland. Our mission—to improve...
As shown in Figure 1 below, though initial differences between racial groups in terms of their aspiration to a four-year college degree are quite small, as students get closer to college enrollment, gaps in step completion between racial groups grow.

Each step represents a point at which a student might fall off the path to college enrollment. However, it is not the completion of individual steps, but rather the completion of multiple steps that lead to college enrollment. Of the nine steps studied by Klasik, five steps stood out as particularly important in determining whether students enrolled in college: they aspired to a college degree in tenth grade, maintained those aspirations into twelfth grade, attained minimal academic qualifications for college (through coursework and grades), took the SAT or ACT, and completed a college application. In short, a student’s decision whether to complete each of these steps is tantamount to deciding whether to enroll in college at all.

The completion of individual steps appears to generate momentum toward college enrollment are not equally predictive of later step completion for all students. In general, higher achieving students are more likely to complete all of the steps to college. But even if we take into account achievement differences between White and minority students, minority students are less likely than White students to complete certain steps later in the process even if they have completed earlier ones.

Given the evidence of differential completion, one logical response is to ask whether there is evidence of differential information about the process. If students do not know what steps they need to complete in order to successfully enroll in college, or if they do not know how or when to complete these steps, then their chances of successfully enrolling in college are low. Even small pieces of information that help students determine where they might be appropriate candidates for admission can dramatically affect students college enrollment behavior (Hoxby & Turner 2013).

The students who make it through all of the steps to college enrollment, including earning admission to a four-year college, must still find a way to pay for their college education. However, because of how complex and opaque the financial aid process is, it is entirely possible for students to navigate successfully nearly all of the steps to college enrollment, but still not secure the funds that would allow them to afford to pay for college.

Thinking about college enrollment as being composed of multiple discrete steps is relatively new and so state responses to these steps are necessarily new as well. Below are some policies states have tried, but not all of the policies discussed below have been in place for long periods of time, which means the ability to evaluate their effectiveness is limited.

**Financial Aid**
Many states have implemented statewide merit aid policies. There programs give public funding to students who meet certain academic qualifications and agree to attend college in state. Georgia, California, and Washington, DC have some of the most notable, and well
researched of these policies. All have helped students enroll in college at higher rates. Although these programs address one of the more pressing obstacles in the college enrollment process, financial aid helps students once they are very far along the path to college. In other words, financial aid is there to help the students who were already well equipped to successfully navigate the entire college application process.

Opportunities to Learn

Academic preparation, measured as early as ninth grade, is key for explaining many of the differences in step completion across racial and income groups. Thus, gaps in step completion between students from different racial and income groups may indicate that lower-income and minority students have fewer opportunities to learn than their wealthier and non-minority peers. For this reason, the improvement of educational opportunities for these students even before they arrive in high school would likely go a long way towards increasing their odds of progressing successfully to college enrollment.

Information

Some states provide resources for students to obtain the information they need about the college application process. In most cases, such information is delivered through websites that walk students through the college application process and sometimes also provide information about applying for financial aid. There is no systematic evidence on the effectiveness of such websites. Another approach might be for states to provide systematic college guidance to students in the model of Hoxby and Turner (2013). Under this model, depending on students’ test scores or grades, states send students information about colleges for which they are good candidates for admission.

Taking the SAT or ACT

SAT or ACT scores are required or recommended for applicants to most four-year colleges and are often used for placement purposes at many two-year colleges. States like Colorado, Illinois, Maine, Michigan, Kentucky, Idaho, and Wyoming all require that juniors in high school take either the SAT or the ACT in order to help students avoid the pitfall of not having SAT or ACT scores when applying to college. The results of these programs have varied from state to state. Illinois had the most notable results. Since the Illinois ACT requirement has been in place, the state has seen increases in four-year college enrollment, as well as modest drops in two-year college enrollment. Illinois, however, did not see any detectable difference in overall college enrollment rate.

Application Submission

Often, completing and submitting college applications can be a barrier to college enrollment. Multiplied across applications to numerous colleges, this process can be quite demanding of students’ time and resources, and can sometimes dissuade students who are uncertain about attending a four-year college from applying at all. One solution is to make the work students put into completing applications more efficient. For example, students applying to the University of California or University of Texas systems only have to fill out one application which can then be sent to as many colleges within that system as the student wants. Additionally, most State University of New York campuses accept what is known as the Common Application—a single application form that can be used to apply to multiple colleges. Students who use the Common Application generally apply to more colleges than students who do not, and the more colleges students apply to, the more likely students are to enroll in a four-year college.

Completing Financial Aid Applications

Even students who make it as far as applying to college are often stymied by the detail and complexity of the Free Application for Federal Student Aid (FAFSA). Although states are not in a position to change the format of the FAFSA, they can provide assistance to families on completing the FAFSA. Students that receive help completing the FAFSA form and who are given additional information about financial aid options are substantially more likely than students who do not receive this assistance both to apply successfully for financial aid, and to enroll in college the following fall.

Conclusion

The issue of college enrollment is a multi-dimensional problem. The decision to enroll in college is not something that happens once—students essentially re-make the decision to stay on the path to college as they decide whether or not to complete certain steps to enrollment. Because there are so many of these decision points it means that there are many potential avenues that policy makers might take in achieving the goal of college enrollment for students from all backgrounds. While there are no silver bullets to removing obstacles to college enrollment, and approaches that have directly tackled specific steps to college enrollment are relatively new, the research reviewed in this brief lays out several options states might pursue. ✉

To read the full report, go to: http://www.education.umd.edu/TLPL/centers/MEP/Research/College/
Over the past thirty years the cost of higher education has risen dramatically, generating attention from scholars, policymakers, and a concerned public. The debate about higher education costs has focused, in particular, on rising college tuition. Nationwide, in the 2011–12 school year the average college tuition for an in-state, four-year public college was $8,244 compared to $2,242 (in 2011 dollars) thirty years earlier (Ma & Baum, 2012). It has become more difficult for students from low- and middle-income families to afford college. Also, sources of financial aid are increasingly less likely to cover costs associated with college attendance. In turn, students either take out loans to pay for the remaining balance, or are discouraged from enrolling at all if they are debt averse.

Two of the main driving forces behind rapidly rising tuition are decreasing state appropriations for higher education and growing expectations for the number and type services and amenities universities provide for students. As state appropriations decrease, colleges must rely more heavily on their endowments and other sources of revenue to cover their costs. The operational costs of providing a college education have increased at many colleges independent of this decrease in appropriations. In addition to increasing budgets to accommodate growing enrollment, many universities with a desire to stay competitive and attract students have put money into services such as renovated residential housing, athletic departments, and the hiring of non-faculty positions. These dual trends are illustrated in the table below.

Maryland’s state appropriations for higher education now cover less than 30% of expenditures in the Maryland college system, but in the late 1980s, they covered over 40%. This decreasing share of public university expenditures covered by state appropriations is not a trend limited to Maryland. On average, all states have seen a similar decrease, although Maryland has always covered a lower percentage of expenditures than the national average.

The goal of this brief is to discuss the potential of three pieces of legislation, proposed during the 2014 session of Maryland General Assembly, to help ease the cost concerns students have that may be the result of these trends in appropriations and expenditures.

**Pay It Forward**

One proposed solution to rising tuition and fees has been to eliminate them altogether. This elimination is the main idea behind Maryland’s proposed “Pay It Forward” model of revenue generation. The general principle behind such a plan is that students do not pay tuition and fees while they are in college. Rather, a student pays a certain percentage of his or her income back to the college for a fixed number of years after the student has stopped taking classes. Individuals pay what they can afford given their career success after leaving college.
Yet no pay-it-forward plan has ever been successfully implemented in the US so there is virtually no research base on which to rely in terms of understanding the effects of these plans. As a result, we do not have answers to several critiques of the policy. There are several critiques worth taking seriously.

First, since payments are based on income, there is a strong incentive for students with high earnings expectations to avoid pay-it-forward tuition plans. One solution for this concern, as proposed by economist Susan Dynarski, is to cap the total amount of money students would be expected to contribute to the payment plan.

A second concern is the financial and administrative costs associated with implementing and maintaining a pay-it-forward system. The state will have to find the funds to support the education of students between the end of the current tuition regime and when a steady stream of graduates of the new plan begin to make significant financial contributions to the system. It is also unclear if the funds the plan generates will be enough to meet future costs of delivering a college education. Further, Maryland would need a mechanism to track and verify the income of all of its graduates.

Finally, most pay-it-forward proposals seem to apply only to college tuition and fees. At the University of Maryland, however, tuition and fees cover less than half of the total cost of college attendance for Maryland students. Thus, while a pay-it-forward plan reduces the need for students to take out loans to pay tuition and fees, students still must find a way to pay these other costs.

**Information for High-Achieving, Low-Income Students**

A third piece of legislation proposed in Maryland aims to help high-achieving low income students make smarter decisions about college attendance. This policy is based on the observation that these students tend to “under-match” when enrolling in college. This under-match is attributed to a lack of reliable information about college costs and the application process. Under the proposed bill, eligible students—high-achieving 12th graders attending high school within the state who also qualify for the Guaranteed Access Grant—would be provided semi-customized information about their college options, the applications process, and application fee waivers.

This intervention is well supported by research evidence. Two economists conducted a randomized controlled trial in which students were given these exact interventions. Students who received the information submitted 19% more applications overall. These students were also more likely to be admitted to “peer” colleges—ones that match the students qualifications—and nearly 20% more likely to enroll in these colleges.

**Conclusion**

Each of the three higher education policies proposed in the 2014 Maryland General Assembly session promised to help lower- and middle-income students successfully into and through college and ease affordability concerns. However, with the exception of the assistance provided to high-achieving, low-income students, most of this promise is largely theoretical. None of the policies address the underlying problems that are implicated in the fact that the cost of college attendance is rising so dramatically.

If the pressure to raise tuition and fees is to be relieved, the state must put serious thought into the amount of...
Many students, particularly those that are minority or low-income, enter postsecondary education underprepared to complete entry-level college courses. To address this preparation gap, many colleges offer remedial courses in math, English, and writing that underprepared students are encouraged or required to take before enrolling in college-level courses. The courses impose significant costs on both students and states because students pay tuition for remedial courses as if they were college-level and may use (public) financial aid to cover the costs, but students do not receive college credit for the course and so do not make progress to a college degree.

This brief describes one set of efforts by Maryland higher education leaders to use course redesign to smooth students' passage through remedial courses so that they can successfully transition into credit-bearing courses.

Remedial Course Burdens
It can be costly and time consuming for students to complete remedial coursework. In 2007-08, students spent approximately $3.6 billion on remedial education. Moreover, less than half of students enrolled in remedial courses complete all of the recommended remedial sequence and less than a quarter of students requiring remediation at community college earn a certificate or degree within eight years. Maryland students requiring remediation take an average of 4 months longer to graduate at public two-institutions and 8.4 months longer at public four-year institutions.

Remedial coursework also places a double burden on taxpayers—once when students are taught material in high school, and again when they are taught similar material in college—and creates inefficiencies in the use of time and state resources. States also lose tax revenue from individuals whose degree receipt and entry into the workforce is delayed by remedial coursework.

Who Needs Remediation?
Students enrolling in two-year institutions are more likely to need remediation than students enrolling in four-year institutions. Public institutions enroll more students who require remediation than private institutions, and two-year public institutions enroll more than four-year public institutions.

Minority students—particularly Black and Hispanic students—are more likely to require remediation than White students. Throughout the 2000's, Black and Hispanic students were enrolled in remedial courses at much higher rates than White students. For example, in 2007-08, 19.9% of White students compared to 30.2% of Black and 29.0% of Hispanic students reported taking remedial courses.

Similar patterns of preparation gaps are apparent in remedial enrollment rates by socioeconomic status (SES). Economically disadvantaged college students are more likely to need remedial education than students who come from more advantaged families; approximately 63% of students from the bottom income quintile enroll whereas only 25% of students from the top quintile enroll.

Remediation in Maryland
Inequity in college preparation is also apparent in Maryland. Roughly 58% of students at Maryland's community colleges and 24% of students at Maryland's four-year institutions enrolled in at least one remediation course in 2007. Also, three of Maryland's four Historically Black Institutions have a higher percentage (over 60%) of students requiring remediation.

To read the full policy brief, go to: http://www.education.umd.edu/TLPL/centers/MEP/Research/College/
of students requiring remediation than other four-year institutions in the state

Of the 24% of students at a four-year Maryland public institution that enrolled in at least one remedial course in fall 2007, 70% completed it. At Maryland community colleges, 40% of the 58% of students that enrolled in at least one remedial course in fall 2007 completed it. Of the 70% who completed at least one remedial course from a four-year public institution in Maryland, about 40% went on to complete a college-level credit-bearing course. Of the 40% who completed at least one remedial course from a Maryland community college, only 25% went on to complete a college-level credit-bearing course.

Course Redesign in Maryland
Course redesign is one strategy that Maryland higher education leaders have adopted in recent years to increase college attainment and reduce costs to students and the state. Remedial course redesign shortens the remedial course-taking sequence by moving from a traditional remedial course delivery sequence to a modular delivery system where a remedial course is taken at the same time as a college-level credit-bearing course and the remedial material is individualized to the student's skill level. The case studies described below highlight academic and structural changes that occurred as a result of course redesign in Maryland.

Towson University: Towson University faculty collaborated to redesign courses in remedial math and intermediate algebra that enrolled students with low SAT and weak placement test scores. The courses posed numerous challenges for faculty, including how to direct course material toward the diverse skill levels students brought to the classes, and the need for individualized attention for students who did not move through the subject matter at the same pace as other students. Under the guidance from Faculty Fellows, faculty replaced one hour of lecture in each of the two classes with at least one mandated hour in an open computer lab that used interactive learning software with tutorials and thousands of practice problems. Results included: a) shorter time to course and degree completion; b) higher pass rates in both remedial math and intermediate algebra; c) approximately $27,000 in institutional cost savings per year, per course.

Howard Community College: Howard Community College redesigned two of its developmental math courses—basic algebra and geometry and elementary algebra. The redesign course combined the two original courses into one six-credit course with six modules. Students could choose which class meetings they needed to supplement their computer-based instruction. With approximately 42% of first year students placing into these two courses, the redesigned course affected a large proportion of students.

This course redesign was associated with an increase in the course completion percentage of remedial students. Additionally, the modular redesign allowed students to repeat only the material they do not master—they did not have to repeat an entire four-credit course because they failed one exam.

Conclusion and Recommendations for Policy
The redesign of remedial courses has proven to be an effective strategy in Maryland—in both two- and four-year colleges and universities—in helping students move toward successful degree completion. While it is a strategy that should be continued, the recommendations provided below have the ability to create change and promote equity.

1. Provide more resources to postsecondary institutions to redesign remedial courses.
2. Scale and spread course redesign to high school courses that have low levels of student learning and poor student performance in subsequent courses.
3. Research how to address the learning needs of high school students who are assessed as not being college ready.
4. Offer transition/preparation courses for adults trying to re-enter postsecondary education after a spell of non-enrollment.
5. Encourage and fund more professional development activities between college faculty and high school teachers.
6. Encourage and fund more professional development activities between secondary school and elementary teachers.
7. Ensure that elementary and secondary school districts have a curriculum that is rigorous and college and/or career preparatory in nature.
8. Change the promotion and tenure reward structure of postsecondary institutions so faculty are rewarded for creating the kinds of experiences that matter to student success and they have safe spaces for experimenting with innovative instructional practices.

To read the full report, go to: http://www.education.umd.edu/TLPL/centers/MEP/Research/College/
public education through research that supports an informed public policy debate on the quality and distribution of educational opportunities in Maryland—guides our work.

Work began on the Maryland Equity Project in the summer of 2013. The two principle organizers—Robert Croninger and myself—met with stakeholders from across the state to gauge interest in MEP and to identify education priorities in Maryland. We launched the project in November with a panel discussion focused on research conducted by Daniel Klasik on the steps to college enrollment. That policy brief is summarized in this Policy Report.

We look forward to continued dialogue with educators and policymakers from across the state. Please send us your comments at mdequity@umd.edu and let us know what you think needs to be done to improve equity and opportunity for Maryland students.

Finally, please join us on November 20, 2014 for a one-day institute focusing on school-community partnerships. Details are on our website: www.mdequity.org.

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About Us: The Maryland Equity Project seeks to improve education through research that supports an informed public policy debate on the quality and distribution of educational opportunities in Maryland. The Maryland Equity Project is a program in the Department of Teaching and Learning, Policy and Leadership, College of Education at the University of Maryland, College Park, MD. Visit us at mdequity.org or follow us on Twitter @mdequity.