Ohio | Board of Regents
University System of Ohio

John R. Kasich, Governor
John Carey, Chancellor

Memorandum

To: Honorable John Kasich, Governor
Honorable Keith Faber, President, Senate
Honorable William G. Batchelder, Speaker, House of Representatives

From: John Carey, Chancellor

Date: December 31, 2014

Subject: State Share of Instruction Report

Background
The 2014 Mid-Biennium Review legislation for higher education – House Bill 484 - advanced revisions to Ohio's State Share of Instruction (SSI) formulas for the state's universities and community colleges.

This same legislation directed the Chancellor of the Ohio Board of Regents to evaluate the performance-based funding policies and practices used to allocate the SSI to institutions. The legislation requested review and recommendations on the student factors and weights used to incent the success of certain underrepresented students, including potential inclusion and weighting for veterans and first-generation college students. In addition, the legislation asked for a comparison of each institution's graduation rate compared to the institution's expected graduation rate.

> ***SECTION 7.*** *The Chancellor of the Ohio Board of Regents shall evaluate performance-based funding practices and policies at all state institutions of higher education, as defined in section 3345.011 of the Revised Code. The Chancellor also shall make recommendations regarding funding weights and factors, which shall include, but not be limited to, potential funding weights and factors for veterans and individuals who are first-generation college students. The report also shall include each state institution's graduation rate compared to the institution's expected graduation rate. The Chancellor shall submit a report of the Chancellor's findings to the Governor and the General Assembly, in accordance with section 101.68 of the Revised Code, not later than December 31, 2014.*

This report responds to the legislative request with an overview of each sector's funding formula development process and the consideration of student factors and weights. Expected versus actual graduation rates are also reviewed.

25 South Front Street
Columbus, Ohio 43215

phone 614.466.6000
fax 614.466.5866
web **www.OhioHigherEd.org**

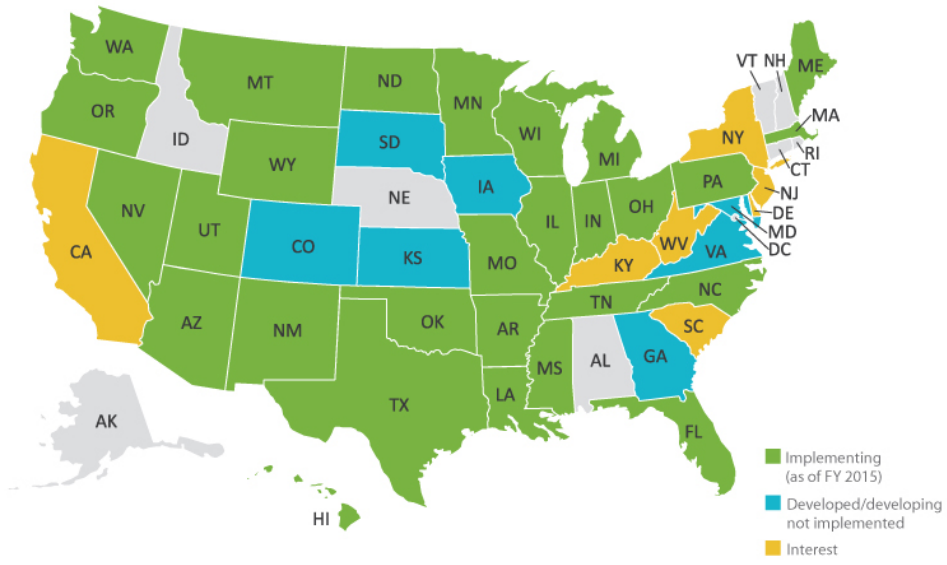
Ohio in National Context

Performance-based funding models have been implemented in various forms for many years. Similar to Ohio's various Challenge programs of the 1990's and early 2000's, many early performance-funding models were add-ons or bonuses to base institutional allocations.

Many of the state models in place today, however, seek to more directly align the state's investment in higher education, particularly state direct support to institutions, with the state's higher education policy priorities and objectives – such as increased attainment, completion and economic development/workforce needs. These models therefore are often part of the base allocation for institutions, not a separate bonus allocation outside the general appropriation to institutions.

According to work done by HCM Strategists, LLC, approximately thirty-five states have developed (13 states) and/or implemented (22 states) performance-based funding policies as of fiscal year 2015. These state models vary on several details including amount of funding associated with outcomes, the metrics used, and the sectors involved.

Figure 1: Snapshot of State Outcomes-Based Funding Policies (as of July 2014)



Ohio is considered a leading state in current outcome-based funding models as the state-level policy includes all public institutions and allocates a significant portion of dollars based on identified performance metrics. Only Tennessee allocates more to institutions based on outcomes on a per FTE-basis than Ohio[1]. This difference is a result of higher numbers of FTE in Ohio compared to Tennessee and a comparative lower allocation. It is not a result of the formula design or percentage of dollars allocated based on outcomes.

[1] In FY 2015 Tennessee allocated $4,870 per FTE based on outcomes and Ohio allocated $4,495. A chart with all state outcomes-based allocation amounts can be found here: http://strategylabs.luminafoundation.org/wp-content/uploads/2013/03/OBF-Table_Notes.pdf

There have been many studies regarding the development, implementation, and revision of outcomes-based funding policies for higher education. These analyses shed light on some of the major concerns, policy and political implications and successes of outcomes-based funding formulas, which have guided the advancement and refinement of more recent funding models, such as Ohio's.

Ohio's outcomes-based funding policies align to many of the commonly accepted, research-informed, best practices for designing and implementing outcome-based finance policies. These best practices include:

- *Engage institutions*: Providing opportunity for institutions to inform the funding policy can help with mission alignment, understanding and ultimately sustainability. Ohio's funding policies and the technical details of the formulas were informed by extensive and ongoing input from institutions. The Higher Education Funding Commission's recommendations included representation from both sectors and each sectors technical development processes had broad involvement from chief financial officers, institution research professionals, and academic provosts among others.

- *Use a limited set of consistently defined metrics*: Ohio's funding models for both universities and community colleges are built on a limited set of measures that have consistent definitions across institutions.

- *Differentiation across institution sectors/missions*: Ohio's separate formulas as well as the metrics within each formula recognize the different missions of each sector. While the HEFC and HB 59 merged the university regional and main campus formulas, the models are adjusted to recognize the student populations served by each institution.

- *Focus on student completion and incent the success of underserved "at-risk" student populations*: As outcomes-based funding policies are intended to align a state's investment with higher education with a state's higher education attainment needs, the associated funding model should prioritize completion. Additionally, institutions should be rewarded for successfully serving traditionally underserved (or "at-risk") student populations. Both the university and community college funding formula reward student degree or credential completion and also identify key priority or "at-risk" student populations whose increased completion is vital to meeting Ohio's higher education attainment and related workforce needs. Without this extra weight, institutions could benefit from the funding formula by restricting access for those whose success is less certain.

- *Significant amount of dollars allocated based on outcomes:* Much of the research into early performance funding models involved models such as Ohio's Challenge Programs which provided limited dollars to institutions that were outside the general allocation (e.g., SSI) to institutions. This ultimately limited the impact of the funding models, as the focus on completion was ancillary to the focus on enrollment. As noted above, Ohio overhauled the SSI to base SSI funding on student success and completion.

- *Phase-in of new funding policies*: While HB 59 removed the stop-loss, both the university and community colleges received bridge funding for one year as the more significant

changes took place for each sectors respective funding formula. Additionally, both funding formulas include a course completion component. While not directly correlated with enrollment, this component provides stability to the funding formula and for institutions.

Progression of Ohio's Performance Funding Policies

Ohio has had a progression of performance-based funding policies. The previously noted Challenge Programs provided additional dollars to institutions for achieving identified policy goals across four priority areas of research, access, completion and jobs. Funding for these programs equaled about 10 percent of the total operating budget for postsecondary education but remained outside the foundational SSI formula.

In 2009, Ohio established a more comprehensive funding policy by establishing three new formulas to allocate a portion of the state's general appropriation to institutions based on student success and completion. For university main and regional campuses the focus was on course and degree completion. The community college funding formula remained primarily enrollment based, but included a set of success points – various points of student progress and completion – that would make up a portion of the allocation model (5%-10%) for institutional funding. In this initial performance funding formula, a stop-loss was also put in place as institutions transitioned to the new funding formulas and expectations. The stop loss meant that institutions would not lose more than a certain percentage of the prior year funding.

In November 2012, the Higher Education Funding Commission (HEFC), established by Governor Kasich, recommended that Ohio's funding for higher education be increasingly focused on student success and completion.

PROPOSED POLICY CHANGES INCORPORATED INTO NEW UNIVERSITY FORMULA

50% of state funding into degree completion - In the prior formula, only 20% of state funding was awarded based on degree attainment. In the new funding model, funding for degree's increased to 50%. This puts more emphasis on degree completion and incentivizes institutions to get students to completion to be eligible for the degree component funding.

Remove the separate funding formula for regional campuses - In the prior formula, funding was set aside for regional campuses and distributed on a course completion basis. The new formula removes the set-aside, and treats all students in the university sector the same, regardless of where they are located. By incorporating the regionals in the completions component, it encourages universities to focus on degree completion for students at the regional campuses.

Out of state undergraduate students - The new formula allows for a 50% credit in the degree attainment portion for out-of-state undergraduate degrees. However, those students would have to remain in Ohio after graduation to be counted in the formula. Board of Regents staff cross-reference student graduation data with other state data to ensure out-of-state students remain in Ohio one year after being awarded a degree. Graduate funding applies to all students.

Award credit for Associate Degrees - The new funding formula gives credit for associate degrees earned at all regional and main campuses. In the prior formula, only a small number of main campuses earned credit for associate degrees. The formula allows universities to only be compensated for associate degrees programs of study that are approved through the Board of Regents. We cannot allow degrees to be awarded for obtaining a certain number of credit hours. Another change that is in included with our FY2016/2107 budget language, is that when an associate degree is funded for any university, the institution will only be compensated for the balance of the cost of a bachelor's degree if the student completes a bachelor's degree. This will eliminate double-counting of degrees.

Remove the stop loss – This historical safeguard, which redistributes funding from high performing schools to prevent funding losses at other schools was eliminated.

Adopt a standard three-year average - The prior version of the funding formula allowed for several different methods of averaging. In the interest of appropriate planning and transition, the commission recommended adopting a standard three-year average for all future years.

Apply STEM weights to degree completion model - In the prior funding formula, the STEM weights only apply at the course level. Under the new formula, STEM weights would also apply at the degree level. STEM weighting provides additional funding to these higher cost degrees and provides incentives to complete students in the STEM fields

Proportional credit for transfer students - In the prior formula, degree attainment funding is awarded exclusively to the institution from which the student graduated. The new formula awards proportional degree credit, and associated funding, to each university based on the actual amount of credits taken at that university.

Apply at-risk weights at the student level in the formula - In the prior formula, at-risk weights are applied at the campus level through a campus index, which attempts to reflect the proportion of at-risk students at each campus. The new formula removes the campus index, and applies the at-risk weights directly at the student level when they graduate based on their precise level of at-risk categories.

These changes incorporated into the new funding formula are seen as ways to improve completion and incentivize those "at-risk" students that data show may not complete as well as students without risk factors. The new formula puts additional weighting in the formula to generate additional SSI earning to incentivize universities to accept and complete at-risk students.

PROPOSED CHANGES FOR THE COMMUNITY COLLEGE FORMULA

For community colleges, the HEFC report recommended the sector transition from a funding model based primarily on enrollment in classes to completion – of courses, degrees and certificates. The changes to the funding formula took place over a two-year period, including the removal of the stop loss policy and the inclusion of extra weighting for success with students from at-risk populations.

University and Community College Formula Development & Student Factors
To finalize the technical details put forward by the Higher Education Funding Commission and adopted by the legislature and Governor through HB 59, both the Ohio Association of Community Colleges and the Inter-University Council led processes to engage institutions on finalizing the technical details. This included the evaluation, identification and appropriate weighting of the at-risk student factors.

Community College Funding Formula
The OACC's funding development consultation process was conducted from March-December 2013 with over 29 meetings that included presentations and input from the OACC Presidents. The consultation group had representation from a majority of institutions, and included representatives from the Ohio Board of Regents, the Higher Education Funding Commission and the Ohio Office of Budget and Management.

The Ohio Board of Regents supported the consultation group with analysis (including on the student factors, or access categories), data review on potential outcome metrics and formula modeling and refinement.

The final formula recommendations from the OACC were based on analysis of data and research, lessons from other states, and modeling outcomes.

The community college funding formula for FY 2015 included the identification of at-risk (called "access categories") students. These students are defined as being traditionally underrepresented and with low success rates. Advancing the success of these students is critical to the state meeting its postsecondary attainment needs. The categories support the access mission of community colleges for these students and provide incentives for institutions to more successfully serve them.

The fiscal year 2015 formula provided an added weight for students within these access categories who successfully achieve the course completion and completion milestone metrics[2] of the community college funding formula. This weight is a way to recognize added assistance provided and support institutions that are successful in maintaining access and achieving success for these students[3]. Identified access categories for FY 2015[3] are:

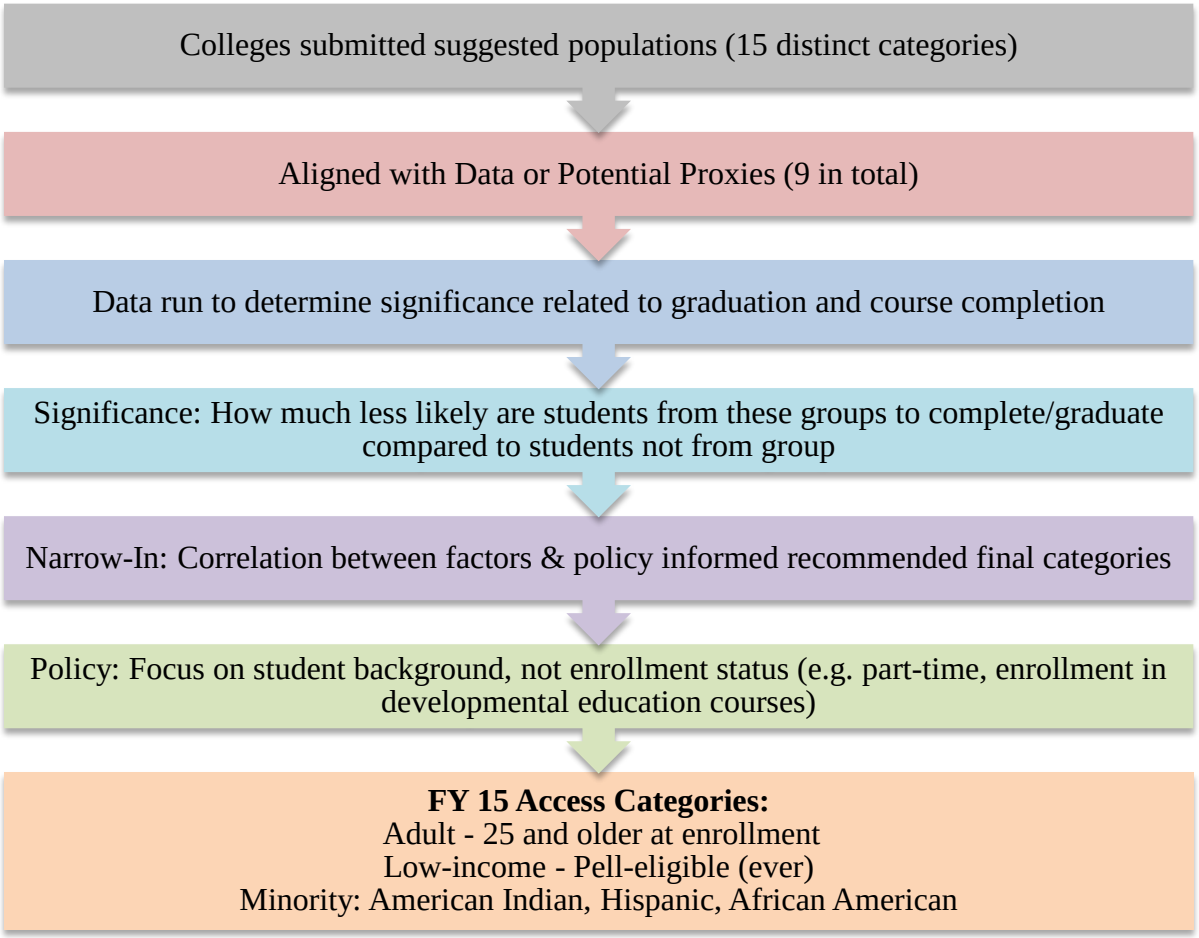
- **Adult**: age 25 and older at time of enrollment
- **Low-income**: Pell-eligible ever in college-career
- **Minority**: American Indian, Hispanic and/or African American

The recommended access categories were guided by the review of data provided by the Board of Regents. Analysis included evaluation of the data to ensure the categories defined adequately represent (either directly or as a proxy) students less likely to graduate than traditional students. The policy implications were also considered in deciding final categories to ensure they

[2] Completion milestone metrics are: 30+ credit hour or long-term certificate completion, associate degree completion, and transfer with 12 or more credits.
[3] The fiscal year 2016 Community College SSI formula will include an academically underprepared student category.

reinforced student success research and best practices. Figure 1 summarizes the process of decision-making regarding the use of weights for access categories.

Figure 1. Community College: Student Category Analysis Process



University Funding Formula

The IUC has led a funding formula working group to review and consider changes to the SSI performance funding as we continue to track and monitor the impact of the performance funding formula. The working group dives into the minute details of the formula to make policy recommendations to the IUC Business & Financial Officers' (BFO's). The BFO's consider the suggestions and make recommendations to the University Presidents.

The Ohio Board of Regents supports the IUC and working group with analysis (including on the student risk factors and associates weighting), data review on potential outcome metrics and formula modeling and refinement. The final formula recommendations from the IUC were based on analysis of data and research, lessons from other states, and modeling outcomes. The university funding formula for FY 2015 includes the proposals recommended above.

Fifty percent of the university funding is allocated to degree completion. The degree completion component allocates the funding by a share of the total cost of degrees awarded. This uses a

statewide average for cost of degrees, which funds higher costs degrees at a higher level.

In addition to the degree funding, the formula incorporates at-risk weighting to encourage universities to accept non-traditional students and allows them to receive additional funding for those at-risk students. Using all combinations of four risk factors, based on data studied for those students who do not complete at the same level as students with no risk, 16 risk categories and weights were developed. Below are the risk categories and the associated at-risk weighting for those students completing degrees:

Case

00: No risk factor
01: Financial only
02: Academic Only
03: Financial and Academic only
04: Age only
05: Age and Financial only
06: Age and Academic only
07: Age, Financial and Academic only
08: Race only
09: Race and Financial only
10: Race and Academic only
11: Race, Financial and Academic only
12: Race and Age only
13. Race, Age and Financial only
14: Race, Age and Academic only
15: All risk factors

Weights

case	Students	Graduates	State Grad Rate	Weight
case 00	64,983	47,530	73%	
case 01	34,352	23,201	68%	8.3%
case 02	12,780	6,478	51%	44.3%
case 03	9,480	3,837	40%	80.7%
case 04	853	141	17%	342.5%
case 05	974	232	24%	207.1%
case 06	342	81	24%	208.8%
case 07	870	208	24%	205.9%
case 08	4,027	2,144	53%	37.4%
case 09	5,397	2,638	49%	49.6%
case 10	1,788	657	37%	99.1%
case 11	7,224	1,952	27%	170.7%
case 12	99	16	16%	352.6%
case 13	576	44	8%	857.5%
case 14	41	6	15%	399.8%
case 15	551	83	15%	385.6%
	144,337	89,248	62%	18.3%
any risk	79,354	41,718	53%	39.1%

The fiscal year 2015 formula also provides thirty percent of the university sector funding for course completions. This provides funding to the institution as students complete courses and move through to the degree. There are two at-risk factors for course completions, Financial and Age. Weights are applied to provide incentive funding for course completions by students from groups that do not complete courses at the same level as those without the risk factors.

The remaining University SSI funding is allocated to medical and doctoral program. The doctoral programs are funded through a combination of FTE, degree completion and research funding brought into the institution. The funding formula is phasing out the FTE portion of the doctoral funding and moving to place more emphasis on degrees and research funding.

Veterans and First-Generation Students: Consideration for At-Risk Categories

As noted, the identification of at-risk student categories for both the university and community college formulas was informed by data and analysis. While veteran students and first-generation students are identified priorities for the state, neither sector directly identified these student populations in their funding formula. Data availability, analysis of outcomes, and correlations with other factors were considered in determining which categories to include in the funding formula. Overall analysis of each student category is provided below with more detailed information provided in Appendix A.

- ***First-Generation College Students*:** Data analysis indicates that first generation student status is not a strong predictor for a student not graduating. This is true when compared to other student categories or overall graduation rates.

  For community colleges the overall graduation rate is 24.3 percent and the graduation rate for first generation students is 23 percent. At the university level the overall graduation rate is 60 percent and the first generation rate is 51.3 percent. However, when compared with other factors, first generation students did not merit the need to be included as at-risk. Data shows a strong correlation between the identified low-income indicators for both sectors and first-generation students. This supports initial analysis conducted to inform the identified at-risk categories for both funding formula.

  It is also important to note that the identification of students as first generation is provided through the Free Application for Federal Student Aid (FAFSA). This self-reported data limits the consistency of the data as it relies on two variables 1) students completing the FAFSA and 2) students knowledge of first generation status/identifying as such. The first variable aligns with the community college sector's use of Pell eligible status as a student access ("at-risk") category. Creating incentives for institutions to support, even require, students to complete the FAFSA has clear benefits to the students – being identified as eligible to receive financial aid. However, the determination of that eligibility is consistently applied for all students based on standard definitions of Pell eligibility.

  Given the strong correlation between low-income and first-generation students, the use of the low-income definition can be seen as a proxy for first-generation status and provides greater consistency in reporting across students and colleges.

- ***Veterans*:** The data for veteran students is very limited. There is inconsistency across institutions both in collection and identification of veteran students with many institutions not even collecting this information. The primary source of data for the Board of Regents is the Veteran's Services Office. This could introduce potential selection bias in the data analysis as it is only capturing veterans who seek out services. Additionally, the number of students in the veteran's cohort available for analysis by the BOR makes up less than

one percent of the overall student population in both the community college and university sectors.

With the data available, BOR conducted analysis on the significance of veteran status on completion and graduation. This analysis indicates that for community colleges students, the veteran's cohort (only 659 students) had a higher graduation rate (33.8%) compared to the overall student cohort (24.3%) and all other analyzed student categories. Veteran students at universities had a lower graduation rate (51.7%) than the overall student cohort (60%) but were not as low as students in other student categories including over 22 at start, minority students and academically underprepared. Again the number of students identified in the veteran cohort is very small (356 students at the university level).

Ohio Student Outcomes

Since 2010 when the state's more ambitious outcomes-based funding policies began, both community colleges and universities have seen increases in the numbers of degrees awarded as well as the number of degrees per FTE. The latter represents an important analysis as it indicates institutions are not just producing more graduates in correlation to higher enrollments but are more effectively getting students to completion.

These outcomes should not be attributed solely to the state's outcomes based funding formula. At play is a much broader policy context for Ohio's higher education system – one clearly focused on student success and completion. State policymakers and the state's public institutions have made student success a clear priority – participating in national initiatives such as Complete College America, Completion by Design and Achieving the Dream. The outcomes-based funding policy is a policy tool that aligns the state's financial investment in higher education with these student completion priorities.

Figure 2: Total Degrees Awarded by Universities: 2010-2014

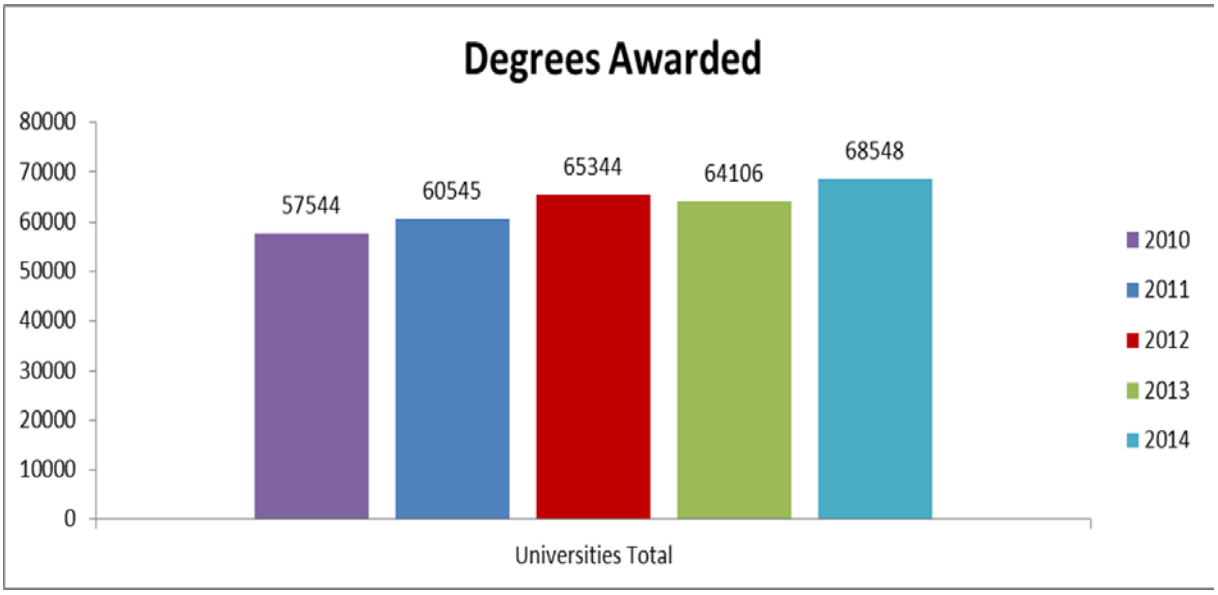


Figure 3: University Degrees Awarded per FTE, 2010-2014

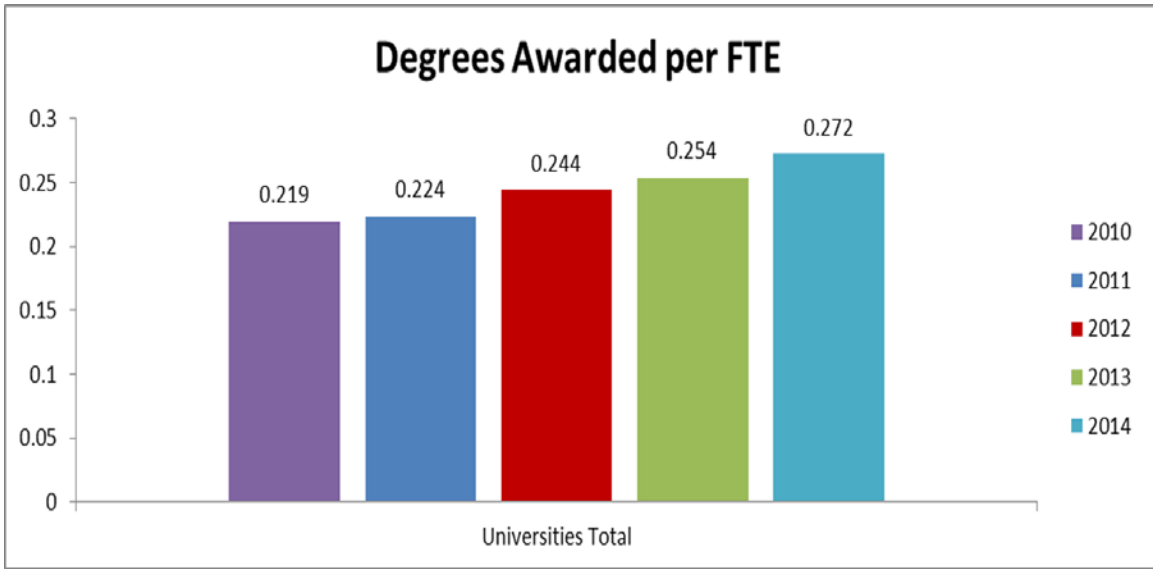


Figure 4: Community College Degrees Awarded, 2010-2014

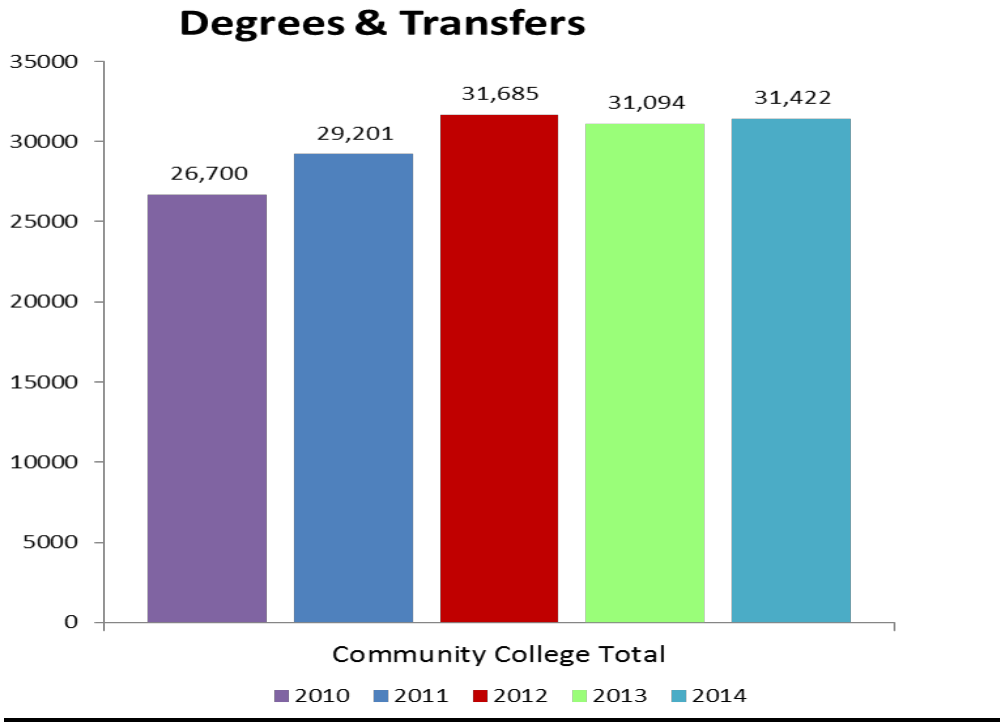
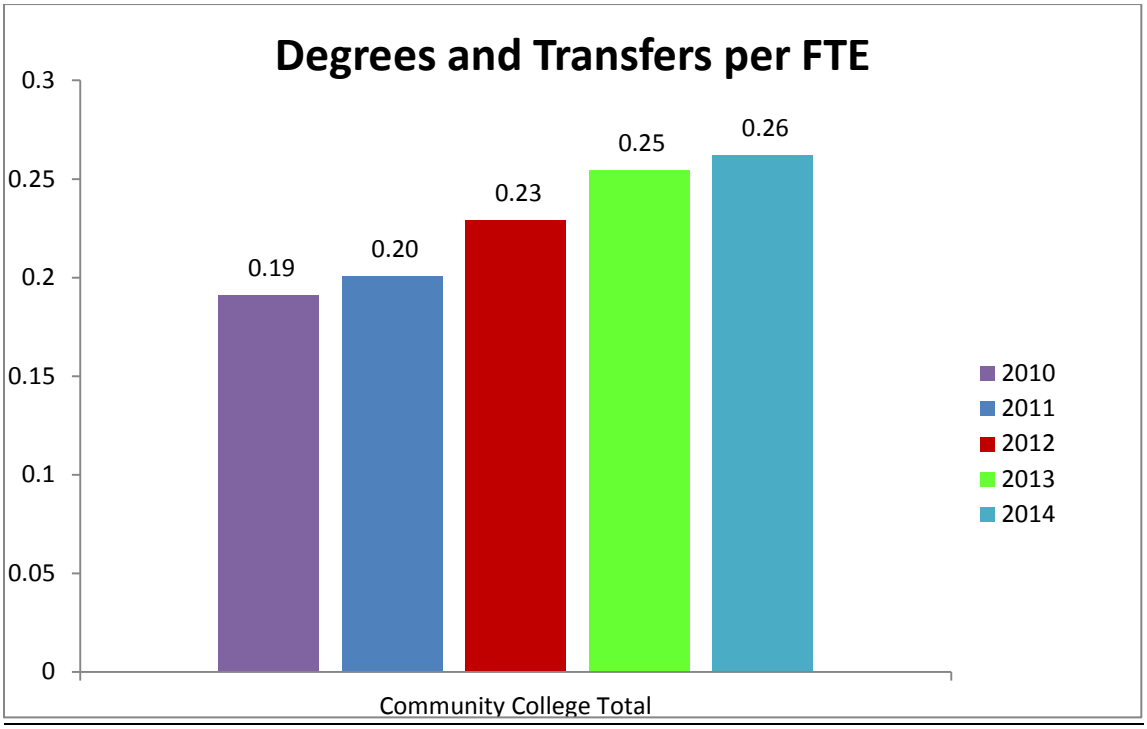


Figure 5: Community College Degrees & Transfers per FTE, 2010-2014



Looking at course completions, after a tick-up in the number of FTE completing courses, both universities and community colleges have seen a decline in overall numbers between 2012 and 2014. This likely represents the strong correlation between enrollment and course completion and the significant decline in enrollment, particularly at the community college level over the past couple of years. Importantly, however, the completions per FTE have remained steady or increased slightly in both sectors since 2010.

Figure 6: Percent of Eligible FTE Completed at Universities, 2010-2014

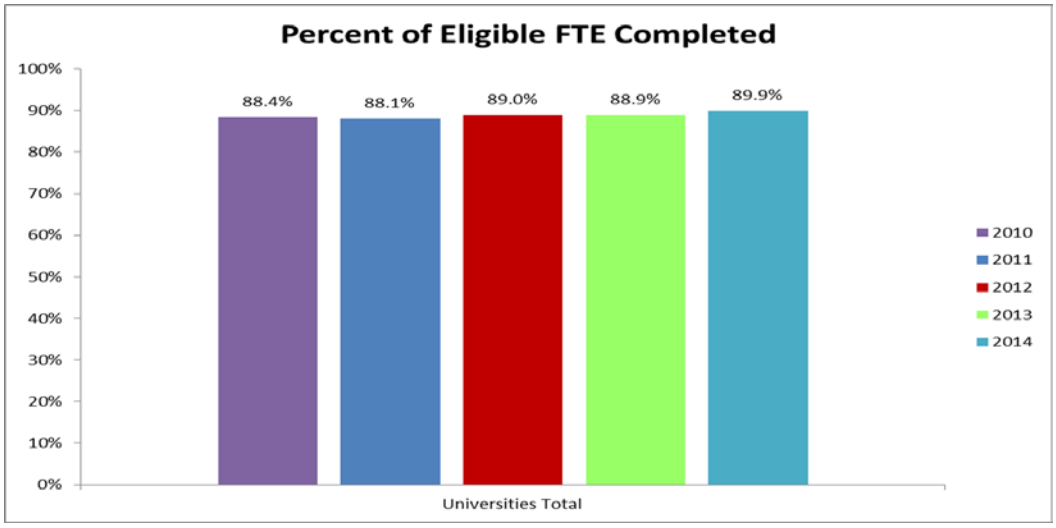
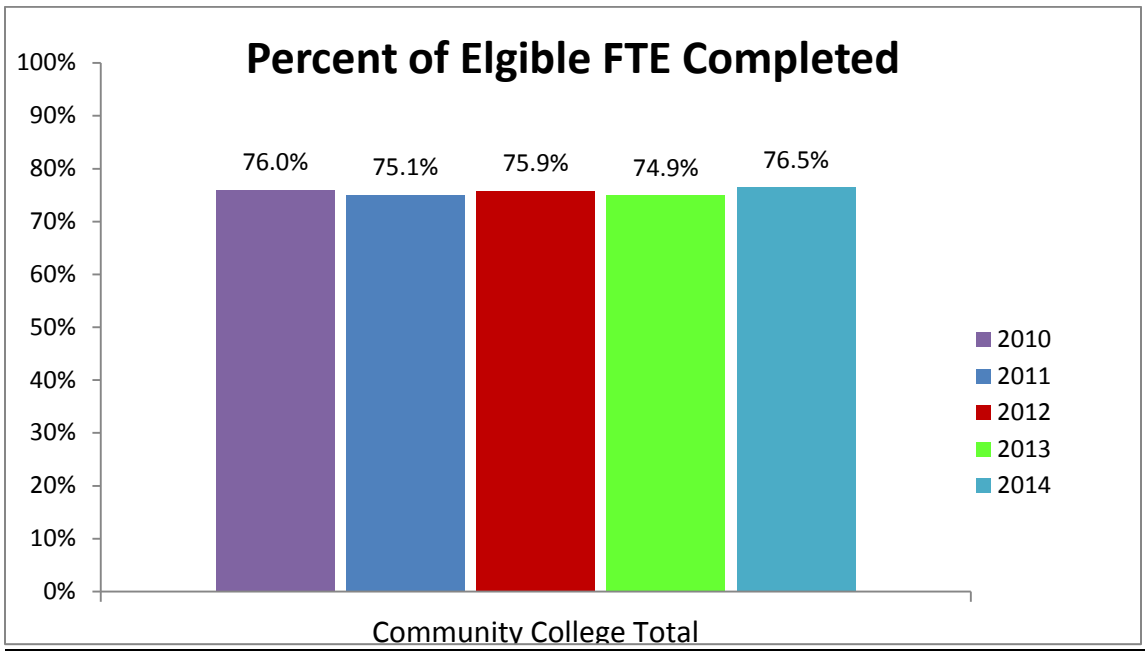


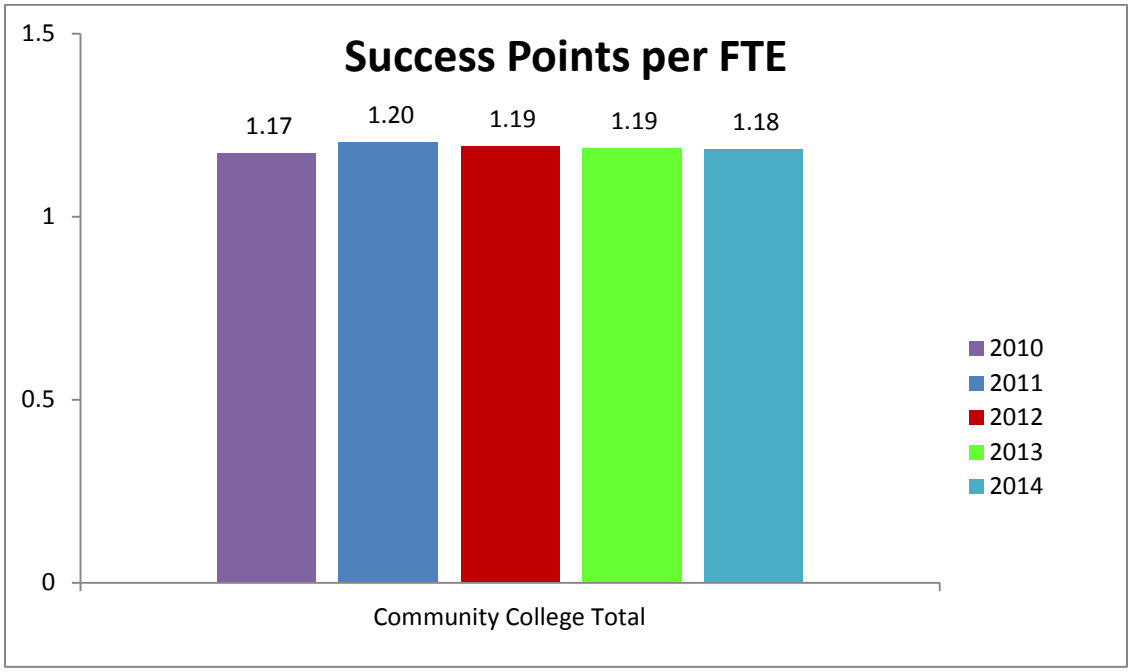
Figure 7: Percent of Completed FTE at Community Colleges, 2010-2014



For community colleges, analysis of success points shows a decrease in the number of success points since 2011 and a flat trend in the ratio or per FTE production of points. Comparing these trends to future outcomes on degree, certificate and transfer completion will be necessary to help understand student outcomes. Some of the decline may be due to changed policies and institution efforts related to developmental education.

Figure 8: Community College Success Points Earned, 2010-2014

Figure 9: Community College Success Points Earned per FTE, 2010-2014



Further and more refined analysis is needed to fully understand the effect and outcomes of the student success efforts collectively and individually, including the outcomes-based funding formula. As more data are available, this varied level of analysis will be easier to conduct.

Graduation Rate v. Predicted Graduation Rate

The use of predicted graduation rates is meant to adjust for various input-related student and institution factors to account for differences across institutions that may explain variations in actual graduation rates. The predicted rates typically consider variables such as student financial status (e.g. percentage of Pell recipients); academic preparation of students; selectivity of the institution; enrollment status (part-time vs. full-time) and demographics, among others.

While several organizations such as the Midwestern Higher Education Commission, *U.S. News and World Report, Washington Monthly* and *Forbes Magazine* develop and report predicted graduation rate calculations, each uses a different calculation and set of metrics. Additionally, the data often used to calculate these rates are not consistently reported or defined.

A chart summarizing predicted versus actual graduation rates for Ohio institutions is provided in Appendix B.

Recommendations

The collaborative nature of the outcomes-based funding policies in Ohio –from the recommendations of the Higher Education Funding Commission to the development of more technical formula details led by the IUC and OACC - has been a key feature of Ohio's funding policy development. As a result of these efforts Ohio has a finance policy explicitly aligned to the completion and educational attainment needs of the state and its economy.

The funding formulas represent not only the important role each institution plays in providing access to students but create clear incentives for institutions to help these students, particularly those most at-risk, to complete.

The recent changes put in place through the recommendations of the Higher Education Funding Commission and subsequently adopted in HB 59 made this link even more explicit. However, it represented yet another set of changes for institutions. The Board of Regents recommends the funding formulas remain consistent for next biennium, incorporating only the changes presented and approved by each sector.

As the BOR works to revamp the Higher Education Information (HEI) System, it will consider ways to provide for more consistent and robust collection of student characteristics, such as veterans and first-generation students. This will allow for more thorough analysis of these student categories.

The BOR in collaboration with the OACC and IUC will also continuously analyze the effect of the funding formulas to understand: trends across institutions, institution response, enrollment trends, and student-level outcomes, as well as any unintended consequences of an outcomes-based funding policy. The Board of Regents will also analyze the interconnection with other student success efforts and how the funding formula supports state priorities (such as Prior Learning Assessment, veteran student access and success of underserved students.

Appendix A: Veteran & First Generation Student Analysis

Graduation rates, correlations among factors, and logistic regression models were all examined.

Community College Graduation Rates:

For the community colleges, these data include students first enrolled at the institution in fall (or enrolled in fall but first term was summer) of 2002, 2003, 2004, or 2005. These students are then tracked for 8 years to see if they earned an associate's degree.

It appears from the graduation rates (below) that minority students and those who started at the institution at age 25 or higher are notably less likely to graduate than the overall graduation rate. Logistic regression models were run to determine whether these are still good predictors of graduating (or not graduating) when the other factors are held constant. With the other factors held constant, these were the best predictors of graduation for these cohorts. Being Pell eligible, first generation, or identified as military were not good predictors of not graduating. It should be noted that the number of students identified as military in these cohorts is very small.

Graduation Rates at Ohio Community Colleges						
	Overall	Pell Eligible	Over 24 at Start	Minority	First Generation	Military
Graduation Rates	24.3%	22.9%	18.1%	11.5%	23.1%	33.8%
Number in Cohorts	89,399	57,315	19,322	16,303	313,68	659

For the community colleges' graduation rate cohorts, the strongest correlations were between Pell eligibility and first generation status (.25) and between Pell and minority status (.21).

Correlations among risk factors for CC Degrees					
	Pell	Over 24	Minority	First Gen.	Military
Pell	1.000	0.053	0.213	0.251	0.011
Over 24	0.053	1.000	0.087	0.056	-0.016
minority	0.213	0.087	1.000	0.069	-0.002
First Gen.	0.251	0.056	0.069	1.000	-0.020
Military	0.011	-0.016	-0.002	-0.020	1.000

University Graduation Rates:

For the universities, these data include students first enrolled at the institution in fall (or enrolled in fall but first term was summer) of 2002, 2003, 2004, or 2005. These students are then tracked for 8 years to see if they earned a bachelor's degree or an associate's degree.

It appears from the graduation rates (below) that minority students, those who started their college career at age 22 or higher, or were at academic risk are notably less likely to graduate than the overall cohorts. Logistic regression models were run to determine whether these are still good predictors of graduating (or not graduating) when the other factors are held constant. With the other factors held constant, these were the best predictors of graduation for these cohorts.

With the other factors held constant, being identified as military was also a strong predictor of not graduating. Being financially at risk was the weakest predictor. First generation status was a moderate predictor. It should be noted that the number of students identified as military in these cohorts is very small.

Graduation Rates at Ohio Public Universities							
	Overall	EFC Risk	Over 22 at Start	Minority	Academic Risk	First Generation	Military
Graduation Rates	60.0%	54.6%	42.9%	40.3%	43.0%	51.3%	51.7%
Number in Cohorts	240,174	107,494	30,127	29,554	64,772	84,958	356

For the universities' graduation rate cohorts, the strongest correlations were between EFC risk and first generation status (.27) and between EFC risk and minority status (.20). Minority status and academic risk (.17), EFC and academic risk (.14), and EFC and older start age (.13) were also correlated but none of the relationships was very strong.

Correlations among risk factors for Univ. Degrees						
	EFC Risk	Over 22	Minority	Acad. Risk	First Gen.	Military
EFC Risk	1.00	0.13	0.20	0.14	0.27	0.02
Over 22	0.13	1.00	0.05	0.06	0.09	0.00
minority	0.20	0.05	1.00	0.17	0.10	0.00
Acad. Risk	0.14	0.06	0.17	1.00	0.17	0.02
First Gen.	0.27	0.09	0.10	0.17	1.00	0.00
Military	0.02	0.00	0.00	0.02	0.00	1.00

Course Completions:

For both sectors these data include FTE attempted by students in FY 2012, 2013, or 2014. If the student completed a course with a grade of D or better that is included in the completed FTE.

Community Colleges:

It appears from the FTE completion rates (below) that minority students have lower FTE completion or course completion rates than the other groups. Linear regression models were run to determine whether this still predicts course completion when the other factors are held constant. With the other factors held constant, minority status and Pell eligibility had the strongest relationship with FTE completion rate, though none of these was an extremely strong relationship. Being over 24 when entering the institution, first generation, or identified as military were only very weakly related. It should be noted that the number of FTE attempted by students identified as military is relatively very small.

FTE Completion Rates at Ohio Community Colleges						
	Overall	Pell Eligible	Over 24 at Start	Minority	First Generation	Military
FTE Completion Rates	75.8%	71.9%	75.5%	64.3%	73.3%	74.6%
Total FTE	380,957	251,055	127,104	81,283	178,771	3,366

For the community colleges' FTE cohorts, being over 24 at the time they entered the institution was not highly correlated with any of the other factors. The strongest correlations were between Pell eligibility and first generation status (.41) and between Pell and minority status (.25). Minority status and first generation status were also somewhat related (.13)

Correlations among risk factors for Community College FTE Completion					
	Pell	Over 24	Minority	First Gen.	Military
Pell	1.00	0.08	0.25	0.41	0.01
Over 24	0.08	1.00	0.09	0.09	-0.01
minority	0.25	0.09	1.00	0.13	0.00
First Gen.	0.41	0.09	0.13	1.00	0.00
Military	0.01	-0.01	0.00	0.00	1.00

Universities:
It appears from the FTE completion rates (below) that minority students have lower FTE completion or course completion rates than the other groups, but followed closely by those with financial risk and those who began at age 22 or older. Linear regression models were run to determine whether these factors are still relatively strongly related to course completion when the other factors are held constant. With the other factors held constant, minority status had the strongest relationship with FTE completion rate, followed by first generation status, and age at entry, though none of these was an extremely strong relationship. The other factors were only very weakly related. It should be noted that the number of FTE attempted by students identified as military is relatively very small.

FTE Completion Rates at Ohio Public Universities							
	Overall	EFC Risk	Over 22 at Start	Minority	Academic Risk	First Generation	Military
FTE Completion Rates	89.1%	81.0%	82.9%	80.4%	85.7%	85.4%	85.5%
Total FTE	676,068	33,647	55,750	71,037	51,366	192,540	1,335

For the universities' FTE cohorts, the strongest correlations were between EFC risk and minority status (.16), minority status and first generation status (.14), EFC and first generation status (.13), and older students and first generation (.12) . None of the factors were very highly correlated.

Correlations among risk factors for University FTE Completion						
	EFC Risk	Over 22	Minority	Acad. Risk	First Gen.	Military
EFC Risk	1.00	0.04	0.16	0.05	0.13	0.04
Over 22	0.04	1.00	0.07	-0.05	0.12	0.01
minority	0.16	0.07	1.00	0.12	0.14	0.01
Acad. Risk	0.05	-0.05	0.12	1.00	0.09	0.01
First Gen.	0.13	0.12	0.14	0.09	1.00	0.01
Military	0.04	0.01	0.01	0.01	0.01	1.00

Appendix B: Actual v. Predicted Graduation Rate Analysis

	US News, 2014				Washington Monthly, 2013			
Institution	Predicted Graduation Rate	Actual Graduation Rate	Actual Minus Predicted	IHE Classification	Predicted Graduation Rate	Actual Graduation Rate	Actual Minus Predicted	IHE Classification
Ohio State University--Columbus	71%	82%	11%	National Universities	70%	80%	10%	National Universities
Ohio University	53%	64%	11%	National Universities	61%	65%	4%	National Universities
Miami University--Oxford (OH)	70%	80%	10%	National Universities	75%	81%	6%	National Universities
Bowling Green State University (OH)	50%	58%	8%	National Universities	55%	58%	3%	National Universities
Kent State University (OH)	46%	52%	6%	National Universities	55%	50%	-5%	National Universities
University of Cincinnati	59%	62%	3%	National Universities	61%	59%	-2%	National Universities
Central State	24%	27%	3%	Regional College Midwest	22%	24%	2%	BA Group
Cleveland State University	38%	34%	-4%	National Universities	38%	30%	-8%	National Universities
University of Akron (OH)	45%	40%	-5%	National Universities	38%	38%	0%	National Universities
Youngstown State	39%	33%	-6%	Regional Universities Midwest	34%	35%	1%	MA Group
Wright State University (OH)	47%	40%	-7%	National Universities	40%	40%	0%	National Universities
University of Toledo (OH)	52%	45%	-7%	National Universities	41%	46%	5%	National Universities
Shawnee State	34%	20%	-14%	Regional Liberal Arts	39%	22%	-17%	Liberal Arts Group