



Office of Missouri State Auditor
Nicole Galloway, CPA

**Department of Higher Education
Performance Funding**



Findings in the audit of the Department of Higher Education Performance Funding

Background	Performance funding (PF) is a model for funding public higher education based on performance on established metrics. Including Missouri, 37 states across the country are either operating or transitioning to a PF model for public higher education. Generally the goals of PF models are to improve performance of public colleges and universities in regard to student outcomes by linking funding to improvement on designated metrics.
Management of the Performance Funding Processes and Model	The Missouri Department of Higher Education's (MDHE) oversight of some aspects of the PF process has been weak and the lack of comprehensive standards, rules and guidelines have contributed to concerns noted in this report. Review procedures have been insufficient to identify and remedy those concerns. The MDHE has not evaluated the effectiveness of the model or developed criteria or a methodology to perform an assessment of effectiveness, although the model has been operational for 4 budget years.
Performance Funding Determinations	The MDHE does not use records available on the Enhanced Missouri Student Achievement Study (EMSAS) related to student success and progress to verify the PF data for those measures. Additionally, the MDHE does not obtain detailed records from institutions to support the PF data for job placement and quality of student learning performance measures for which data does not exist on the EMSAS. Furthermore, the MDHE lacked sufficient procedures to ensure the accuracy of spreadsheet formulas used to calculate performance results, and consequently, 1 determination was erroneous.
Peer Groups and Benchmarks	The MDHE has not established guidelines regarding peer groups and institutions have not adequately documented selection criteria. Additionally, the MDHE approved a performance benchmark for 1 institution on 1 measure where other institutions have no benchmark.
Technical Manual	The MDHE technical manual lacks sufficiently detailed guidance on some matters, causing inconsistent interpretations by institutions.

In the areas audited, the overall performance of this entity was **Fair**.*

*The rating(s) cover only audited areas and do not reflect an opinion on the overall operation of the entity. Within that context, the rating scale indicates the following:

- Excellent:** The audit results indicate this entity is very well managed. The report contains no findings. In addition, if applicable, prior recommendations have been implemented.
- Good:** The audit results indicate this entity is well managed. The report contains few findings, and the entity has indicated most or all recommendations have already been, or will be, implemented. In addition, if applicable, many of the prior recommendations have been implemented.
- Fair:** The audit results indicate this entity needs to improve operations in several areas. The report contains several findings, or one or more findings that require management's immediate attention, and/or the entity has indicated several recommendations will not be implemented. In addition, if applicable, several prior recommendations have not been implemented.
- Poor:** The audit results indicate this entity needs to significantly improve operations. The report contains numerous findings that require management's immediate attention, and/or the entity has indicated most recommendations will not be implemented. In addition, if applicable, most prior recommendations have not been implemented.

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Department of Higher Education

Performance Funding

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NICOLE GALLOWAY, CPA

Missouri State Auditor

Honorable Jeremiah W. (Jay) Nixon, Governor
and
Members of the General Assembly
and
Zora Mulligan, Commissioner
Department of Higher Education
Jefferson City, Missouri

We have audited certain operations of the Department of Higher Education (MDHE) related to performance funding appropriations to public higher education institutions, in fulfillment of our duties under Chapter 29, RSMo. Beginning in fiscal year 2014, performance by public higher education institutions on defined measures has been used as a means to determine a portion of an institution's state appropriations. Appropriations totaling about \$109 million have been awarded to institutions for fiscal years 2014 through 2017 based on performance funding results. The objectives of our audit were to:

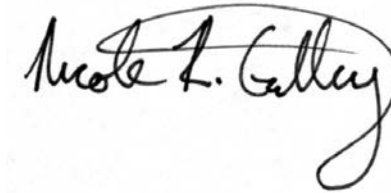
1. Determine whether the institutional results on performance measures were accurately calculated and adequately supported.
2. Evaluate MDHE procedures to ensure institutions maintained proper systems and controls for compiling and maintaining data for the performance measures.
3. Evaluate MDHE processes for establishing the performance funding model and approving changes to the model and institutional peer groups used for benchmarking.
4. Determine whether MDHE has begun planning for evaluating the effectiveness of the performance funding model.

We conducted our audit in accordance with the standards applicable to performance audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform our audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides such a basis.

During the audit, we determined (1) the summarized data used for the performance measures for many institutions could not be supported by detailed records maintained by the MDHE or the institutions, and a performance measure for one institution was not accurately calculated by the MDHE, (2) better guidance to the institutions is needed to ensure the integrity and consistency of the performance measurement data compiled, (3) the MDHE has not established proper guidelines about peer groups and approved institutional peer groups and benchmarks that were inadequately explained, and (4) the MDHE has not begun planning for evaluating the effectiveness of the performance funding model.

The accompanying Organization and Statistical Information is presented for informational purposes. This information was obtained from the department's management and was not subjected to the procedures applied in our audit.

The accompanying Management Advisory Report presents our findings arising from our audit of Missouri's performance funding of public higher education institutions.

A handwritten signature in black ink that reads "Nicole R. Galloway". The signature is written in a cursive style with a large, looping flourish at the end of the word "Galloway".

Nicole R. Galloway, CPA
State Auditor

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Department of Higher Education

Performance Funding

Introduction

Background

Performance funding (PF) is a model for funding public higher education based on performance on established metrics. Including Missouri, 37 states¹ across the country are either operating or transitioning to a PF model for public higher education. Generally the goals of PF models are to improve performance of public colleges and universities in regard to student outcomes by linking funding to improvement on designated metrics. Primarily, two forms of PF models operate nationally. One form provides PF as a form of bonus, typically between 1 percent and 5 percent of total state funding, over and above regular state funding, while the other form includes PF as an essential and integral part of regular state funding.² In Missouri, the model provides for relatively small amounts of PF compared to core state funding, and PF earned in one year becomes part of the core funding in following years.

Performance funding model

Missouri's current PF model was approved in 2012 by the Coordinating Board for Higher Education (CBHE) for use in appropriating funding for institutions beginning with the fiscal year 2014 budget. The model was developed by a task force comprised of representatives from the General Assembly, Governor's Office, MDHE, and institutions within each of the 3 sectors of public higher education institutions - 4-year institutions, 2-year community colleges, and the State Technical College of Missouri (STC). The model established a framework for PF to be earned by institutions based on performance on measures unique to each of the 3 sectors.

For 4-year institutions, the model contains the following performance measure categories:

1. Student Success and Progress
2. Increased Degree Attainment
3. Quality of Student Learning
4. Financial Responsibility and Efficiency
5. Mission Specific

The model contains 2 or 3 specific measures within each of the first 4 categories. Each 4-year institution chose one of those measures to use from each category. In category 5, each institution developed a measure unique to its mission.

¹"Performance Based Funding for Higher Education", National Conference of State Legislatures, July 2015, <<http://www.ncsl.org/research/education/performance-funding.aspx>>, accessed on August 31, 2016.

²Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., & Reddy, V. , "Looking Inside the Black Box of Performance Funding for Higher Education: Policy Instruments, Organizational Obstacles, and Intended and Unintended Impacts," *The Russell Sage Foundation Journal of the Social Sciences*, April 2016, pp. 147-173. <<http://www.rsjournal.org/doi/full/10.7758/RSF.2016.2.1.07>>, accessed on June 21, 2016.



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For community colleges, the model contains 3 measures related to student success and progress and 1 measure related to increased degree attainment and quality of student learning that are used by all institutions. Each institution developed an additional measure for its own use related to financial responsibility and affordability.

For the STC, the model contains 2 measures related to student success and progress, 2 measures related to job placement and quality of student learning, and 1 measure related to financial responsibility and efficiency.³

The pool of money potentially available for PF is determined annually by the General Assembly. The amount actually appropriated from the pool for PF for each institution is based upon the institution's relative share of higher education core budget funding, unearned PF of other institutions, and the institution's success on each of the five performance measures. Institutions can earn one-fifth of available performance funding for success on each measure.

The model defines success on a measure to be attained either by improvement on the measure using a rolling 3-year average or by sustained performance when the current year's performance exceeds a benchmark. For 4-year institutions, the benchmarks applicable for measures in categories 1, 2, 4, and 5 (for those institutions with benchmarks for measure 5) are the top one-third of performance for each measure from a peer group of comparable universities chosen by each institution. The benchmarks for measures in category 3 are established by the CBHE. For community colleges, the benchmarks for measures related to student success and progress are the top one-third of colleges in the National Community College Benchmarking Project (NCCBP), and the benchmarks for measures for financial responsibility and efficiency are determined from data reported to the NCCBP, the Integrated Postsecondary Education Data System (IPEDS), or the U.S. Census Bureau, as applicable. The measure related to increased degree attainment and quality of student learning is based on a benchmark established by the CBHE. For STC, the measures are benchmarked as either the top one-third of performance of a peer group selected by STC, or a benchmark established by the CBHE.⁴ The task force recommended the total funding allocated on the basis of performance not exceed approximately 2-3 percent of an institution's total state funding in any year.

Model revisions

Missouri's PF model was codified into state law, Section 173.1006, RSMo, in 2014. The statute also requires the addition of a 6th measure related to job

³ Appendix B contains a complete listing and description of performance measures. Appendix C shows the institution-specific measures for each community college and 4-year institution.

⁴ See Appendix D for a further description of how success on each measure is determined.



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placement of graduates. Additionally, the statute requires the CBHE evaluate and, if necessary, revise the institutional performance measures every 3 years beginning in calendar year 2019 or more frequently as necessary, and requires the MDHE evaluate the effectiveness of the PF measures, including their effect on statewide postsecondary, higher education, and workforce goals by 2019 and every 4 years thereafter.

The MDHE convened another task force in July 2014, comprised of representatives similar to the 2012 task force, to consider the requirements of the statute and develop a process for changes to the model. Recommendations made by the task force and approved by the CBHE included the following, among other changes:

- Institutions were allowed to make application to MDHE for changes to peer groups each year and/or to change institution-specific measures every 3 years. Proposed changes are to be posted publicly for at least 2 weeks for comment before submission to CBHE for consideration and approval.
- Success on performance measures was expanded to include improvement in a year-over-year comparison one year after the institution failed to meet the measure using the 3-year rolling average method.
- Institutions will begin reporting data in fall 2016 to use as a pilot year to assess the validity of the 6th measure for job placement and graduate education. Funding based on this measure will be requested as soon as the necessary data are available. The mechanism for data sources and defining success for the new 6th measure was also developed.
- Since STC already has a job placement measure within its existing 5 measures, the 6th measure for STC will be improvements in assessment of general education and that measure will become effective coincident with the 6th measure for all other institutions.

In 2016, based on concerns raised by the community colleges about the relevance of the measures related to student success and progress, the CBHE approved changes to 2 performance measures for community colleges to be effective with the fiscal year 2018 budget.

Data sources and process

Institutions track and compile data on student progress and institutional finances and report the data annually to MDHE and others. Institutions report to MDHE student-level information on current Fall semester enrollment and previous year completions and term registrations. Data collected include student name and other identifying information, enrollment status, term hours, GPA, degrees sought and held, and other



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data. This data, referred to by MDHE as the Enhanced Missouri Student Achievement Study (EMSAS), is used by the department for preparing various statistical reports and summaries. Additionally, institutions report summarized data to the IPEDS, maintained by the U.S. Department of Education's National Center for Education Statistics. Federal law requires institutions to annually report summarized data on enrollments, program completions, graduation rates, faculty and staff, finances, institutional prices, and student financial aid. Community colleges also report summarized data to the NCCBP.

IPEDS information serves as the basis for institutional performance on many of the PF measures. For 4-year institutions, institutional data for all measures except the measure for quality of student learning, first-time full-time completion of 24 credit hours, and some of the institution-specific measures are obtained from data reported to IPEDS.

For community colleges, institutional data for the student success and progress measures are obtained from data reported to NCCBP, and most of the institution-specific measures are obtained from IPEDS. For the STC, institutional data for all measures except the 2 measures related to job placement and quality of student learning are obtained from IPEDS. For all other measures for which data is not available on IPEDS or NCCBP, the institutions compile results from internal systems and report the summarized PF data to MDHE.

The determination of performance funding results is made by MDHE in November for the fiscal year beginning the following July 1st. The MDHE obtains data on each institution's performance on each measure and confirms the data with each institution, and as applicable, the MDHE will determine peer group benchmarks using data on IPEDS and/or NCCBP for the peers designated for each institution. The time periods covered by the data are the most recent complete fiscal year for which data is available for each measure and the previous 3 fiscal years. The MDHE then calculates the 3-year rolling averages and the peer group benchmarks, makes the comparisons to determine whether PF was earned for each measure, and provides the determinations to the institutions for review. Subsequently, the results are used to determine the total PF appropriation during the legislative appropriation process.

Scope and Methodology

The scope of our audit included, but was not necessarily limited to, performance funding awarded for the 2 fiscal years beginning July 1, 2015 and 2016.

We reviewed the PF determinations for 15 public institutions and systems including the University of Missouri System, the other 9 4-year institutions, the STC, and 4 of the 13 community colleges - Ozarks Technical College,



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St. Charles Community College, Three Rivers Community College, and State Fair Community College.

For those institutions, we determined if the summarized PF data agreed to the EMSAS and the IPEDS, if applicable, and source data we obtained directly from the institutions. Additionally, we evaluated the accuracy of the calculations and funding decisions made by the MDHE.

Our review covered the data supporting all 5 performance measures for each of the 15 tested institutions for each of the 5 years affecting the PF determinations for fiscal years 2016 and 2017. As the measures require a comparison of current and former results on a 3-year rolling average basis, it was necessary to review 5 years of data for each measure to review the data for all years used in the PF determinations for fiscal years 2016 and 2017. For performance measures based on student counts, we obtained from the institutions lists of student names, student ID numbers, and any other relevant data elements for each applicable factor in the performance measure. For example, for measure 1A for 4-year institutions regarding student retention, which is based on the ratio of returning first-time degree/certificate seeking students to total first-time degree/certificate seeking students,⁵ we obtained the list of students comprising the returning students and the list of students comprising the total first time students. We reviewed the lists for duplicated student names and/or IDs and counted the records for comparison to the total counts used for PF determinations. Additionally, where applicable we counted student records on EMSAS for comparison to student counts in the PF data. Additionally, for performance measures based on revenues or expenditures, we obtained financial statements from the institutions and compared the PF accounts to amounts on IPEDS, publicly available audited financial statements, and the amounts used in the PF determinations.

Our methodology also included conducting interviews with appropriate MDHE and institutional personnel; obtaining and reviewing written responses to various questions asked of each of the selected institutions about processes and procedures related to PF; and reviewing meeting minutes of the CBHE, pertinent policies and procedures, and other pertinent documents.

We obtained an understanding of internal controls that were significant within the context of the audit objectives and assessed whether such controls had been properly designed and placed in operation. We also obtained an understanding of legal provisions that are significant within the context of the audit objectives, and we assessed the risk that illegal acts, including fraud, and violations of applicable contract, grant agreement, or other legal

⁵ See Appendixes B and C for a complete list and description of performance measures.



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provisions could occur. Based on that risk assessment, we designed and performed procedures to provide reasonable assurance of detecting instances of noncompliance significant to those provisions.

Department of Higher Education Performance Funding Management Advisory Report State Auditor's Findings

1. Management of the Performance Funding Processes and Model

The Missouri Department of Higher Education (MDHE) has not sufficiently managed the performance funding (PF) processes and model. The MDHE has not provided sufficient oversight of the PF processes for funding determinations and establishment of peer groups and benchmarks, and the MDHE has not begun evaluating the effectiveness of the PF model. Proper management of the PF model requires both regular oversight and periodic evaluations. Our findings in the remainder of this report identify issues in the PF processes that require better oversight, and the issues, if unaddressed, may adversely affect an evaluation of the effectiveness of the PF model.

1.1 Oversight of processes

The MDHE's oversight of some aspects of the PF process has been weak and the lack of comprehensive standards, rules and guidelines have contributed to concerns noted in MAR finding numbers 2, 3, and 4. The MDHE's review procedures have been insufficient to identify and remedy those concerns. The concerns include:

- The MDHE doesn't adequately verify institutional results in PF determinations on some performance measures with student level data that already exists in an MDHE database or require institutions to submit detailed information to support summary data submitted. Further, the MDHE has not developed comprehensive standards regarding the compilation, review, retention, and reporting of PF data for all institutions.
- The MDHE has not established adequate guidelines regarding peer groups for 4-year institutions and the STC and some institutions have not adequately documented the criteria used in selecting their peer groups. The flexibility afforded institutions to select and change peer groups, coupled with inadequate documentation of the criteria used, raise concerns about the appropriateness of some peer groups used to determine PF. Some institutions used different peer groups for internal benchmarking purposes than used for PF determinations. Others made changes to peer groups that had the effect of lowering the benchmarks they had to exceed to earn PF, without adequately documenting why the changes occurred and were appropriate.
- Due to inadequate guidance and definitions of student success and student performance on some measures, some institutions interpreted measurements and reported results differently, causing inconsistent treatment among institutions when determining PF on some measures.

Given that the Coordinating Board for Higher Education (CBHE) approved the PF model and the Board and department are charged with evaluating the effectiveness of the performance funding measures, the MDHE should have



the authority to provide additional guidance and rules to institutions and additional oversight to better manage the PF model and processes.

The MDHE should develop comprehensive minimum standards and guidelines for the institutions to follow regarding PF data, peer groups, benchmarks, and performance measures and provide those standards and guidelines to all institutions. In developing the standards, the MDHE should consider the recommendations in MAR finding numbers 2, 3, and 4. Once developed, the MDHE should then institute appropriate procedures to ensure institutions have complied with the standards. These actions by the MDHE are necessary to ensure the consistency, appropriateness, and validity of the processes for funding determinations and establishment of peer groups and benchmarks.

1.2 Effectiveness of model

The MDHE has not evaluated the effectiveness of the PF model or developed criteria or a methodology to perform an assessment of effectiveness, although the model has been operational for 4 budget years.

Section 173.1006.3, RSMo, requires the MDHE to evaluate the effectiveness of PF measures, including their effect on statewide postsecondary, higher education, and workforce goals. This evaluation is to be completed by October 31, 2019, and every 4 years thereafter, or more frequently if necessary. MDHE personnel have indicated they are unsure how to assess the model's effectiveness and have not begun to assess how to meet this statutory requirement.

Changes to model

The MDHE approved revisions to the PF model to expand the meaning of successful performance to include improvement from year-to-year and to allow institutions to change peer groups and institution-specific measures. Additionally, the MDHE approved plans to replace 2 performance measures for community colleges in fiscal year 2018, and add a sixth performance measure for all sectors effective in fiscal year 2019. The MDHE should develop ways to determine whether changes enhance the effectiveness of the PF model. All model revisions should be made with the intent to improve the model's effectiveness to drive long-term improvement or sustained excellence in performance.

Analysis of results

The MDHE has not conducted a comparative evaluation of results on the institutional performance measures by institution and/or among institutions. Such an analysis could identify trends or abnormalities and facilitate an evaluation of the model's effectiveness. The analysis should also consider whether performances by institutions are improving, declining but still exceeding benchmark thresholds, or declining and below benchmark thresholds.



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The number of performance measures evaluated for all institutions for PF awarded from fiscal years 2014 through 2017 totaled 480. The number of instances where institutions received PF for improvement on measures totaled 301, while the number of measures where institutions did not improve or had declining performance totaled 179. Of these 179 measures, PF was not received on 71 measures. However, PF was received on the other 108 measures⁶ due to performance exceeding either an external or internal benchmark, even though the institutions' own performance declined in many instances. The analysis should consider whether these results are indicative of an effective model.

Optimal funding amounts

The MDHE has not analyzed the optimal amounts for PF. Total PF has varied annually and has ranged from about \$10 million to about \$42 million, or from about 1 percent to about 5 percent of total state appropriations for core and PF to institutions.⁷ In addition to state appropriations, institutions receive revenues from other sources including tuition and fees, federal appropriations, grants and contracts, auxiliary enterprises, and several other sources. While total PF is determined annually by the legislature and governor through the appropriation process, the MDHE should consider whether the PF amounts are sufficient to incentivize improved performance and offset administrative costs related to carrying out the model and make any appropriate recommendations for changes in the total amounts appropriated for PF purposes.

Unintended consequences

The MDHE has not determined whether the PF model has resulted in significant unintended consequences. An external study of PF in 3 other states⁸ concluded that risks exist of colleges making unintended changes to improve PF results, such as lowering academic standards and/or raising admission standards.⁹ Such unintended consequences could impact the effectiveness of the model.

Other recommendations in this report

The concerns noted in MAR finding numbers 2, 3, and 4 may raise doubts about the accuracy and meaningfulness of the PF results and, consequently, may adversely affect the ability of the MDHE to draw accurate conclusions about the model's effectiveness. The MDHE should consider those

⁶ See Appendix D for PF results for fiscal years 2014 through 2017.

⁷ See Appendix A for appropriations for core and PF for all institutions for fiscal years 2014 through 2017.

⁸ Indiana, Ohio, and Tennessee

⁹ Dougherty, K. J., Jones, S. M., Lahr, H., Natow, R. S., Pheatt, L., & Reddy, V. , "Looking Inside the Black Box of Performance Funding for Higher Education: Policy Instruments, Organizational Obstacles, and Intended and Unintended Impacts," *The Russell Sage Foundation Journal of the Social Sciences*, April 2016, pp. 147-173.
<<http://www.rsjournal.org/doi/full/10.7758/RSE.2016.2.1.07>>, accessed on June 21, 2016.



recommendations and make changes to improve the integrity of the data used for PF determinations.

Conclusion

The goal of PF models is to incentivize long-term improvement or the sustainment of excellence in institutional performance. Operating and managing Missouri's PF model requires resources and effort at both the institutions and the MDHE. The MDHE should develop criteria and a methodology to evaluate the effectiveness of the model. In the MDHE publication *Preparing Missourians to Succeed, A Blueprint for Higher Education*, the MDHE establishes goals for Missouri higher education as: increasing educational attainment; keeping college affordable; maintaining quality; expanding academic research and innovation; and building investment, advocacy, and partnerships. A continual analysis and study of the effectiveness of the PF model would help the MDHE ensure those goals are being met and resources are being spent efficiently.

Recommendations

The MDHE:

- 1.1 Establish comprehensive minimum standards and guidelines for institutions related to the PF data, peer groups, and benchmarks, and ensure institutions comply with those standards.
- 1.2 Develop criteria and a methodology to evaluate the effectiveness of the model and consider changes needed to improve the model.

Auditee's Response

- 1.1 *Since the implementation of the performance funding model, the MDHE has worked closely with its institutional partners to promote uniform and consistent data reporting. The MDHE recognizes the need to formalize this support structure. Finalizing comprehensive technical guidance for compiling, reviewing, retaining, and reporting performance funding data will be a high priority in the coming year. In the meantime, MDHE staff will continue to be available to address questions from institutions.*
- 1.2 *As the audit report notes, the MDHE is directed by law to complete an evaluation of performance funding measures by October 31, 2019. MDHE staff plan to complete the evaluation by that date. Conducting the evaluation on that time frame rather than on the shorter time frame suggested in the audit report will increase the usefulness of the MDHE's evaluation by capturing more complete data based upon well settled performance funding measures. It also allows a more meaningful retrospective of institutional performance over a longer period of time. Finally, it acknowledges the reality of state agencies' finite resources.*

The MDHE and public higher education institutions have also continually reviewed the performance funding model since its initial



implementation. The department convened a performance funding task force in 2014, and its deliberations resulted in changes to the framework to better reflect institutional missions and state needs. The department will establish another task force in 2017, and a formal evaluation will be conducted as required prior to the statutory deadline.

2. Performance Funding Determinations

The MDHE does not have adequate procedures to verify the summarized student data used in PF determinations, and the data is not always supported by detailed records. Additionally, the MDHE does not have adequate procedures to ensure its PF calculations are performed accurately.

2.1 Support for results

The MDHE does not use available EMSAS records related to student success and progress to verify the PF data for those measures. Additionally, the MDHE does not obtain detailed records from institutions to support the PF data for job placement and quality of student learning performance measures for which data does not exist on EMSAS. Our testing noted differences exist between the PF data and the totals of the records on EMSAS and the records provided to us by the institutions.

EMSAS

The totals of student-level data on EMSAS do not always agree to the PF data. Student-level data resides on EMSAS related to measures 1 and 2 for 4-year institutions; measure 1 for community colleges; and measures 1, 2, and 5 for the STC.¹⁰ To test whether PF data obtained from other sources agreed to similar data available on EMSAS, we counted applicable student records on EMSAS and compared those totals to the PF data. We noted the EMSAS-derived totals did not agree to the PF data for any of the 54 applicable measures reviewed. The differences between the EMSAS-derived totals and the PF data ranged from 1 to 143 students. None of the differences noted affected the decision as to whether PF was earned for fiscal years 2016 or 2017, however the differences could affect future years because some of the measures with differences will be used to determine the 3-year rolling average data going forward. MDHE personnel indicated IPEDS rules for counting students sometimes differ from those used for EMSAS purposes. MDHE does not require the institutions identify the students reported differently in the 2 databases to allow for a reconciliation of the EMSAS and IPEDS data used for PF purposes.

Data from institutions

The totals of student-level records we obtained from the institutions did not always agree to the PF data or to the data on EMSAS, if applicable. Differences were noted for 57 of 130 measures and for 10 of 15 institutions, ranging from 1 student to 113 students. It is unclear which data is more

¹⁰ See Appendixes B and C for a complete list and description of performance measures.



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accurate, the original PF data used in determining performance funding or the data subsequently provided upon our request. However, 1 institution would not have earned PF on 1 measure for fiscal year 2016 if the data provided us by the institution had been used for the determination. None of the other differences noted would have affected the fiscal year 2016 or 2017 PF determinations for any institutions, but such differences could have affects in future determinations as part of the 3-year rolling average period.

The MDHE does not require institutions retain documentation supporting the totals used for PF determinations or provide that documentation to the MDHE. Many institutions indicated they had not retained the documentation and attempted to reproduce the data upon our request, but could not now fully explain the differences between the data we received and the totals originally used for PF determinations. Institutions indicated the data provided us may include adjustments to student data based on changes in student statuses that occurred since the date the original reports for PF purposes were produced. Institutions also indicated that changes in personnel or systems for producing the reports may have contributed to the differences between the reports recreated for us now and the totals previously reported.

Conclusion

To ensure the PF results are valid and properly supported, the MDHE should ensure the summarized PF data used for determining success on the measures are supported by detailed records. The MDHE should use the detailed records reported by institutions for EMSAS to verify results for measures applicable to that data and require the institutions to explain differences between the EMSAS data and PF data. For measures not supported by EMSAS data, the MDHE should obtain detailed student-level supporting records from the institutions and use those records to verify the PF data. The MDHE should follow up on any significant differences between the PF data and totals of the details.

2.2 Calculations of results

The MDHE lacked sufficient procedures to ensure the accuracy of spreadsheet formulas used to calculate performance results, which resulted in 1 erroneous determination. We noted 1 instance where PF was incorrectly awarded to St. Charles Community College (SCCC) due to an incorrect spreadsheet formula entered by an MDHE employee. The error affected PF for fiscal year 2016 on measure 5 - the percentage of students enrolled in the fall term who return for the subsequent spring term. Because of the incorrect formula, the calculated institutional performance for the current 3-year rolling average period (68.8 percent) was erroneously rounded to 70.0 percent which exceeded the result for the previous 3-year rolling average period (68.9 percent). Consequently, the SCCC was incorrectly determined to have improved performance on the measure and was awarded about \$28,000 in PF, while actual results indicated declining performance that did not exceed the benchmark for the measure and should not have earned PF for the measure. The MDHE did not detect the error and lacks procedures



for routine reviews of the calculated results. To ensure determinations are accurate, MDHE should establish procedures to verify the formulas used in the calculations of results.

Recommendations

The MDHE:

- 2.1 Use EMSAS to verify PF data when applicable. For PF data not recorded on EMSAS, the MDHE should obtain student-level data from the institutions supporting the PF data. Additionally, the MDHE should require the institutions retain supporting data and explain significant differences between the PF data, EMSAS, and/or student-level records from the institutions.
- 2.2 Establish procedures to ensure PF results are calculated accurately.

Auditee's Response

- 2.1 *We support the recommendation in the audit report that additional student-level data should be collected from the institutions to verify relevant performance funding measures. This will be an important area of focus for the 2017 task force and in forthcoming technical guidance. The MDHE does not believe, however, that EMSAS data will be useful for this purpose for a variety of reasons: the permissibility of some retroactive exclusions to student cohorts in IPEDS reporting, which forms the basis of many measures; legitimate reasons the two data sources might differ (including later cleaning of internal data, which we support); and the time and energy spent in reconciling them, which may not be the most efficient means of ensuring the accuracy of performance funding reporting.*
- 2.2 *MDHE staff has already taken steps to simplify and ensure the consistency of formulas for calculating trend data for performance funding measures across the institutions. We regret the error involving one measure for St. Charles Community College in fiscal year 2016.*

Auditor's Comment

- 2.1 As indicated in the finding, we noted differences between data obtained from institutions, data used for PF determinations, and data on EMSAS. While there may be some legitimate causes for differences in student-level data in these various data sources, those differences should be identified and explained in a reconciliation between the data sources to ensure the accuracy and appropriate oversight of the PF results.

3. Peer Groups and Benchmarks

The MDHE has not established guidelines for the development and documentation of peer groups chosen by 4-year institutions and the STC for determining success on PF measures when performance declines. In addition, institutions have not adequately documented the criteria used to



determine peers. Peer group changes made by some institutions affected PF results. The MDHE allowed one 4-year institution to establish a performance benchmark on a measure where no other institutions have a benchmark.

3.1 Peer groups

The MDHE has not established guidelines regarding peer groups and institutions have not adequately documented selection criteria.

The MDHE allows 4-year institutions and the STC to select their own peers for performance measurements, subject to a 2-week public notice period and approval by the CBHE. The institutions provide the MDHE with a written description of the peers and the list of peer institutions for review and approval. The institutions choose peers from among the public colleges and universities in the country and the peer groups selected range in size from 7 to 261 schools. According to IPEDS, currently about 716 4-year public institutions and 534 2-year public colleges operate in the country. The performance of the peers are used to establish benchmarks for about 60 percent of the PF measures. Institutions can earn PF despite declining performance on selected measures by maintaining results above the top one-third of the chosen peers.

We reviewed the documentation of peer groups that institutions provided the MDHE and asked personnel at the institutions about their peer groups. We noted the peer group selection criteria was often vague. The explanations of the criteria used for selection of peers were insufficiently detailed to allow the MDHE to evaluate whether the peers are comparable to the institution and represent a reasonable group upon which the PF benchmarks can be based. We also noted PF peer groups sometimes differed from peer groups used by institutions for internal planning purposes, and some peer group changes occurred that affected PF determinations. Developing guidelines for institutions to follow in the peer selection process would foster consistency and help ensure the MDHE is provided sufficient information upon which to make peer group approval decisions.

Vague selection criteria

The peer group descriptions have often been vague and insufficiently detailed to explain the selection of all chosen peers. Often the characteristics or criteria cited by an institution would apply to many other institutions not listed as a peer and no explanation was provided as to why the others were excluded. For example, Harris Stowe State University (HSSU) selected 10 peers and Missouri Southern State University (MSSU) selected 31 peers, and both institutions explained their peer groups only as "institutions with similar demographics." Likewise, peer group explanations from many other institutions were also often too vague to fully explain how each selected



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peer was chosen¹¹ and why other seemingly comparable institutions were excluded.

Multiple peer groups

Two institutions (MSSU and Southeast Missouri State University [SEMO]) use one peer group for internal planning and monitoring purposes, but a different peer group for PF analysis. MDHE personnel indicated the PF peer groups of institutions are expected to mirror the peer groups used for internal purposes, and the MDHE was not aware these institutions used different peer groups. In the original PF model, the task force indicated nearly all institutions chose the same PF peer group the institutions used for internal planning purposes; however, the MDHE did not establish a requirement for institutions to follow. The MSSU peer group used for internal purposes included 31 institutions, 26 of which were not among the 31 institutions on the fiscal year 2017 PF peer group. MSSU personnel indicated the staff who developed the PF peer group are no longer employed at MSSU and they are unsure why a separate PF peer group had been established. SEMO personnel indicated the PF peer group formerly was used for IPEDS benchmarking, but when the institution updated its IPEDS peer group it failed to update the PF peer group.

Peer group changes

Three institutions - MSSU, Missouri Western State University (MWSU), and Northwest Missouri State University (NWMSU) - made changes to PF peer groups for fiscal year 2016 affecting PF results for that year.

- The MSSU removed 8 of the 9 original peer institutions and added 30 new institutions with similar demographics to its peer group. The MSSU did not explain the characteristics or range of the demographic factors used. The MSSU personnel indicated to us it was not clear why or how the former administration selected the previous or current peer group, but the current administration believed the former group to be too small.
- The MWSU removed 34 of the 43 peer institutions and added 1 new institution to its peer group. The MWSU peer group justification provided to MDHE indicated the peers were selected to be more similar to MWSU in terms of budget size and student enrollment. The justification did not explain the ranges used for determining comparable budget size and enrollment. The MWSU changed its peer group again for fiscal year 2017 and provided more specific parameters and ranges for those peers.
- The NWMSU removed 4 institutions, reducing the total peers selected from 40 to 36. The NWMSU peer group justification

¹¹ See Appendix E for peer group explanations for all institutions.



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provided to MDHE indicated the peers selected were public master's institutions with similar freshmen ACT scores, faculty salaries, and degree programs and 4 were removed that were located more than 800 miles from the university. The NWMSU personnel indicated to us the original group was selected in 2000 and provided ranges used for ACT scores and faculty salaries within 10 percent of those of NWMSU.

An MDHE official indicated the peer group changes were approved because no other institutions commented about the proposed changes during the 2-week public comment period and the department believed the peer groups seemed reasonable. For each of these three institutions, its own performance on some measures declined during 2016. As a result, the institutions were allowed to compare sustained performance on some measures against the peer group benchmarks to determine eligibility for performance funding. The benchmark for 2 performance measures was lower using the new peer group. One of the lowered performance benchmarks for each institution was sufficiently low to allow the institution to receive PF that would not have been received had the former peer group been retained.

Conclusion

The MDHE should establish guidelines for selection of peer groups to ensure the peer institutions are appropriate. The MDHE should require the institutions fully explain the criteria and characteristics used in selecting the peers. The MDHE should also consider the appropriateness of the number of peers chosen. Peers should be carefully chosen and fully explained for the PF results to be appropriate and meaningful. Declining institutional performance should be rewarded with PF only when the performance truly is superior compared to similar institutions. For the benchmarks derived from peer groups to serve as an appropriate standard of sustained excellence, the peers must be comparable to the institution in important ways such as admission standards, enrollment, budget, mission, location, and/or other factors. Selecting incomparable institutions as peers can distort comparisons for PF purposes. The factors used and the range of values established for each factor for peer group selection should be fully explained by the institution. Given the large number of colleges from which to choose as potential peers, it is important the institutions clearly explain the reasons for selecting all peers and reasons for excluding other institutions that may also fall within the range of identified factors. The integrity of the PF model could be undermined if institutions select or change peer institutions primarily to achieve optimum PF results.

3.2 Additional benchmark

The MDHE approved a performance benchmark for Missouri State University (MSU) on measure 1B (percentage of new students seeking



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degrees/certificates who complete 24 credit hours in first year)¹² where other 4-year institutions have no benchmark, and MSU earned performance funding in fiscal year 2016 based on the benchmark. The benchmark was set at 66.6 percent and was based on the top one-third of the 163 non-flagship¹³ institutions reporting on this measure to Complete College America (CCA), a national non-profit entity. Institutions do not report data on this measure to IPEDS as with other data used for peer group benchmarks on other measures. Consequently, the PF model did not provide for peer group benchmarks on this measure.

The MDHE approved the benchmark for MSU in November 2014 to become effective with fiscal year 2016 PF after MSU applied for the benchmark and no comments were received from other institutions during the 2-week public comment period. For fiscal year 2016 PF, the MSU's performance on the measure decreased from 75.0 percent to 74.8 percent, but MSU earned PF on the measure as its performance exceeded the newly established benchmark. The 3 other institutions using this measure - Lincoln University (LU), HSSU, and University of Central Missouri (UCM) - earned PF on the measure based on improved performance for fiscal years 2016 and 2017, so the lack of a benchmark for those institutions had no effect on their PF for those years. All 4 institutions using this measure are considered non-flagship universities, but their fiscal year 2016 and 2017 performances vary significantly on that measure, ranging from percentages in the mid-to-upper thirties for LU and HSSU to upper sixties for UCM and mid-seventies for MSU. The MSU uses a different peer group for all other measures.

Benchmarks allow institutions an opportunity to earn PF even when performance decreases. To allow the MSU a benchmark on this measure when other institutions have no benchmark, could create inequities among the institutions and undermine the fairness of the PF model. Additionally, the institutional grouping based on non-flagship status may not be an appropriate and comparable grouping for MSU for benchmarking purposes. Simply grouping by non-flagship status gives no consideration to other factors, such as disparate student populations caused by differing admission standards between the institutions. Given the wide variation in performance on this measure for the 4 institutions and the broad definition of non-flagship institution, it seems questionable that any benchmark from institutional groupings based solely on flagship status could provide an

¹² See Appendix B for a description of the performance measures.

¹³ Non-flagship universities are broadly considered to be all universities in the state other than the most prominent university; in Missouri, all universities other than UM systems are considered non-flagship universities.



appropriate benchmark for any of the institutions. The MDHE should reconsider the appropriateness of the MSU benchmark on this measure.

Recommendations

The MDHE:

- 3.1 Establish guidelines on institutional peer groups. Additionally, the MDHE should require institutions fully explain peer group selections and approve peer groups only after careful review.
- 3.2 Ensure that benchmarks are appropriate and utilized consistently in the PF model.

Auditee's Response

- 3.1 *The MDHE has instituted additional requirements for institutions seeking to change peer groups used for benchmarking in performance funding. While the institutions will continue to select their own peers and may propose changes annually following public comment and with approval of the CBHE, the MDHE now requires a more detailed justification for selection of peers and testing to evaluate the relative impact on prior reported data. For changes proposed prior to the fall 2016/fiscal year 2018 performance funding reporting cycle, the MDHE also requested evidence of other internal use of peers. The MDHE will amplify its message to institutions that maintaining a special set of "performance funding peers" separate from those used for other internal benchmarking is unacceptable.*
- 3.2 *Missouri State University's peer benchmark for successful completion of 24 credit hours, while unique, arose out of analysis of data collected by CCA, and approximated the 66th percentile of non-flagship institutions as defined by CCA. The extent to which a similar benchmark or benchmarks could be available to other institutions, or whether data might be available to replicate for other peer groups (defined more finely than flagship/non-flagship) could certainly be a topic of discussion for the 2017 task force.*

4. Technical Manual

The MDHE technical manual lacks sufficiently detailed guidance on some matters, causing inconsistent interpretations by institutions.

The MDHE developed a technical manual and distributed it to all institutions in 2012 when implementing the PF model. The manual provides definitions for the measures and information related to the methodology and sources for data compilation for each measure; however, additional guidance in the manual could provide clarity and promote consistency among institutions.



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24 credit hour completion

The manual does not define student success for one of the measures related to student success and progress for 4-year institutions, and institutions have interpreted the measure in different ways. The measure¹⁴ is based upon the number of first-time, full-time degree/certificate seeking freshmen successfully completing 24 hours in their first academic year. While the approved performance model allows 4-year institutions to individually determine what constitutes successful completion for purposes of that measure, the manual does not require the institutions disclose to the MDHE their interpretation, or require the institutions maintain consistent interpretations from year-to-year.

We noted the 4 institutions who selected this performance measure had different interpretations of successful completion of 24 credit hours, based on our surveys to these institutions. The MSU, UCM, and LU include credits passed with a D grade or above, while the HSSU requires a C- and above to be considered successful completion. The institutions do not indicate to the MDHE how they defined student success for this measure in annual data submissions.

Because PF for this measure is determined by a comparison of performance from year-to-year, it is critical that each institution consistently interpret and report comparable data from year-to-year. To help ensure this consistency, MDHE guidance should require institutions report both their interpretation of successful completion and the grades for those students included in this measure.

The MDHE should consider adopting a standard to apply to this measure for all applicable institutions. By defining the standard for determining successful completion by students, the MDHE would promote equitable treatment and allow for better comparison and evaluation of results among the institutions. While community colleges have similar measures and the PF model allows those institutions to define success, consistency is maintained as the NCCBP, the source for data for judging this measure, requires institutions report the data for students scoring a C grade or better.

Licensure/Certifications

For the measure for 4-year institutions of student performance on professional licensure and certifications,¹⁵ the manual does not clearly define relevant tests and the methods of calculating PF results, and institutions have inappropriately or inconsistently reported results for this measure.

¹⁴ See measure 1B on Appendix B.

¹⁵ See measure 3C on Appendix B.



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- The MDHE has not clearly detailed relevant tests, and one institution reported students taking tests that seem inappropriate for the PF measure. The technical manual indicates the institutions are to report students taking nationally normed tests required for employment. Of the 4 institutions selecting this measure, we noted for fiscal years 2012 through 2014, the MSU provided summarized results of student tests on 13 exams, but 2 of those exams were proficiency exams for internal assessment that do not lead to a license or certification and are not required for employment. These exams were for Oral Proficiency in a Modern Classical Language and a Test of Understanding in College Economics. In addition, the MSU included the Basic Life Support (BLS) certification exam for all medical program students while the other three institutions selecting this measure did not. The BLS exam is a certification for emergency procedures such as CPR and fibrillation. This exam serves as a pre-requisite to sitting for professional certifications such as the Board Certification for Athletic Training exam and is not an exam that leads directly to employment.
- The MDHE instructions on calculating the pass rate have been unclear, and institutions have inconsistently calculated student pass rates. The MDHE technical manual does not address how institutions should report students who initially fail and then retake the test for this measure. In our surveys to the institutions, one institution (SEMO) indicated it included results from only the first test attempt of the reporting year and did not consider retaken tests that year, while the other 3 institutions indicated they do not report failed tests in their summarized results if the student subsequently retakes and passes the test in the same year. Consequently, the pass rates reported by SEMO are not comparable to the rates reported by the other 4-year institutions using that performance measure. Comparability among institutions is important for this measure because the MDHE has established a 90 percent threshold benchmark for all institutions. The reporting method used by SEMO would tend to result in a lower success rate on the performance measure because students who fail initially, but pass later in the same year, would be included as a fail by SEMO but as a pass by the other 3 institutions. For determining PF earned for fiscal years 2017 and 2016, SEMO reported success rates of 86.3 percent and 85.6 percent, respectively, and earned PF each year due to improved performance, while the other three institutions using that measure reported declining success rates for one or both years, but still received PF for exceeding the MDHE benchmark of 90 percent for that measure.



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The MDHE should clarify its guidance for this measure to ensure institutions are reporting comparable and consistent results.

Recommendation

The MDHE should expand its guidance to 4-year institutions in the technical manual for reporting on performance measures.

Auditee's Response

As discussed previously, one of the MDHE's highest priorities is publishing the updated technical manual prior to the fall 2017/ fiscal year 2019 performance funding cycle. Regarding successful completion of 24 credit hours, allowing the 4-year institutions to make individual judgments regarding the threshold for student success required to meet measure 1B was an intentional and collective decision. The MDHE should have documentation of the criteria used by each institution reporting measure 1B, but implementing a uniform criterion would impose an additional level of administrative burden on the institutions and, as such, would need to be the subject of additional discussion with the institutions.

Regarding licensure and certification, the MDHE has neither the staffing nor the expertise to maintain an exhaustive and specific list of assessments reportable as licensure and certification tests. Reported assessments should be pervasively expected for graduates to work in the graduate's discipline, but some professional judgment on the part of reporting institutions will likely continue to be required. Additional documentation of reported assessments could and should be collected. Successful completion and licensure and certification will likely also be important topics of discussion for the next performance funding task force.

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Organization and Statistical Information

The Missouri Department of Higher Education (MDHE) is headed by a nine-member Coordinating Board for Higher Education (CBHE). The commissioner of higher education is appointed by the CBHE and serves as its chief executive officer in carrying out the goals and administrative responsibilities for the state system of higher education, with 13 public 4-year universities, 13 public community colleges, 1 state technical college, 26 independent colleges and universities, and more than 150 proprietary and private career schools serving more than 450,000 students.

As of June 30, 2016, the CBHE consisted of the following members:

Member	Term Expires
Brian Fogle, Chair	June 2012
Carolyn Mahoney, Vice Chair	June 2018
Doug Kennedy, Secretary	June 2020
Betty Sims, Member (1)	June 2016
Dalton Wright, Member	June 2014
Samuel Murphey, Member	June 2020
Michael Thomson, Member	June 2016
John Siscel III, Member	June 2018
Vacant	

(1) Betty Sims passed away August 22, 2016

The CBHE members serve without compensation but are reimbursed for expenses. The nine members of the CBHE, at least one but not more than two from each congressional district, are appointed to 6-year terms by the Governor and confirmed by the Senate. In addition, no more than five of the nine members may be affiliated with the same political party.

The MDHE's functions include identification of statewide needs for higher education, statewide planning for higher education, evaluation of student and institutional performance, review of institutional missions, development of effective and economical specialization among institutions, and administration of a performance funding program awarded to public community colleges and universities based on meeting established objectives. The functions also include submission of a unified budget request for public higher education to the Governor and the Missouri General Assembly, approval of new degree programs offered at public colleges and universities, setting policy for student financial assistance programs, and administration of the Proprietary School Certification Program. The MDHE's planning activities include the state's independent institutions as well as the public institutions. In addition, the MDHE has statutory responsibility for the administration of several state student financial assistance programs and is the state's designated guaranty agency



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for the Missouri Student Loan Program, which administers the Federal Family Education Loan Program.

The commissioner of higher education is appointed by the CBHE and serves as its chief executive officer in carrying out the goals and administrative responsibilities for the state system of higher education. Dr. David Russell served as the Commissioner from July 2010 until his retirement effective March 1, 2016. Leroy Wade served as interim commissioner of higher education from March 1, 2016 until August 28, 2016. Zora Mulligan was appointed as the commissioner of higher education effective August 29, 2016.

At June 30, 2016, the MDHE had approximately 57 employees.

Appropriations for Core and Performance Funding, by Institution

The following table lists state appropriations for each institution for core operations and performance funding. Appropriations for performance funding become part of core appropriations in the following year. Since performance funding began in 2014, amounts shown for 2013 and prior are only for core funding. Equity adjustments are made annually to redistribute core funding among community colleges. Institutional core appropriations of any year may differ from the total of the previous year's core and performance funding due to other increases, decreases, or adjustments during the appropriation process. Some 4-year institutions have also received additional appropriations for specific purposes which have not been included in this schedule, such as for the development of new degree programs. As such, the schedule does not include all state funding. The appropriations below are net of any Governor's reserve and/or restriction.

Institution	Year Ended June 30,					
	2017*		2016		2015	
	Core	PF	Core	PF	Core	PF
Community Colleges						
Crowder College	\$ 5,058,071	243,699	4,865,557	66,894	4,506,261	256,746
East Central College	5,224,664	204,933	5,167,569	54,445	4,994,683	174,160
Jefferson College	7,630,951	224,635	7,553,309	79,608	7,222,148	335,540
Metropolitan Community College	31,454,008	931,058	31,315,916	444,904	29,918,701	1,759,397
Mineral Area College	5,282,860	154,254	5,144,166	89,933	4,896,036	226,653
Moberly Area Community College	5,651,883	218,522	5,456,029	75,117	5,060,118	288,427
North Central Missouri College	2,541,062	124,291	2,494,113	43,786	2,383,287	110,825
Ozarks Technical Community College	12,253,012	585,710	11,603,932	196,571	10,715,665	481,314
St. Charles Community College	8,332,423	323,971	8,080,636	140,056	7,627,990	349,866
St. Louis Community College	43,666,266	1,728,590	43,903,607	311,915	42,424,146	1,993,749
State Fair Community College	5,680,960	220,774	5,544,948	57,728	5,239,408	241,094
Three Rivers Community College	4,799,853	185,758	4,658,213	48,261	4,333,406	248,373
Total Community Colleges	137,576,013	5,146,195	135,787,995	1,609,218	129,321,849	6,466,144
4-Year Institutions and State Technical College						
State Technical College of Missouri	5,712,231	191,501	5,286,136	57,362	4,604,071	235,864
University of Central Missouri	55,877,472	2,042,274	55,221,303	656,169	52,523,234	2,698,069
Southeast Missouri State University	46,088,443	1,684,671	45,439,473	539,514	43,221,074	2,218,399
Missouri State University**	85,492,135	3,042,436	82,961,950	985,805	78,908,473	4,053,478
Lincoln University	18,048,768	666,712	17,838,417	210,351	17,309,075	529,342
Truman State University	42,016,820	1,524,403	41,524,001	492,819	39,497,604	2,026,397
Northwest Missouri State University	31,457,092	919,318	31,088,721	368,371	29,574,037	1,514,684
Missouri Southern State University	23,883,484	866,301	23,659,665	223,820	22,730,240	929,425
Missouri Western State University	22,047,757	799,882	21,786,490	257,436	21,138,664	647,826
Harris Stowe State University	10,209,807	75,273	10,091,839	117,968	9,699,945	391,895
University of Missouri System	418,947,725	15,510,317	415,869,751	4,957,168	395,486,637	20,383,114
Total 4-Year and State Technical College	759,781,734	27,323,089	750,767,746	8,866,783	714,693,054	35,628,493
Total All Institutions	\$ 897,357,747	32,469,284	886,555,741	10,476,001	844,014,903	42,094,637

* Amounts for fiscal year 2017 are as of September 21, 2016 and are subject to additional budget restrictions by the Governor if state revenues fall short of projections.

** Missouri State University - West Plains is included in the funding awarded to Missouri State University, however it is otherwise noted as a Community College.

Appropriations for Core and Performance Funding, by Institution

Institution	2014		2013	2012	2011***	2010***
	Core	PF	Core	Core	Core	Core
<u>Community Colleges</u>						
Crowder College	\$ 4,187,844	80,446	4,266,574	4,219,273	4,529,209	4,785,717
East Central College	4,756,119	121,524	4,833,933	4,897,437	5,257,189	5,554,924
Jefferson College	6,959,109	89,138	7,091,594	7,185,857	7,713,709	8,150,567
Metropolitan Community College	28,524,040	923,900	29,399,534	29,853,554	32,046,509	33,861,432
Mineral Area College	4,604,801	146,180	4,651,744	4,708,036	5,053,875	5,340,096
Moberly Area Community College	4,785,868	93,622	4,760,866	4,722,030	5,068,897	5,355,969
North Central Missouri College	2,274,690	58,046	2,308,994	2,324,119	2,494,842	2,636,135
Ozarks Technical Community College	9,897,132	243,406	9,681,853	9,629,172	10,336,503	10,921,900
St. Charles Community College	7,239,403	136,584	7,244,033	7,294,245	7,830,058	8,273,507
St. Louis Community College	40,956,130	797,088	42,273,942	42,926,783	46,080,060	48,689,758
State Fair Community College	4,916,827	155,176	4,937,839	4,991,803	5,358,486	5,661,959
Three Rivers Community College	4,110,344	77,910	4,131,779	4,138,529	4,442,533	4,694,132
Total Community Colleges	123,212,307	2,923,020	125,582,685	126,890,838	136,211,870	143,926,096
<u>4-Year Institutions and State Technical College</u>						
State Technical College of Missouri	4,375,578	140,552	4,462,135	4,508,303	4,882,266	5,109,521
University of Central Missouri	50,223,059	1,294,191	51,211,520	51,107,702	54,856,416	57,961,767
Southeast Missouri State University	41,329,829	1,064,106	42,141,444	41,674,512	44,730,291	47,261,630
Missouri State University**	74,881,624	2,415,494	76,369,177	77,037,606	82,691,055	87,374,246
Lincoln University	16,660,768	319,363	16,984,332	16,990,512	18,233,076	19,262,389
Truman State University	37,770,047	972,008	38,513,336	38,694,750	41,531,645	43,881,665
Northwest Missouri State University	28,106,671	902,610	28,661,126	28,379,461	30,583,624	32,180,956
Missouri Southern State University	21,739,790	557,274	22,165,155	21,964,345	23,934,912	24,904,243
Missouri Western State University	20,218,183	517,907	20,612,969	19,986,240	22,053,258	22,955,701
Harris Stowe State University	9,225,380	291,915	9,405,153	9,376,040	12,984,267	10,625,238
University of Missouri System	375,770,072	12,116,634	382,280,601	381,888,844	414,669,496	438,131,881
Total 4-Year and State Technical College	680,301,001	20,592,054	692,806,948	691,608,315	751,150,306	789,649,237
Total All Institutions	\$ 803,513,308	23,515,074	818,389,633	818,499,153	887,362,176	933,575,333

** Missouri State University - West Plains is included in the funding awarded to Missouri State University, however it is otherwise noted as a Community College.

*** Core funding received by each institution in 2010 and 2011 included American Recovery and Reinvestment Act (ARRA) monies from the federal government totaling about \$101.6 million and \$39.9 million, respectively. The funds were provided for the purpose of budget stabilization and supplemented state funding.

Performance Measures

The following table outlines the description of performance measures by institution sector. Each 4-year institution chooses 1 measure from each of the first four categories. In addition, the 4-year institutions develop an institution-specific measure for the fifth category. The descriptions are as stated in the MDHE's technical manual.

4-Year Institutions

Measure	Description
	<u>Student Success and Progress</u>
1A	The percentage of first-time full-time degree/certificate seeking students at an institution who return/re-enroll for the subsequent fall term, or
1B	The percentage of first-time, full-time degree/certificate seeking students successfully completing 24 credit hours in their first two semesters (Fall and Spring semesters).
	<u>Increased Degree Attainment</u>
2A	The total number of awards conferred by an institution, applying weights of 1.5 for Science, Technology, Engineering, Math (STEM) and Health degrees, or
2B	The 6 year graduation rate of an entering cohort.
	<u>Quality of Student Learning</u>
3A	The percentage of students taking an assessment of general education and scoring at or above the 50th percentile; or earning a passing score if the assessment is scored pass/fail, or
3B	The percentage of students taking an assessment in their major field of study and scoring at or above the 50th percentile; or earning a passing grade if the assessment is scored pass/fail, or
3C	The percentage of students taking a professional or occupational licensure exam that is required for employment and scoring at or above the 50th percentile; or who earn a passing grade if the exam is scored pass/fail. Teacher certifications were excluded beginning for fiscal year 2017.
	<u>Financial Responsibility and Efficiency</u>
4A	The percentage of education and general (E&G) expenditures that are expended on the institution's core mission (instruction, research, public service), or
4B	The amount of educational revenue, defined as state appropriations plus net tuition revenue, per full-time-equivalency. The increase is calculated from one year to the next and compared against the rise in the consumer price index (CPI) for the corresponding year.
	<u>Mission Specific</u>
5	Institution Specific - see Appendix C

Performance Measures

Community Colleges

Measure	Description
	<u>Student Success and Progress</u>
1	The percentage of first-time, full-time entering and degree/certificate seeking students who successfully complete a certificate or degree of at least one year or longer, or successfully transfer to a 4-year institution within 3 years.
2	The percentage of developmental students who successfully complete their last developmental English course, who then successfully complete their first college-level English course.
3	The percentage of developmental students who successfully complete their last developmental math course, who then successfully complete their first college-level math course.
	<u>Increased Degree Attainment and Quality of Student Learning</u>
4	The percentage of career/technical graduates who pass their required licensure/certification examination. Institutions may report test data for any testing where the program has determined that the test is pervasively expected to work in the discipline. Tests reported will vary by institution based on programming and testing requirements within the institution. A Required Examination in any field will be a test or certification exam that is required as a condition of employment in the field/discipline. Examination will mean an industry recognized test that is required to practice or be employed. Pass will encompass all students who pass such examinations (as determined by the testing agency) within the reporting period and will include pass following more than one attempt.
	<u>Financial Responsibility and Efficiency</u>
5	Institution Specific - See Appendix C

State Technical College

Measure	Description
	<u>Student Success and Progress</u>
1	The percentage of first-time, full-time entering and degree/certificate seeking students who successfully complete a certificate or degree of at least one year or longer within 3 years.
2	The percentage of first-time, full-time degree/certificate seeking students at an institution who return/re-enroll for the subsequent fall term.
	<u>Student Placement and Quality of Student Learning</u>
3	The rate at which career and technical education graduates are found to be employed (including military service) after 180 days of graduation.
4	The rate at which career and technical education graduates pass technical skill assessments aligned with industry-recognized standards.
	<u>Financial Responsibility and Efficiency</u>
5	A ratio between completions of awards, with 1.5 weighting of STEM and Health degrees, and full-time equivalent enrollment.

Institution Specific Measures

The following table describes the institution specific measures developed by 4-year institutions and community colleges for measure 5. The budget years for which they were effective have been provided if an institution has used more than one institution specific measure since implementation of performance funding.

Institution	Fiscal Years	Institution Specific Measure
4-Year Institutions		
University of Central Missouri	2014-2017	Number of graduates earning degrees in professional and applied technology disciplines.
Southeast Missouri State University	2014-2017	The percent of academic programs delivered with a direct instructional expense per credit hour below the mean of the peer group.
Missouri State University	2014-2017	Number of graduates in science, technology, engineering, math, health care and other critical disciplines of need in the future workforce.
Lincoln University	2014-2015	The percentage of students in the freshman cohort who successfully complete English 101 within the first three semesters of enrollment.
	2016-2017	First-year retention of first-time full-time students residing in residential halls.
Truman State University	2014-2016	Improved critical thinking as measured through the Senior Capstone Experience. (Based on portfolio submissions of academic work completed by soon to graduate students.)
	2017	Participation in High-Impact Practices, such as internships, faculty research, learning communities, study abroad, senior experience, or service learning.
Northwest Missouri State University	2014-2017	Percent of full-time, first-time, degree/certificate-seeking undergraduate students receiving institutional grant aid.
Missouri Southern State University	2014-2015	Percentage of students in the freshman cohort who are successfully retained after participating in a first-year learning community each fall semester.
	2016-2017	Number of students enrolled in a learning community.
Missouri Western State University	2014-2017	The number of students each year who have participated in research projects or creative activities that have resulted in a peer-reviewed publication, presentation, performance, exhibit, or external award.
Harris Stowe State University	2014-2017	External funding received by the institution as a percentage of state appropriations.
University of Missouri System	2014-2016	Federally financed research and development (R&D) expenditures as reflected in (1) total federally financed R&D expenditures, (2) the percentage share (market share) of all dollars expended that year, or (3) the rank of the University.
	2017	Business and industry sponsored R&D expenditures for science and engineering.

Institution Specific Measures

Institution	Fiscal Years	Institution Specific Measure
Community Colleges		
Crowder College	2014-2015	Number of credit hours completed per \$100,000 of state appropriations.
	2016-2017	Revenues from tuition and fees per FTE plus revenues from state appropriations per FTE.
East Central College	2014-2015	Expense and general expenditures per credit hour completed.
	2016-2017	Tuition and fees as a percent of median statewide household income.
Jefferson College	2014-2015	Number of credit hours completed per \$100,000 of state appropriations.
	2016-2017	Cost in tuition and fees per FTE relative to the national average.
Metropolitan Community College	2014-2015	Instructional expense per credit hour.
	2016-2017	Cost in tuition and fees as a percentage of median Kansas City metropolitan statistical household income.
Mineral Area College	2014-2015	Number of credit hours completed per \$100,000 of state appropriations.
	2016-2017	Tuition and fees plus state appropriations per FTE.
Missouri State University - West Plains	2014-2017	Number of credit hours completed per \$100,000 of state appropriations.
Moberly Area Community College	2014-2016	Number of credit hours completed per \$100,000 of state appropriations.
	2017	Revenues from tuition and fees per FTE plus revenues from state appropriations per FTE.
North Central Missouri College	2014-2015	Number of credit hours completed per \$100,000 of state appropriations and local tax revenues.
	2016-2017	The percentage of students (full-time & part-time) enrolled in the fall term at an institution who return/re-enroll for the subsequent spring term.
Ozarks Technical Community College	2014-2015	Number of credit hours completed per \$100,000 of state appropriations.
	2016-2017	Cost in tuition and fees plus state appropriations per FTE.
St. Charles Community College	2014-2017	The percentage of students (full-time & part-time) enrolled in the fall term at an institution who return/re-enroll for the subsequent spring term.
St. Louis Community Colleges	2014-2015	Budgeted revenue (all types) per actual credit hours completed.
	2016-2017	Cost in tuition and fees relative to St. Louis area's median household income.
State Fair Community College	2014-2015	Number of credit hours completed per \$100,000 of state appropriations and local tax revenues.
	2016-2017	The percentage of full-time students enrolled at an institution in the fall term who return/re-enroll for the subsequent term.
Three Rivers College	2014	Number of credit hours completed per \$100,000 of state appropriations.
	2015	Number of credit hours completed per \$100,000 of state appropriations and local tax revenues.
	2016-2017	Tuition and fees plus state appropriations per FTE.

Performance Funding Results

The following table indicates the performance funding results for each institution for each measure for budget fiscal years 2014 through 2017. To determine whether the institution earned performance funding, the MDHE first determined whether the institution improved its performance from the previous period based on a 3-year rolling average. If performance improved, the institution earned performance funding for that measure. If the institutional performance did not improve and if a benchmark applies to the measure, MDHE next determined whether the institutional performance for the most recent 3-year period exceeded either an MDHE benchmark or a benchmark based on an external peer group.

The MDHE benchmark for 4-year institutions for measures 3A and 3B is based on the institution's admission standards - 50 percent for open admission institutions; 60 percent for moderately selective institutions; and 70 percent for highly selective institutions. The MDHE benchmarks for measure 3C (4 year institutions) and measure 4 (STC) are 90 percent and 60 percent, respectively. For measures with a benchmark based on external peer groups, the benchmark is generally the performance level of the top 33rd percentile of the peer group. If the institutional performance exceeded the benchmark, the institution earned performance funding for that measure. If the institutional performance did not improve or did not exceed the benchmark, if applicable, the institution did not earn performance funding for that measure. For measure 4B for 4-year institutions, performance funding is earned if the one-year percentage increase in educational revenue is either less than the increase in the consumer price index or less than the benchmark derived from the external peer group. In the table below, we have used the following designations:

- E-I - performance funding earned based on improved performance or meeting standard for measure 4B
- E-EB - performance funding earned based on benchmark with external peer group
- E-IB - performance funding earned based on internal MDHE benchmark
- NE - performance funding not earned

Performance Funding Results

Institution	Measure	Benchmarked by Institutional Peer Group	Fiscal Year Ended June 30,			
			2017	2016	2015	2014
Community Colleges						
Crowder College	1	Y	E-I	E-I	E-I	NE
	2	Y	E-I	E-I	E-I	E-I
	3	Y	E-I	NE	E-I	NE
	4	N	E-IB	E-IB	E-I	E-I
	5	Y	E-EB	E-EB	E-I	E-I
East Central College	1	Y	E-I	NE	NE	NE
	2	Y	NE	E-I	E-EB	E-I
	3	Y	E-I	NE	E-EB	E-I
	4	N	E-IB	E-IB	E-IB	E-IB
	5	Y	E-EB	E-EB	NE	E-I
Jefferson College	1	Y	NE	NE	NE	NE
	2	Y	NE	NE	E-EB	E-EB
	3	Y	E-EB	E-EB	E-I	NE
	4	N	E-IB	E-I	E-I	NE
	5	Y	E-EB	E-I	E-I	E-I
Metropolitan Community College	1	Y	NE	E-I	E-I	E-I
	2	Y	NE	NE	E-EB	E-I
	3	Y	E-EB	E-EB	E-I	E-EB
	4	N	E-I	E-I	E-IB	E-I
	5	Y	E-EB	E-EB	E-I	E-I
Missouri State University-West Plains	1	Y	NE	E-EB	E-EB	E-EB
	2	Y	E-I	E-EB	E-I	E-EB
	3	Y	E-I	E-EB	E-I	E-EB
	4	N	E-IB	E-I	E-I	NE
	5	N	E-I	E-I	E-I	E-I
Mineral Area College	1	Y	E-EB	E-I	E-I	E-I
	2	Y	NE	E-I	E-EB	E-I
	3	Y	NE	E-I	E-EB	E-I
	4	N	E-I	E-I	E-IB	E-I
	5	Y	E-EB	E-EB	NE	E-I
Moberly Area Community College	1	Y	NE	E-EB	E-EB	E-EB
	2	Y	E-I	E-I	E-I	NE
	3	Y	E-I	NE	E-I	E-I
	4	N	E-IB	E-IB	E-I	E-I
	5	Y	E-I	E-I	E-I	E-I

Performance Funding Results

Institution	Measure	Benchmarked by Institutional Peer Group	Fiscal Year Ended June 30,			
			2017	2016	2015	2014
North Central Missouri College	1	Y	E-EB	E-I	E-I	E-I
	2	Y	E-I	E-I	E-I	E-I
	3	Y	E-I	E-I	E-I	NE
	4	N	E-IB	E-IB	E-I	E-I
	5	Y	E-EB	E-I	NE	E-I
Ozarks Technical Community College	1	Y	E-I	E-I	NE	NE
	2	Y	E-I	E-I	E-I	E-I
	3	Y	E-I	E-I	E-I	E-I
	4	N	E-I	E-I	E-I	E-IB
	5	Y	E-I	E-I	E-I	E-I
St. Charles Community College	1	Y	E-I	E-I	E-I	NE
	2	Y	NE	E-I	E-I	NE
	3	Y	E-EB	E-EB	E-I	E-EB
	4	N	E-IB	E-I	E-I	E-I
	5	Y	E-I	E-I	NE	E-I
St. Louis Community College	1	Y	NE	NE	NE	NE
	2	Y	E-I	NE	E-I	E-I
	3	Y	E-I	NE	E-I	NE
	4	N	E-I	E-IB	E-I	E-IB
	5	Y	E-EB	E-EB	E-I	E-I
State Fair Community College	1	Y	NE	NE	NE	E-EB
	2	Y	E-I	NE	E-I	E-I
	3	Y	E-I	E-I	E-I	E-I
	4	N	E-IB	E-IB	E-IB	E-I
	5	N	E-I	E-I	E-I	E-I
Three Rivers Community College	1	Y	E-I	E-I	E-I	NE
	2	Y	NE	E-I	E-I	E-I
	3	Y	E-I	NE	E-I	NE
	4	N	E-I	NE	E-I	E-I
	5	Y	E-I	E-I	E-I	E-I
4-Year Institutions and State Technical College						
State Technical College of Missouri	1	Y	E-EB	E-I	E-I	E-I
	2	Y	E-I	E-I	E-I	E-I
	3	Y	E-I	E-EB	E-I	E-I
	4	N	E-I	E-I	E-I	E-I
	5	Y	E-I	E-I	E-I	E-I

Performance Funding Results

Institution	Measure	Benchmarked by Institutional Peer Group	Fiscal Year Ended June 30,			
			2017	2016	2015	2014
University of Central Missouri	1B	N	E-I	E-I	E-I	NE
	2A	Y	E-I	E-I	E-I	E-I
	3A	N	E-I	E-I	E-I	E-I
	4A	Y	E-I	E-I	E-I	E-I
	5	N	E-I	E-I	E-I	E-I
Southeast Missouri State University	1A	Y	E-I	E-EB	E-EB	NE
	2A	Y	E-I	E-I	E-I	E-I
	3C	N	E-I	E-I	E-I	E-I
	4A	Y	E-I	E-I	E-EB	E-I
	5	Y	E-I	E-I	E-I	E-I
Missouri State University	1B	Y	E-I	E-EB	E-I	E-I
	2B	Y	E-EB	E-I	E-I	E-EB
	3C	N	E-IB	E-IB	E-I	E-IB
	4A	Y	E-I	E-I	E-I	E-I
	5	N	E-I	E-I	E-I	E-I
Lincoln University	1B	N	E-I	E-I	E-I	NE
	2A	Y	E-I	E-I	E-I	NE
	3A	N	E-I	E-I	N/A	N/A
	3C	N	N/A	N/A	NE	E-I
	4A	Y	E-EB	E-I	E-I	E-I
	5	N	E-I	E-I	NE	E-I
Truman State University	1A	Y	E-I	E-I	E-I	E-EB
	2B	Y	E-I	E-I	E-I	E-EB
	3B	N	E-IB	E-IB	E-IB	E-IB
	4A	Y	E-I	E-EB	E-I	E-I
	5	N	E-I	E-I	E-I	NE
Northwest Missouri State University	1A	Y	NE	E-EB	E-EB	E-EB
	2B	Y	E-EB	E-EB	E-EB	E-EB
	3A	N	E-I	E-I	E-IB	E-IB
	4A	Y	E-EB	E-I	E-I	E-I
	5	Y	E-EB	E-I	E-I	E-I
Missouri Southern State University	1A	Y	E-I	E-EB	NE	E-I
	2A	Y	E-EB	E-I	E-I	E-I
	3C	N	E-IB	E-IB	E-IB	E-IB
	4B	Y	E-I	NE	E-I	E-I
	5	Y	E-I	E-I	E-I	NE

Performance Funding Results

Institution	Measure	Benchmarked by Institutional Peer Group	Fiscal Year Ended June 30,			
			2017	2016	2015	2014
Missouri Western State University	1A	Y	E-EB	E-EB	NE	E-I
	2B	Y	E-I	E-I	NE	NE
	3A	N	E-IB	E-I	E-I	E-I
	4A	Y	E-I	E-I	E-I	E-I
	5	N	E-I	E-I	E-I	E-I
Harris Stowe State University	1B	N	E-I	E-I	NE	E-I
	2A	Y	NE	E-I	E-I	E-I
	3B	N	NE	E-I	N/A	N/A
	3C	N	N/A	N/A	E-I	E-I
	4B	Y	NE	E-I	E-I	E-I
	5	N	NE	E-I	E-I	E-I
University of Missouri System	1A	Y	E-EB	E-EB	E-EB	E-I
	2B	Y	E-I	E-I	E-EB	E-I
	3C	N	E-IB	E-I	E-I	E-I
	4A	Y	E-EB	E-EB	E-EB	E-I
	5	Y	E-I	E-I	E-I	E-I
Total Not Earned (NE)			18	15	15	23
Total Earned via Improvement (E-I)			67	74	83	77
Total Earned via External Benchmark (E-EB)			22	22	15	13
Total Earned via MDHE Internal Benchmark (E-IB)			13	9	7	7

Institution Peer Groups

The following table provides the peer group descriptions for all institutions. The peers for community colleges were collectively determined by the community colleges. Peers for the State Technical College and the 4-year institutions were determined by each institution, and the description of each peer group below was provided to MDHE by the institution.

Institution	Budget Years	Institutional Peer Group
Community Colleges	2014-2017	The National Community College Benchmarking Project – a comprehensive national data collection and reporting consortium designed for two-year colleges with over 280 colleges participating nationwide, including all Missouri community colleges.
State Technical College of Missouri	2014-2015	National group of 15 technical colleges with similar program mix that do not issue degrees or certificates in Arts and Humanities.
	2016-2017	Removed 2 private institutions and replaced them with 2 public institutions with similar program mix. Peer group remained at 15 institutions.
University of Central Missouri	2014-2017	A group of 15 institutions from the West North Central region of the American Association of University Professors Category IIA (Master's), which have comprehensive organization characterized by diverse post-baccalaureate programs – including first-professional – but do not engage in significant doctoral-level education.
Southeast Missouri State University	2014-2017	A pre-existing group of 15 institutions that Southeast uses for IPEDS-based internal research and comparisons. In addition, for institutionally-developed performance funding measures, the comparator group will be the large, Master's level universities from the University of Delaware study of instructional costs and productivity.
Missouri State University	2014-2017	The Coalition of Urban and Metropolitan Universities. Approximately 70 institutions are members of the Coalition.
Lincoln University	2014-2015	All public land-grant four-year Historically Black Colleges and Universities with an enrollment between 1,000 and 5,000. The peer group includes 21 institutions.
	2016-2017	Reduced from the original 21 institutions as described above to 7 institutions to account for size, mission, demographic, and land-grant status within the original peer group.
Truman State University	2014-2017	The Council of Public Liberal Arts Colleges. The peer group includes 25 council member institutions.
Northwest Missouri State University	2014-2015	A set of 40 Public Master's institutions with a similar freshmen ACT score, faculty salary and degree program mix (including education).
	2016-2017	Removed 4 institutions from original list due to geographic location.

Institution Peer Groups

Institution	Budget Years	Institutional Peer Group
Missouri Southern State University	2014-2015 2016-2017	A set of 9 institutions. A set of 31 institutions with similar demographics.
Missouri Western State University	2014-2015 2016-2017	The Integrated Postsecondary Education Data System (IPEDS) list of open admission, public institutions with the Carnegie classification of baccalaureate or higher that have similar budget size and student enrollment. This includes 43 peer institutions. Reduced from the original 43 institutions to 10 institutions to be more similar in terms of budget size and student enrollment.
Harris Stowe State University	2014-2017	A set of 10 institutions with similar demographics.
University of Missouri System	2014-2017	Public doctoral institutions. This includes 261 peer institutions.