Tab 29

Per-Student Funding Adjustment Update

Coordinating Board for Higher Education
June 5, 2019

BACKGROUND

Missouri does not have a formula for the allocation of state funds to public colleges and universities. Instead appropriators have used a base-plus or -minus model in which the same percent increase or decrease is applied to all institutions without sensitivity to enrollment or programmatic cost factors. The Missouri Community College Association (MCCA) and the Council on Public Higher Education (COPHE) have internally agreed-upon formulas intended to provide adjustments to reflect differences in per-student funding amounts.

The department's 2019 Blueprint Implementation Plan committed to developing a new model for seeking institutions' funding requests. Staff, working with a review team of stakeholders, have worked with the National Center for Higher Education Management Systems (NCHEMS) to determine whether any changes should be made to the existing per-student funding models. The review team will continue working to revise/finalize models for per-student funding adjustments that will be used to make a recommendation for the FY 2021 budget.

Funding History

Community Colleges: For FY 2018, community colleges' per-student funding ranges from $1,664 to $4,007 based on full-time equivalent enrollment and total state appropriations. The last increase received by community colleges for equity was a $4.5 million core addition in FY 2017. The model applies to community colleges' entire appropriation, not just new money.

Public Universities: For FY 2018, per-student funding from state appropriations ranges from $4,225 to $9,764 for this sector based upon full-time equivalent enrollment and total state appropriations.

Public universities, under the COPHE model, only use their formula if new monies are appropriated for per-student funding adjustments. These universities have not received a separate equity line item since FY 2017. However, in FY 2017 funding was provided as a part of a pool appropriation of $37,192,765. This pool was for all higher education institutions in addition to the equity line item for community colleges above. The pool included all sectors and was for performance funding and equity adjustments. These funds were restricted and never received by the institutions.

State Technical College of Missouri: For FY 2018, per-student funding from state appropriations was calculated as $4,453 based upon full-time equivalent enrollment and total state appropriations for this sector of one.

Recent Funding Requests: The department's FY 2020 budget request included a 1% core increase to be distributed through the two sectors' models with a 1% core increase for State Technical College of Missouri (as a sector of one). These decision items did not receive a Governor's recommendation nor House or Senate endorsement. However, the topic of per-student funding was discussed in both the House and Senate and did result in both chambers taking their own approaches to address the issue.

As a result, the House and Senate both added per-student funding core increases to the 2020 budget. Specifically, Missouri State University received $10 million in ongoing new general revenue.

CURRENT STATUS

As the timeline outlined in the attachment indicates, NCHEMS has provided a preliminary draft report and is working on a final report. That report will be provided to the review team, board members, public college and university presidents/chancellors, and chief financial officers and will be added to the official board book as soon as it is completed.

The major policy questions on the table at this point include:

1. ***Should the model be based on straight FTE counts, or should there be weighting to reflect differences in program costs and student characteristics?***

   There is general preliminary consensus that FTE should be weighted. For program costs, public universities will likely use the University of Delaware's National Study of Instructional Costs & Productivity. This study is widely used and generally accepted. It is the basis of COPHE's existing model and has the advantage of being updated annually. Because the Delaware Study does not include community colleges, community colleges will likely use NCHEMS' weights.

   For student characteristics, there is general preliminary consensus that receipt of a Pell Grant is the most effective proxy for students who need additional institutional support to succeed and should therefore be weighted more heavily. The group considered other characteristics, including race, income, first-generation student status, ACT score, and enrollment in remedial coursework and ultimately concluded that none of those characteristics are supported by widely available, highly reliable data. If consensus on this area holds, students who receive Pell Grants will count as 1.5 FTE – consistent with the department's approach for performance funding.

2. ***Do we "count" Missouri students only, or students from out of state as well?***

   There is general preliminary consensus that all students should be included in FTE totals. This consensus is based on a belief that Missouri needs to be an importer of talent and a recognition that out-of-state students contribute substantially to the state's economy during their time here.

3. ***When we say "per-student funding," what funds are we talking about?***

   There is general preliminary consensus that funds for grants and extension programs should not be included in the calculation. The review team is still discussing whether to include tuition and, for community colleges, local property taxes, but the group leans toward not including those funds.

4. ***Is there a base amount every college and university needs to operate just to keep the doors open? If so, how should that amount be treated in the per-student funding calculation?***

   There is some preliminary consensus that some amount of money should be excluded from consideration in calculating per-student funding, but questions remain about (1) what that amount should be, (2) whether the amount is the same for public universities and community colleges, (3) whether it should be subtracted from the institution's total annual budget or only its state appropriation. Members of the review team asked to discuss this matter with presidents and chancellors before moving forward with a recommendation.

A final major question is how the model will be used. Staff plan to use the model to determine the total dollar amount needed to bring the institutions with the lowest weighted per-student funding in each sector up to the level of the institutions with the highest weighted per-student funding in each sector, then to request funds to close that gap, potentially over a period of years.

NEXT STEPS

On June 3, 2019, NCHEMS will provide updated recommendations, along with calculations demonstrating how the recommended models would affect individual institutions. Those documents will be distributed to the review team, the board, and public college and university presidents/chancellors and chief financial officers. NCHEMS will present their recommendations to the board at the June 4, 2019, work session and to the board and the Presidential Advisory Council at a special meeting at the end of June 4, 2019. At that time, the board will receive feedback and direct staff to take additional action to reach consensus on a model in advance of the September 2019 CBHE meeting.

RECOMMENDATION

This is an information item only.

ATTACHMENTS

A. Timeline for Per-Student Funding Adjustment Discussion
B. NCHEMS Report on Per-Student Funding (to be distributed after initial board book mailing)

Tab 29 Attachment A

Timeline for Per Student Funding Adjustment

Coordinating Board for Higher Education
June 5, 2019

Timeline – Phase 1	
April 19	Review Team meeting: NCHEMS presents national survey responses, deep dive into Maine example, formula characteristics used by other states; MDHE provides Review Team with Missouri data on formula characteristics used by other states
April 23	Update during CBHE teleconference
April 25	MDHE provides CFOs with update
May 3	Review Team meeting: Refinement of formula components
May 16	NCHEMS provides recommendations on existing models, including detailed projections of how different recommendations would impact individual institution, to Review Team
May 17	NCHEMS presents recommendations to Review Team; MDHE solicits sector feedback
May 28	NCHEMS' recommendations included in June board book as an information item with sector feedback
May 30	Review team provides feedback to NCHEMS
June 3	NCHEMS provides updated recommendations and projections based on feedback; model distributed by email to PAC
June 4	NCHEMS presents on information item at CBHE work session and to institutions
June 5	Report on information item at CBHE meeting
Timeline – Phase 2	
June/July	Focus groups with public institution leaders (CFOs, presidents/chancellors)
Mid-July	Focus group feedback presented to Review Team
Mid-July	Revised models provided to Review Team, presidents/chancellors, and CFOs
July 24	Revised models discussed with Commissioner's Advisory Group
July 31	Revised models discussed at CBHE retreat
Early August	Any changes that result from CBHE retreat conversation shared with Review Team, presidents/chancellors, and CFOs
August 28	Final model included in September CBHE board book as a decision item FY 2021 CBHE budget recommendations include weighted per-student funding, broken out by institution
September 11	CBHE votes on model and budget request

A Review of Per-Student Funding at Missouri Public Institutions

Prepared for
Missouri Department of Higher Education

May 28, 2019

A. Introduction

For many years, Missouri has allocated a fixed share of the state appropriation of funds for higher education (separately for two- and four-year institutions) to the institutions. (Multi-campus systems (University of Missouri, St. Louis Community College, Metropolitan Community College and Ozark Technical Community College) received a single allocation that they then distribute for use at their constituent campuses.) This allocation strategy has meant that governing boards shared proportionately in increases (or decreases) in year-to-year state appropriations; if appropriations increased 3%, each governing board got a 3% increase to their prior year's base allocation. The basis for the allocation was established many years ago. The approach was reviewed in 2013 as a result of the introduction of SB 437, but that review did not result in substantive changes.

While this method of distributing state resources gives the appearance of being "equitable," it fails to account for some key factors that actually render it deeply flawed particularly changing rates of enrollment growth, changing program mix (and changing program enrollments), and changes in the demographic characteristics of enrolled students. Failure to account for these factors means that the state appropriations to institutions increasingly fail to recognize real institutional cost differences that arise from: serving more vs. fewer students; offering programs that are costlier to staff, equip, recruit for, etc.; and provide student services and academic supports appropriate to the specific needs of the actual enrolled student bodies according to characteristics known to influence their success rates (e.g., adults, first-generation, low-income). As a result, the institutions recognize that funding has become "inequitable" and, through their associations, are taking steps to remediate the inequities that have crept into the allocation model. The Council on Public Higher Education (COPHE) approach

- Calculates a weighted FTE student number using weights for credit hours in different disciplines and at different course levels (using weights derived from the Delaware Cost Study).
- Determines the appropriation per weighted FTE student.
- Distributes (only) new/additional funds to those institutions that are least well-funded (which are defined as being more than half a standard deviation below the group average).

This approach does not redistribute any portion of an institution's prior year's funding.

The Missouri Community College Association (MCCA) model:

- Puts 5% of the total appropriation in a reallocation pool (regardless of the change in appropriation levels from the prior year).
- Distributes this pool on the basis of FTE enrollments (exempting institutions having enrollments of fewer than 1,500 FTE from the need to contribute to the pool).

Unlike the COPHE model, the MCCA model is implemented regardless of whether or not there are new funds to be allocated. Unlike the MCCA model, the COPHE model recognizes the different costs of enrollments in different disciplines. Both, in their own way, attempt to deal with a generally recognized problem – past approaches to resource allocation have led to the inequitable results. Both yield only small changes to the status quo – the COPHE model because it only distributes new money, and the MCCA model because it redistributes less than 5% of the overall appropriation.

Against this backdrop, the Missouri Department of Higher Education (DHE) asked the National Center for Higher Education Management Systems (NCHEMS) to undertake a study to:

- Calculate the extent of funding inequities (if any).
- Assess approaches to per-student funding utilized in other states.
- Recommend an approach to allocating funds appropriated by the legislature for purposes of reducing inequities.
- Suggest an implementation strategy.

This document presents the results of that study.

B. State Appropriations and Per-Student Funding Adjustments in Context

Equity in per-student funding is not synonymous with equal funding (or consistent annual shares of an overall appropriation). Equity is a function of the extent to which each institution is funded to the same level of adequacy where adequacy is determined by sufficiency of funds to carry out the institution's mission. Mission, in turn, is defined in terms of:

- Discipline and level of program offerings.
- Characteristics of students served.
- Special mission assignments – for example, land grant mission with the associated expectations.

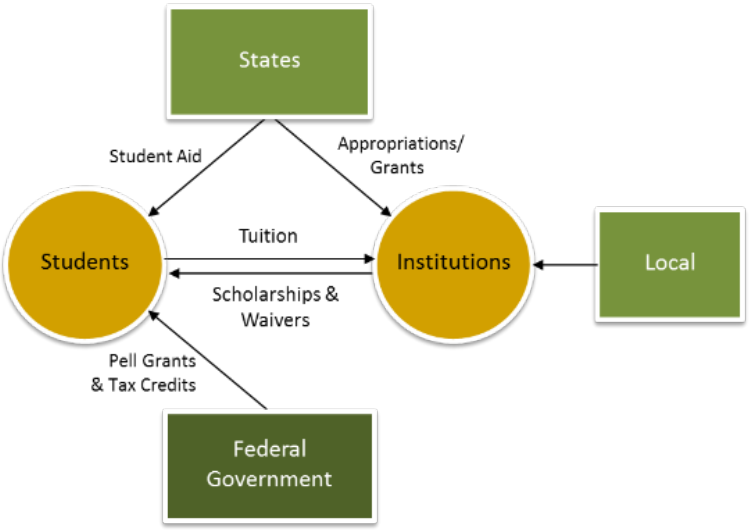
There is broad, general agreement on the ways in which discipline and level of offerings ultimately affect funding equity. There are some variations in alternative approaches but, in the overall scheme of things, those variations tend to be minor. The far bigger issue is how to incorporate service to different student bodies into the calculation. The characteristics that are sometimes considered are:

- Socio-economic status (Pell recipients)
- Race/ethnicity
- Residence – in-state/out-of-state
- Academic preparation
- Graduate vs. undergraduate

All but residency and level are factors in determining "at-risk" status.

The role of state funding in determining appropriate per-student institutional funding is further complicated by the fact that the state is not the only source of funding for the institutions of higher education, as depicted in Figure 1.

Figure 1. The Flow of Funds



For Missouri's universities the primary additional source of funds that can be used to support general operations is student tuition revenues. The community colleges derive revenue not only from tuition, but from local tax levies as well. The complication arises from the reality that universities have very different abilities to raise tuition revenues (some institutions can charge higher rates and attract more out-of-state students), and some community colleges have a much larger tax base than others. It is also true that some institutions can raise substantial amounts of money from donors and philanthropic sources. However, such funds are almost always designated for specific purposes and are legitimately left out of per-student funding calculations.

This raises a question about whether to make the judgment about appropriate per-student funding based solely on the allocation of state funds or to base the judgement on the basis of all general fund revenues. The analyses presented in this report considers only state appropriations.

Data about variations in each of these funding streams are presented later in this report.

C. Project Activities

In order to address the question raised by the DHE, NCHEMS pursued two different approaches to obtaining relevant information.

- A survey of SHEEO agencies was circulated to ascertain practices in other states regarding approaches to ensuring appropriate per-student funding and to remedy instances of inequity once identified. The survey elicited only a handful of responses. The survey questions and states' responses are incorporated in this report as Appendix A.
- A calculation of appropriations per weighted FTE generally similar to the COPHE approach with two significant differences.
    - The weights used were developed by NCHEMS rather than those derived from the Delaware Cost Study, and
    - The methodology was applied to community colleges as well as the universities.

D. Findings

1. From the SHEEO survey – and from NCHEMS' knowledge of state financing practices – the following information was gleaned.

    a. Most states do not have a working definition of "equity" that they apply to appropriations to institutions. Most states utilize the base-plus approach that Missouri has historically employed – each institution gets its proportional share of any increases or decreases in state appropriations.

    b. States that seek equity in funding do so in one of two ways. Some states use formulas to allocate state appropriations, with the formula generating the level of funding each institution should receive based on an agreed upon set of factors. Should the appropriation fall short of the calculated amount, equity is maintained by each institution absorbing a proportionate share of the shortfall. Other states use institutional "peers" to ascertain appropriate funding levels for each institution (or class of institution). This approach frequently identifies gaps between an institution's actual funding and the funding level of its peer group.

    c. Where inequities are identified, the common approach is to either

        - Create a "reallocation pool" that is distributed to institutions below the targeted amount, or
        - To allocate all new money to those institutions below the target level.

    The target level is often defined to be either 10% or half a standard deviation below the comparison group average. The allocation of the reallocation pool is typically done in one of two ways:

        - As a pro rata share of the collective inequity shortfall, or
        - By bringing the institution with the greatest deficiency to the level of the institution with the second greatest deficiency, then bringing these two to the level of the third, etc.

2. From review of the COPHE model and NCHEMS analyses of data for the universities, the following information has been developed. Table 1 shows the appropriation amount per weighted FTE using Delaware Cost Study weights. These are the data developed by COPHE.

Table 1. Funding per Weighted FTE Using Delaware Cost Study Weights

	State Appropriations	WFTE	Current $$ Per WFTE
Harris Stowe	9,711,260	2,640	$3,679
Truman	40,660,322	12,102	$3,360
Lincoln	16,579,873	5,073	$3,268
Missouri Western	21,246,755	9,052	$2,347
Northwest	30,186,117	12,971	$2,327
SEMO	44,879,469	21,855	$2,054
Missouri Southern	24,031,242	11,930	$2,014
UCM	54,338,357	27,766	$1,957
Missouri State	84,001,060	45,170	$1,860
UM System	386,022,556	210,332	$1,835
Total	**711,657,011**	**358,351**	**$1,986**

Table 2 presents data using a generally similar approach as used by COPHE with two notable differences:

- The weighting factors are those developed by NCHEMS from cost studies reported in a SHEEO study entitled *Four-State Cost Study, Updated Version – September 2010*. These weights, modified slightly by the Nevada System of Higher Education, are presented in Appendix B.
- FTES for professional and doctoral credits are based on 24 credits per FTE.

Table 2. Funding per Weighted FTE Using NCHEMS Weights

	State Appropriations	Weighted FTE	$/Weighted FTE
Lincoln	$16,579,873	3,712	$4,466
Harris-Stowe	$9,711,260	2,363	$4,109
Truman	$40,660,322	11,960	$3,400
Western	$21,246,755	7,301	$2,910
Missouri Southern	$24,031,242	8,620	$2,788
Northwest	$30,186,117	12,052	$2,504
SEMO	$44,879,469	18,641	$2,408
UM System	$386,022,556	168,626	$2,289
Missouri State	$84,001,060	42,117	$1,994
UCM	$54,338,357	27,659	$1,965
Total	**$711,657,011**	**303,051**	**$2,348**

Using the convention that institutions whose appropriations are more than 10% below the group median are determined to be inequitably underfunded:

- Using the COPHE Model

Median -10%	1,972
UCM	1,957
Missouri State	1,860
UM System	1,835

- Using the NCHEMS model/weights

Median -10%	2,381
UM System	2,289
Missouri State	1,994
UCM	1,965

Both methods place the same three institutions in the "inequitably underfunded" category. The amounts required to bring these institutions to the median minus 10% limit are:

- Using the COPHE model

	$/FTE	Weighted FTE	Total
UCM	$15	27,766	$416,490
Missouri State	$112	45,170	$5,059,040
UM System	$137	210,332	$28,815,484
			$34,291,014

- Using the NCHEMS weights

	$/FTE	Weighted FTE	Total
UM System	$92	168,626	$15,513,592
Missouri State	$387	42,117	$16,299,279
UCM	$416	27,659	$11,506,114
			$47,326,963

In all cases where these calculations are made they are recurring—not one-time—costs.

3. Variations to the calculations – including only in-state students

Some members of the Advisory Committee have expressed the point of view that state resources should be used only to support in-state students – that only weighted FTES generated by in-state students be used as the divisor in the dollars per weighted FTE calculation. Different states have different policies in this regard. Some states – North Dakota is a prime example – encourage out-of-state students to enroll in their public universities (and hopefully stay in the state after graduation) as a strategy for replacing a rapidly aging workforce. As a consequence, they include all students in their calculations. Other states – typically those like Colorado that have strong economies and historically have had little trouble attracting out-of-staters as either workers or students – distribute their state funds on the basis of in-state students only.

To see the impact of restricting state appropriations to in-state students only, NCHEMS calculated the distribution based on this restriction. Because the data used in the calculation require considerable refinement before application in an actual allocation process, the description provided below should be treated as illustrative of the process and yielding only ballpark estimates. The percentages of in-state students used in the calculation are for first-time students only, and therefore assume that:

- Graduate students have the same in-state enrollment rates as undergraduates,
- Out-of-state students are retained at the same rate as in-staters,
- Out-of-state students and in-state students enroll in the same mix of courses by discipline and level.

All of these assumptions allow errors to creep into the calculation – errors that can be overcome by collection of detailed data from the institutions (that was beyond the scope of this project).

Using the NCHEMS weights at the basis of this calculation for illustrative purposes yields the following (quite different results).

Table 3. Calculation of Distribution of State Funds on the Basis of IN-State FTE Only

	% in-State	Total Weighted FTE	In-State	Appropriations	Appropriations/In-state FTE
Lincoln	66.8	3,712	2,480	16,579,873	6,685
Harris-Stowe	67.2	2,363	1,588	9,711,260	6,115
Truman	82.9	11,960	9,915	40,660,322	4,101
Northwest	68.3	12,052	8,232	30,186,117	3,667
Southern	76.5	8,620	6,594	24,031,242	3,644
UM System	69.0	168,626	116,352	386,022,556	3,318
Western	88.6	7,301	6,469	21,246,755	3,284
SEMO	77.5	18,641	14,423	44,879,469	3,112
Missouri State	88.1	42,117	37,105	84,001,060	2,263
UCM	88.7	27,659	24,534	54,338,357	2,215

Again, using the median less 10% as the criterion:

Median less 10% = $3,133

	$/FTE	FTE	Total
SEMO	$22	14,423	$317,306
Missouri State	$870	37,105	$32,281,350
UCM	$918	24,534	$22,522,212
			55,120,868

This calculation yields a total underfunded amount (presuming data accuracy – previously indicated as unlikely) that is in the same general ballpark as the calculation distributing the funds on the basis of total weighted FTE. However, the institutions identified as being inequitably funded are somewhat different and the amounts of underfunding are very different.

4. Variations in the calculation – serving at-risk students

There was also a suggestion that additional costs of serving at-risk students be factored into the allocation calculation. "At-risk" can be defined in many ways, but two common ways are by low-income (Pell recipient) status and by underrepresented minority (URM) status – the percentages of undergraduates in each category for each institution are shown in Table 4.

Table 4. Percentages of "At-Risk" Students Enrolled in Each University

	% Undergraduates with Pell	% Full Time Freshmen URM
Lincoln	56	49.2
Harris-Stowe	73	82.5
Truman	19	6.4
Western	36	11.3
Southern	44	16.5
Northwest	32	9.1
SEMO	31	10.5
UM System	22	13.5
Missouri State	29	8.2
UCM	32	13.0

Assuming a 50% "bonus" for Pell recipients – using that metric for illustrative purposes, the calculations would be as shown in Table 5, again using the NCHEMS weights as the basis for calculating weighted FTE.

Table 5. $/FTE Weighting Undergraduate FTE by 50% of Pell

	UG FTE	50% Pell	Total UG	Grad	Total Weighted FTE	Appropriations	$/FTE
Lincoln	3,448	965	4,413	264	4,677	$16,579,873	$3,545
Truman	10,617	1,009	11,625	1,343	12,968	$40,660,322	$3,135
Harris-Stowe	2,563	935	3,498	--	3,498	$9,711,260	$2,776
Western	6,676	1,202	7,878	625	8,503	$21,246,755	$2,499
Southern	8,357	1,839	10,096	263	10,359	$24,031,242	$2,320
Northwest	9,140	1,462	10,602	2,912	13,514	$30,186,117	$2,234
UM System	85,108	9,362	94,470	8,3517	177,987	$386,022,556	$2,169
SEMO	14,120	2,189	16,309	4,521	20,830	$44,879,879	$2,154
UCM	15,026	2,404	17,430	12,633	30,063	$54,338,357	$1,807
Missouri State	32,745	4,748	37,493	9,372	46,865	$84,001,060	$1,792

Including Pell in the way described (a bonus of 50% Pell applied to UG Weighted FTE) and using the median less 10% as the cut-off point yields the following:

Median – 10% = $2,049

	$/FTE	# of FTE	Total
UCM	$242	30,063	$7,275,246
Missouri State	$257	46,865	$12,044,305
			$19,319,551

Again, this set of calculations should be viewed as illustrative only. Application in the actual allocation process would require collection of data regarding credit hours actually completed by Pell recipients categorized by discipline and level.

It should be noted that the series of calculations could be replicated using percent URM rather than percent Pell as the "bonus" factor. The magnitude of the weight applied (in this case, 50%) is illustrative only and can be changed as a policy choice. In addition, the calculations could be used in tandem – for example, applied to only in-state students and then given bonus weights for at-risk populations within that subset. Exploring such combinations:

- Is beyond the scope of this project, and
- Would require considerable additional data collection from institutions.

Advisory Group members also asked whether funds from sources other than state coffers should be considered in the allocation of state appropriations. Table 6 shows net tuition revenues, state appropriations, and tuition as a percent of the combined revenue streams. Revenues from philanthropy and the federal government are excluded because the vast majority of these funds come with strings attached that preclude expenditures for general operations.

Table 6. General Operating Funds by Source

	State Appropriations	Tuition & Fees	Total	State Share
Harris-Stowe	$9,485,264	$4,826,354	$14,311,618	66.3%
Lincoln	$18,063,885	$6,765,232	$24,829,117	72.8%
Southern	$22,772,714	$15,065,409	$37,838,123	60.2%
MO State Springfield	$77,272,629	$125,215,745	$202,488,374	38.2%
Western	$21,020,534	$23,764,111	$44,784,645	46.9%
Northwest	$29,841,859	$40,668,578	$70,510,437	42.3%
SEMO	$44,945,270	$57,042,769	$101,988,039	44.1%
Truman	$40,226,391	$27,001,481	$67,227,872	59.8%
UCM	$53,770,433	$74,447,372	$128,217,805	41.9%
UM System	$396,191,858	$649,348,967	$1,045,540,825	38%

These data reveal extreme variation in the ability of institutions to raise non-state funds from tuition, the primary source of such funds.

5. Calculations for Community Colleges

The situation for community colleges is considerably different than that for universities in several important ways:

- The overall amount of state funding involved is considerably less - $143,571,000 vs. $711,657,000.
- The share of institutional funding for community colleges borne by the state is considerably smaller than that for universities. This is directly attributable to funding the community colleges realize from their local taxing authority; community colleges are local, not state, institutions.
- The MCCA approach to resolving equity issues is based on reallocation of funds using unweighted FTEs as the distribution device. The COPHE approach uses weighted (by factors reflecting discipline and course level) FTE as the basis of distribution of the reallocation pool (which exists only when there is new money).

If one utilizes the same general approach for community colleges as for universities – based on weighted FTEs – to determine the level of "inequity," the results are as shown in Table 7. The weights employed are presented in Appendix C.

Table 7. $/Weighted FTE Using NCHEMS Weights

Institute	State Appropriations	Weighted FTE	Appropriations/Weighted FTE
St. Louis	$44,683,289	26,269	$1,701
Metro	$32,078,050	27,469	$1,168
East Central	$5,445,529	4,851	$1,123
Jefferson	$7,889,089	7,477	$1,055
North Central	$2,673,704	2,880	$928
St. Charles	$8,873,056	9,832	$902
Three Rivers	$5,143,710	6,100	$843
Moberly	$6,078,635	8,264	$736
State Fair	$6,049,422	9,173	$660
Mineral Area	$5,553,079	8,519	$652
Crowder	$5,515,553	8,581	$643
Ozarks	$13,587,399	23,300	$583

Median is $873
Median Less 10% is $786

Based on the same convention that institutions whose funding per weighted FTE is more than 10% below the group median are inequitably funded, institutions falling into this category as shown below.

Table 8. Total Cost of Alleviating Inequities in Community Colleges

College	Per Student Funding Gap	Weighted FTE	$Cost
Moberly	$50	8,264	$413,200
State Fair	$126	9,173	$1,155,798
Mineral Area	$134	8,519	$1,141,546
Crowder	$143	8,581	$1,227,083
Ozarks	$203	23,300	$4,729,900
Total			**$8,667,527**

Not surprisingly, the costs of remediating funding gaps in the community colleges are much lower than is the case for the universities.

The base data for making judgements about incorporating other factors in the community college calculation are presented in Table 9.

Table 9. Data Regarding Adjustment Factors

Institute	% In-State	% Pell	% URM
St. Louis	98.5	35	36.3
Metro	98.4	37	27.4
East Central	99.7	42	3.6
Jefferson	98.7	37	3.0
North Central	97.9	35	5.0
St. Charles	99.6	21	11.1
Three Rivers	96.1	54	12.4
Moberly	95.7	45	10.9
State Fair	95.0	43	10.5
Mineral Area	98.6	33	5.3
Crowder	91.5	37	12.4
Ozarks	99.1	49	8.4

Table 10. Appropriations per Weighted FTE with a 50% Bonus for Pell

	Appropriations	Weighted FTE w/50% Pell Bonus	Appropriations/Weighted FTE
St. Louis	$44,683,289	30,866	$1,447
Metro	$32,078,050	32,550	$986
East Central	$5,445,529	5,870	$928
Jefferson	$7,889,089	8,860	$890
St. Charles	$8,873,056	10,864	$817
North Central	$2,673,704	3,384	$790
Three Rivers	$5,143,710	7,747	$664
Moberly	$6,078,635	10,123	$600
Mineral Area	$5,553,079	9,925	$560
State Fair	$6,049,422	11,145	$543
Crowder	$5,515,553	10,168	$542
Ozarks	$13,587,399	29,009	$468

Median = $727
Median less 10% = $654

Given the data presented in Table 10, it's clear that the factors that are on the table for consideration regarding the universities have less relevance for the colleges. Specifically:

- There are so few out-of-state students enrolled in community colleges that it makes little sense to make a special effort to adjust the allocation model to reflect the presence of those few students.
- The percent Pell amount for 9 of the 12 colleges falls in the narrow band of 35-45%. For consistency of practice, if the decision is made to include an adjustment for Pell enrollment for the universities, then it might be useful to make the adjustment for the community colleges as well, even though the net effect as shown in Table 10 is not likely to make a substantial difference.
- The percent URM percentages are essentially the same for all except the two large metropolitan institutions. The adjustment for them would bring them "back to the pack" a bit but would have no appreciable impact on the funding gap calculations.

Table 11. Cost of Closing Per-Student Funding Gap with Pell Bonus Factored In

	Per-Student Funding Gap	Weighted FTE	Cost
Moberly	$54	10,123	$546,642
Mineral Area	$94	9,925	$932,950
State Fair	$111	11,145	$1,237,095
Crowder	$112	10,168	$1,138,816
Ozarks	$186	29,009	$5,395,674
Total			**$9,251,177**

Incorporating a Pell bonus yields very little difference in the overall costs of remediation. The same five colleges receive the benefits, and the dollar amounts received by each of the five colleges does not very greatly (compare data in Table 8 with Table 11).

The share of community college funding represented by state appropriations is shown in Table 12.

Table 12. State Share of Community College Funding

	State Appropriations	Local Appropriations	Tuition & Fees	Total	State Share
Crowder College	$5,238,406	$3,823,212	$8,240,664	$17,302,282	30.3
East Central	$5,385,014	$7,828,261	$4,215,520	$17,428,795	30.9
Ozarks	$14,741,028	$10,404,209	$19,717,015	$44,862,252	32.9
Jefferson	$9,829,076	$10,553,430	$7,058,116	$27,440,622	35.8
Metro	$31,950,751	$34,145,207	$24,184,015	$90,279,973	35.4
Mineral Area	$5,411,859	$4,294,433	$5,149,669	$14,855,961	36.4
Moberly	$6,915,436	$630,370	$12,914,155	$20,459,961	33.8
St. Louis	$44,756,151	$61,882,980	$24,376,388	$131,015,519	34.2
State Fair	$7,582,683	$3,564,509	$9,127,942	$20,275,134	37.4
Three Rivers	$5,577,681	$2,181,774	$2,457,886	$10,217,341	54.6
North Central	$2,637,366	$349,161	$2,165,382	$5,151,909	51.2
St. Charles	$8,634,564	$17,619,213	$16,184,141	$42,437,918	20.3

6. Dealing with Issues of Scale

In allocation of resources to institutions of very different sizes the question of how to handle issues of scale inevitably arises. All institutions have a minimum set of fixed costs required to "open the doors" regardless of size. Larger institutions can spread these costs over more students, gaining benefits of scale not available to the smaller institutions. The consequences of this reality are that the smaller institutions require higher per student subsidies to remain viable. This is particularly true for the smaller universities where Harris-Stowe and Lincoln require higher per student subsidies than the larger institutions (see Tables 1 & 2).

The community colleges handle this issue by exempting institutions with fewer than 1,500 FTE from the requirement to contribute the 5% of state funding from which the reallocation pool is created. The Universities have no such provision. There are at least two ways that a small University can be inserted into the calculation of funding inequities.

1) In states where the model reallocates funds away from institutions that are "over-funded," overfunding is typically specified as being more than 10% above the group median. For small universities (e.g., those below 2,500 FTE) the cut-off point is raised to 20% above the group median. Since Missouri utilizes only new money to redress funding inequities, this approach will not work in Missouri.

2) Establish a fixed amount allocated to each institution "off the top" before per-student funding calculations are made. This fixed amount will represent a higher proportion of state funding for smaller institutions than the larger ones and will reduce the dollars per FTE used in all other calculations. A scatter plot of Institutional Support + Plant O&M expenditures is presented in Appendix D. Using a "frugal" assessment of "opening-the-door" costs as revealed in these data, and amount of $8,000,000 is suggested as a number that might be applied if DHE decides it appropriate to factor a scale component into the per-student funding calculation. This number is certainly open to further discussion. NCHEMS created a simple model that illustrates an approach to incorporating scale into the distribution of an "equity" pool. A screen shot of that model is shown below as Table 13.

Essentially, the model takes $80,000,000 ($8,000,000 for each of 10 institutions) out of the total state appropriation amount before calculating the average appropriation per weighted FTE across all institutions. Next, it multiplies that figure by each institution's actual weighted FTE, and then adds back in the $8,000,000 "opening the door" cost, to get a total funding level for each institution. That amount is then compared to the actual state appropriation to each institution to determine how far short it is. The model allows for Missouri to adjust the level of the "opening the door" costs as well as to enter whatever amount for the equity pool as is appropriate. In addition, the weighted FTE numbers can be changed to reflect whatever base is chosen. This version uses the NCHEMS-based FTE (see Table 2). It's easily possible to substitute the numbers from Table 1, Table 5, etc. to create alternative bases of distribution.

Table 13. Missouri Equity Funding Model

Fixed Cost per Institution	$8,000,000
Total Fixed Cost Pool	$80,000,000
State Appropriations Less Fixed Cost Pool	$641,657,011

Amount of Equity Pool	$20,000,000

Institution	State Appropriations	Weighted FTE	Institution Calculated Need	Equity Need	Percent of Total Equity Need	Distribution from Equity Pool
Lincoln	$16,579,873	3,712	$15,859,505	$0	0.0%	$0
Harris-Stowe	$9,711,260	2,363	$13,003,235	$3,291,975	11.3%	$2,266,868
Truman	$40,660,322	11,960	$33,323,189	$0	0.0%	$0
Western	$21,246,755	7,301	$23,458,579	$2,211,824	7.6%	$1,523,071
Missouri Souther	$24,031,242	8,620	$26,251,329	$2,220,087	7.6%	$1,528,761
Northwest	$30,186,117	12,052	$33,517,983	$3,331,866	11.5%	$2,294,337
SEMO	$44,879,469	18,641	$47,469,028	$2,589,559	8.9%	$1,783,181
UM System	$386,022,556	168,626	$365,035,796	$0	0.0%	$0
Missouri State	$94,001,060	42,117	$97,175,315	$3,174,255	10.9%	$2,185,805
UCM	$54,338,357	27,659	$66,563,051	$12,224,694	42.1%	$8,417,976
Total	$721,657,011	303,051	$721,657,011	$29,044,260	100.0%	$20,000,000

Calculated Need (Dollars per Weighted FTE)	$2,117

E. The Special Case of State Technical College (State Tech)

State Tech is not a member of either COPHE or MCCA. As a two-year institution, it is not a "university" and therefore isn't grouped with the COPHE institutions. As a state-funded institution without a local tax base, it also doesn't fit neatly into the group of community colleges that make up MCCA's membership. Nevertheless, the same methodology used to calculate appropriations per weighted FTE for the other institutions can be applied to State Tech.

Applying the weights used for community colleges (Appendix C) to State Tech yields a calculated weighted FTE of 5,312. Using the IPEDS reported state appropriation amount of 6,200,005 for

2017 (the year for which credit hour data were reported) yields an appropriation per weighted FTE of $1,167. This number is on the high end when compared to community colleges, but far below the amounts for universities, the more appropriate comparison group given the absence of local tax support. For the universities the cut-off point of median minus 10% is $2,381, yielding a gap of $1,214.

	$/FTE Gap	# of FTE	Total
State Tech	$1,214	5,312	$6,448,768

The calculated gap is approximately equal to the state appropriation amount.

F. The Impact of Increased Appropriations

The 2019 Legislature increased base funding for Universities as follows:

- $10 million for Missouri State.
- $1 million for other Universities except the University of Missouri.

Assuming the weighted FTE numbers stay constant, this infusion of funds would:

- Close the per-student funding gap for UCM and MSU using the COPHE calculation.
- Reduce, but not close, the gap using the NCHEMS model.
- Eliminate the gap for SEMO and reduce the gap for MSU and UCM – if calculations are based on in-state students only.
- Reduce, but not eliminate, the gap for UCM and MSU if a 50% bonus were given for Pell students.

G. Other Issues

Beyond the issues that have been addressed elsewhere in this document, it is important that a few additional points be put on the table.

1) **Data Issues**. As noted earlier, the data used in the calculations are those that were readily available to NCHEMS staff, not the ones that should be used in calculations that directly affect the allocation of resources. Those data will have to be collected from institutions using carefully defined and widely accepted protocols.
2) **Interpreting Results**. Since the data utilized in the calculations are, in several cases, not the data that would be eventually used, the results presented should be viewed as illustrative. They provide ballpark results that give some indication of the consequences of incorporating certain factors. Actual application requires better data and agreement on the calculation methodologies.
3) **Introduction of Factors One by One**. The various factors introduced to modify the weighted FTE numbers were presented one-by-one – in-state/out-of-state, at risk, etc. In actual application, it may be decided that the factors should be applied in combination – for example that the Pell bonus be applied only to in-state students. Such calculations were beyond the scope of this project.

4) **Keeping Per-Student Funding in Context**. It must be remembered that this project focused only on the extent to which base operating funds provided by the state are being distributed equitably to state institutions in ways that attempt to fairly account for differences in mission and student characteristics. The overall fiscal picture for institutions is much more complex, including:

   - Funds from students and local sources.
   - Performance funds.
   - Capital expenditures.

   These funds all matter in ascertaining whether or not institutions have resources adequate to their missions. This is not the question NCHEMS was asked to address.

5) Funds to be Excluded from Per-Student Funding Calculations. Throughout the calculations have been based on total state general fund appropriations to institutions. In reality, there are some "designated" funds that could legitimately be excluded from the calculations, among them:

   - Funds to support extension activities at UM and Lincoln.
   - Any funds designated specifically for research or public service activities at individual institutions.

   Such funds are not student-related funds that should be used in conjunction with any calculations that have funding per weighted FTE at their core.

H. Conclusions & Recommendations

Based on discussions with the Review Group and DHE staff, the analytic results, and NCHEMS' prior experience, the following represents NCHEMS recommendations for the approaches to be used in determining per-student funding for Missouri's pubic colleges and universities.

1) Extension and other designated/restricted funds be removed from the appropriation amounts used as the basis for the calculations.

2) Weighted, rather than unweighted, FTE be used when calculating appropriations per FTE. Either COPHE or NCHEMS weights can be used. We lean towards NCHEMS weights because they are intended for application to community colleges as well as universities, which renders them more useful if DHE elects to adopt a consistent methodology for weighting FTEs for the purpose of calculating per-student funding allocations. (That consistency does not require DHE to use the same rules for accessing the funding pool, just in determining which institutions are underfunded and by how much.) This approach should be used for Universities, State Tech and Community Colleges.

3) Based on discussions with the Task Force and DHE all students (out of state as well as in-state) be used in calculating weighted FTEs.

4) A mechanism for recognizing the additional costs associated with serving at-risk students should be incorporated in per-student funding calculations. One way of doing so was illustrated. Other approaches (or values for calculation coefficients) could be used. This approach should be applied to both 2- and 4-year institutions. The Task Force agreed that

Pell students should be the basis of this calculation and that a 50% weight would be appropriate. NCHEMS concurs with this recommendation.

5) Some means of dealing with scale issues should be incorporated in the calculations for equity funding for the universities. A method that takes a flat amount "off-the-top" for each institution is the preferred method. The dollar value recommended is $8,000,000 per institution. As with the recommendation concerning the weights, Missouri may simplify the calculation by using the same basic approach for both universities and community colleges – but it is especially needed for the universities since the community colleges have a means to account for these costs already in their equity funding formula.

6) The distribution of any funds set aside for reduction of inequities be done on the basis of the proportional share of "underfunding" as shown in Table 13. This is a different approach to distributing any "equity pool" from that illustrated earlier in the paper—funding given to those institutions more than 10% below the median on whatever metric is being used. This measure is based on distance of each institution's funding from the amount it would get if all institutions had the same level of funding per weighted FTE.

Appendices

Appendix A

SHEEO Information Request: Practice Regarding Equity for Institutions in the Allocation of State Resources

SHEEO Information Request
Practice Regarding Equity for Institutions in the Allocation of State Resources
March 25, 2019

SHEEO QUERY:

Dear SHEEO Finance Officers,

The Missouri Department of Higher Education (MDHE) is evaluating and considering changes to their approach to funding their colleges and universities. They are particularly interested in equity-focused approaches to funding their institutions. As part of this effort they would like to review practices in other states regarding equity for institutions in the allocation of state resources.

Specifically, the MDHE is seeking information from state agencies regarding the following questions:

- Does your state have a definition of institutional funding equity?
- What is the definition of institutional funding equity employed in your state? What approach is used to identify instances of institutional inequity, including the measures used for that purpose?
- In the normal appropriation process, how does your state attempt to ensure the equitable distribution of state funds for general operating purposes to institutions?
    - By formula?
    - Special purpose equity funding?
    - Other mechanisms?
    - Are the same approaches used for both 2- and 4-year institutions?
- In cases where those normal processes (still) yield institutional inequities, what approaches to mitigating them are available and used? Specifically, are there special allocations or some other mechanism? How are they phased in?
- Please provide any additional information and/or resources regarding institutional funding equity you feel might be helpful.

Please reply to Gloria Auer (gauer@sheeo.org) and include Jeffrey Barlow (Jeffrey.Barlow@dhe.mo.gov) on your response. Please provide your response by April 8.

QUERY REQUESTED BY: Jeff Barlow, Missouri Department of Higher Education

STATE AGENCY RESPONSES:

Idaho State Board of Education	• Does your state have a definition of institutional funding equity? no
	• What is the definition of institutional funding equity employed in your state? What approach is used to identify instances of institutional inequity, including the measures used for that purpose? n/a
	• In the normal appropriation process, how does your state attempt to ensure the equitable distribution of state funds for general operating purposes to institutions?
	  ○ By formula? Based on weighted credit hours attempted
	  ○ Special purpose equity funding? no
	  ○ Other mechanisms? no
	  ○ Are the same approaches used for both 2- and 4-year institutions? yes
	• In cases where those normal processes (still) yield institutional inequities, what approaches to mitigating them are available and used? Specifically, are there special allocations or some other mechanism? How are they phased in? not at this time
	• Please provide any additional information and/or resources regarding institutional funding equity you feel might be helpful.

Kansas Board of Regents	In response to the query, Kansas would have the following: • Does your state have a definition of institutional funding equity? No, Kansas does not have a definition of institutional funding equity. • What is the definition of institutional funding equity employed in your state? What approach is used to identify instances of institutional inequity, including the measures used for that purpose? The state universities receive their own state appropriations, which are somewhat tailored to their institution and their specific programs the Legislature has decided to support with state investment. Those appropriations have evolved over many decades and are generally not compared to each other except when money is subtracted or added. When applying a cut typically the Legislature or Governor applies it in an across the board fashion. When adding funds, sometimes it is for a specific program at a university, when adding “in general” or “to the base” it is similarly

	The public institutions that are coordinated by the Board of Regents receive their state funding through various appropriations to the Board of Regents' Office: Washburn University (a public municipal university) receives a grant that has evolved over time that does not relate to what other institutions receive. The 19 community and six technical colleges receive funds for credit hours (technical and non-technical) grants that have also been based on historical amounts, but which are evolving now as additional state money is appropriated next year so that the incremental amount will run through a cost model to finance those institutions that have had enrollment growth. • In the normal appropriation process, how does your state attempt to ensure the equitable distribution of state funds for general operating purposes to institutions? ○ By formula? Generally the institutions receive what was provided the year prior, with little change (or in recent years, they've experienced actual reductions) but in the upcoming year it appears there will be "new" money added – which will be applied in slightly different ways, as described above. ○ Special purpose equity funding? No ○ Other mechanisms? N/A ○ Are the same approaches used for both 2- and 4-year institutions? No • In cases where those normal processes (still) yield institutional inequities, what approaches to mitigating them are available and used? Specifically, are there special allocations or some other mechanism? How are they phased in? N/A • Please provide any additional information and/or resources regarding institutional funding equity you feel might be helpful. Funding for institutions hasn't focused on equity – we have more discussions about getting sufficient money.
University of Maine System	The University of Maine System recently implemented a new allocation model - the first substantial change to our model in more than 50 years. Because we had a static formula for decades, you can imagine that our allocations were way out of balance for a 7 university system with changes in mission and enrollment - yet no corresponding change to how we allocate resources. I led an 18 month process across the System and we were able to reach consensus (a pretty major achievement) from each of our campuses and Presidents - plus our full Board of Trustees. I'm more than happy to chat by phone or video at some point if you are interested in how we approached the process.

Michigan Association of State Universities	Please see the responses below from Michigan (on behalf of the state's 15 public universities).
	• Does your state have a definition of institutional funding equity? No
	• What is the definition of institutional funding equity employed in your state? What approach is used to identify instances of institutional inequity, including the measures used for that purpose? N/A
	• In the normal appropriation process, how does your state attempt to ensure the equitable distribution of state funds for general operating purposes to institutions?
	  ○ By formula? Yes, a 7-metric funding formula has been in place for the past 8 years. However, with as new Gubernatorial administration in place, the formula has been put on hold for the FY 2020 budget (it may end up being ultimately included in the budget).
	  ○ Special purpose equity funding?
	  ○ Other mechanisms?
	  ○ Are the same approaches used for both 2- and 4-year institutions? Yes, the state's 28 community colleges have their own consensus-driven state funding formula model.
	• In cases where those normal processes (still) yield institutional inequities, what approaches to mitigating them are available and used? Specifically, are there special allocations or some other mechanism? How are they phased in? There are not other state-driven mechanisms for addressing institutional funding inequities.
	• Please provide any additional information and/or resources regarding institutional funding equity you feel might be helpful. This is a very interesting inquiry. If you compile the responses and/or learn of any interesting approaches being used in other states, I would welcome hearing about them. It's safe to say we have significant and arguably irrational funding equities among the state universities of Michigan, largely borne out of legislatively-directed political favoritism that was very evident in the 1970s and 80s, and may well take years to address.

Ohio Department of Higher Education	• Does your state have a definition of institutional funding equity? No formal definition. • What is the definition of institutional funding equity employed in your state? What approach is used to identify instances of institutional inequity, including the measures used for that purpose? • In the normal appropriation process, how does your state attempt to ensure the equitable distribution of state funds for general operating purposes to institutions? ○ By formula? Ohio does provide additional funding for at-risk students. Specific factors determine which students qualify as at risk: race, financial need, age,

	academic preparation. The weights for at-risk students acknowledge that such students are less likely to be successful, so additional funding is provided for each student that is successful in completing courses and graduating. All institutions get at-risk funding to the degree that they serve eligible students. ○ Special purpose equity funding? Two universities are provided supplemental funding: Central State University is a historically black college, and Shawnee State University serves a relatively high at-risk population in Appalachia. These two institutions have the most unique, under-served populations, and the lowest enrollments of Ohio's universities. Among other purposes, the supplement is intended to help with access and keeping tuition lower for the students attending these institutions. ○ Other mechanisms? ○ Are the same approaches used for both 2- and 4-year institutions? Formula funding for at-risk students is provided in both sectors. There are supplements in the two year sector similar to those provided to Central State and Shawnee State. • In cases where those normal processes (still) yield institutional inequities, what approaches to mitigating them are available and used? Specifically, are there special allocations or some other mechanism? How are they phased in? • Please provide any additional information and/or resources regarding institutional funding equity you feel might be helpful. Information on at-risk funding from SSI Handbooks: https://www.ohiohighered.org/content/fy2018fy2019_operating_budget
Oklahoma State Regents for Higher Education	• Does your state have a definition of institutional funding equity? Institutional funding equity was included as part of the Performance Funding Formula adopted by the Oklahoma State Regents for Higher Education in 2012. • What is the definition of institutional funding equity employed in your state? What approach is used to identify instances of institutional inequity, including the measures used for that purpose? The Oklahoma State Regents for Higher Education consider equitable funding to be when a public higher education institution's state appropriation allocation per student FTE is within one stand deviation of the mean of the system's or their tier peers (research, regional four year, or two-year). • In the normal appropriation process, how does your state attempt to ensure the equitable distribution of state funds for general operating purposes to institutions? • By formula? –

	○ Any additional funds, over and above the prior year's base amounts, appropriated from the legislature are allocated through the Performance Funding Formula that was adopted by the State Regents in 2012. • Special purpose equity funding? ○ Specific part of the funding formula includes 10% of the total Performance Funding Formula allocation to be provided to institutions eligible to receive base equity adjustments (below one standard deviation per student FTE). • Other mechanisms? ○ No. • Are the same approaches used for both 2- and 4-year institutions? ○ All institutions use the same formula and calculations. • In cases where those normal processes (still) yield institutional inequities, what approaches to mitigating them are available and used? Specifically, are there special allocations or some other mechanism? How are they phased in? Institutions with appropriation allocation per student FTE below one standard deviation of the mean receive full credit for all performance scores for purposes of Performance Funding Formula allocation calculations.
Tennessee Higher Education Commission	• Does your state have a definition of institutional funding equity? Yes. The same statute that requires us to implement an outcomes-based funding formula model also requires the model to "ensure the fair and equitable distribution and use of public funds among state institutions of higher education" (Tenn. Code Annotated §49-7-202(f)(1)). The outcomes-based funding formula model calculates what each institution should receive from the state; in years in which we don't receive full funding, each institution receives the same *percentage* of their formula calculation. In other words, if the state appropriates 95 percent of our overall formula calculation, each institution will receive 95 percent of what the formula calculated they should receive. • What is the definition of institutional funding equity employed in your state? What approach is used to identify instances of institutional inequity, including the measures used for that purpose? See above. No other metric is used to define institutional inequity. • In the normal appropriation process, how does your state attempt to ensure the equitable distribution of state funds for general operating purposes to institutions? ○ By formula? By the outcomes-based funding formula model, with no hold harmless or stop-loss involved. ○ Special purpose equity funding?

	○ Other mechanisms? ○ Are the same approaches used for both 2- and 4-year institutions? Yes. • In cases where those normal processes (still) yield institutional inequities, what approaches to mitigating them are available and used? Specifically, are there special allocations or some other mechanism? How are they phased in? Since our normal process was set by law in 2010, we've not had a situation where we've had to remedy institutional inequities. However, to transition to the normal process—i.e., transitioning from an enrollment-based model to an outcomes-based model—we actually transitioned from a model that wasn't always followed by the General Assembly; in effect, a hold harmless was employed nearly every year. This led to institutional inequities as determined by the funding model at the time. For example, one institution would receive 105 percent of their formula calculation while another would receive 70 percent. Since the outcomes-based funding law stipulated that each institution must be funded equitably, we had to remedy prior hold harmless actions; in other words, we had to phase-out the hold harmless. We did this over three years; the state provided non-recurring funding to institutions that had historically been "over-funded" to compensate for their recurring loss and to help ease them to their new normal. • Please provide any additional information and/or resources regarding institutional funding equity you feel might be helpful. Some institutions do approach us saying that they are inequitably funded because their appropriation per FTE is lower than other institutions. Although we recognize that this is one way to measure inequity, it is not the approach Tennessee chose to take; we don't fund based on enrollment, so we do not measure inequity based on it, either. (Notably, the two institutions that stand out as having approached us about this concern have seen their relative appropriation per FTE increase substantially due independently to growths in outcomes.)
State Council of Higher Education for Virginia	Virginia does not have a definition nor a policy regarding funding equity. As a matter of fact, Virginia is looking into this issue too. It will be greatly appreciated if you can share the survey results with us.

Appendix B

NSHE Course Taxonomy – University Weights by Discipline Clusters
Lower Division, Upper Division, Masters, Doctoral

NSHE Course Taxonomy
University Weights by Discipline Clusters

Discipline Clusters	Lower Division	Upper Division
Liberal Arts, Math, Social Science, Languages, Other	**1.0**	**2.0**
05. Area, Ethnic, Cultural & Gender Studies	1.0	2.0
09. Communication, Journalism and related programs	1.0	2.0
16. Foreign Languages, Literature and Linguistics	1.0	2.0
19. Family and Consumer Sciences/Human Sciences	1.0	2.0
23. English Language & Literature/Letters	1.0	2.0
24. Liberal Arts & Sciences, General Studies and Humanities	1.0	2.0
25. Library Science	1.0	2.0
27. Mathematics & Statistics	1.0	2.0
28. Reserve Officer Training Corps	1.0	2.0
29. Military Technologies	1.0	2.0
30. Multi/Interdisciplinary Studies	1.0	2.0
38. Philosophy & Religious Studies	1.0	2.0
42. Psychology and Applied Psychology	1.0	2.0
45. Social Sciences	1.0	2.0
54. History	1.0	2.0
99. Honors Curriculum and Other	1.0	2.0
Basic Skills Cluster	**1.5**	
32. Basic Skills	1.5	
Business Cluster (*Business, Public Administration*)	1.0	2.0
44. Public Administration & Social Service Professions	1.0	2.0
52. Business Management, Marketing & related support services	1.0	2.0
Education Cluster	1.5	2.0
13. Education	1.5	2.0
Services Cluster *(Personal, Protective, Recreation)*	1.5	2.0
31. Parks, Recreation, Leisure & Fitness Studies	1.5	2.0
36. Leisure and Recreational Activities	1.5	2.0
12. Personal & Culinary Services	1.5	2.0
43. Security and Protective Services	1.5	2.0
Visual and Performing Arts Cluster	1.5	2.5
50. Visual & Performing Arts	1.5	2.5
Trades/Tech Cluster *(Construction, Mechanic Tech, Precision Productior*	4.0	4.5
46. Construction Trades	4.0	4.5
47. Mechanic Repair Technologies/Technicians	4.0	4.5
48. Precision Production	4.0	4.5
49. Transportation & Materials Moving	4.0	4.5
Sciences Cluster *(Agriculture, Computer, Biology, Physical)*	2.0	3.0
01. Agricultural, Agriculture Operations & related sciences	2.0	3.0
03. Natural Resources & Conservation	2.0	3.0
11. Computer & Information Sciences & Support Services	2.0	3.0
26. Biological & Biomedical Sciences	2.0	3.0
40. Physical Sciences	2.0	3.0
Law Cluster	2.0	2.0
22. Legal Professions and Studies	2.0	2.0
Engineering/Architecture Cluster	2.0	3.0
04. Architecture	2.0	3.0
14. Engineering	2.0	3.0
15. Engineering Technologies/Technicians	2.0	3.0
Health Cluster	2.0	2.0
51. Nursing, Allied Health, Health Professions	2.0	2.0

Appendix C

NSHE Course Taxonomy – University Weights by Discipline Clusters

Lower Division, Upper Division

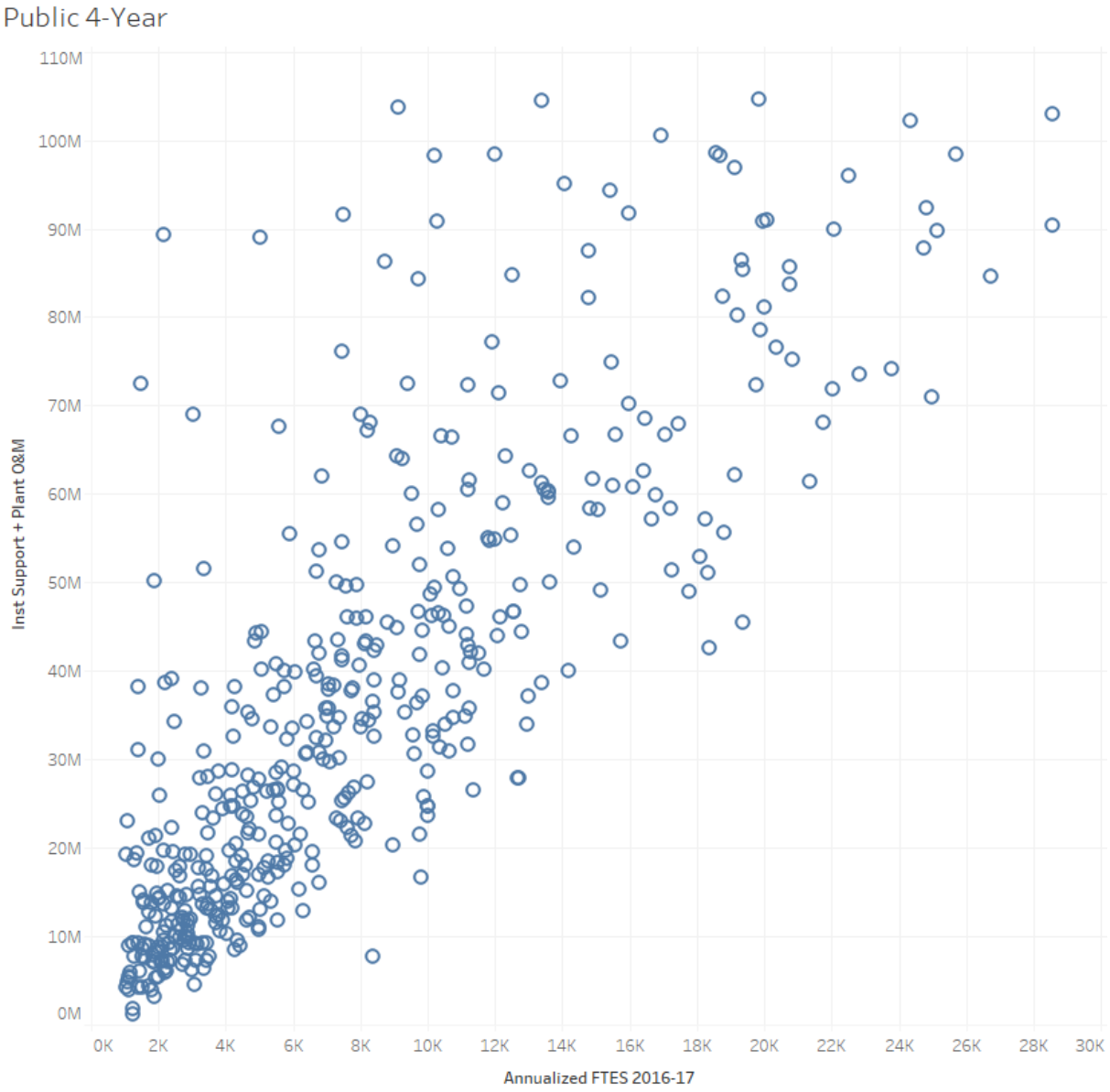
NSHE Course Taxonomy
University Weights by Discipline Clusters

Discipline Clusters	Lower Division	Upper Division	Masters	Doctoral
Liberal Arts, Math, Social Science, Languages, Other	**1.0**	**2.2**	**4.4**	**5.5**
05. Area, Ethnic, Cultural & Gender Studies	1.0	2.2	4.4	5.5
09. Communication, Journalism and related programs	1.0	2.2	4.4	5.5
16. Foreign Languages, Literature and Linguistics	1.0	2.2	4.4	5.5
19. Family and Consumer Sciences/Human Sciences	1.0	2.2	4.4	5.5
23. English Language & Literature/Letters	1.0	2.2	4.4	5.5
24. Liberal Arts & Sciences, General Studies and Humanities	1.0	2.2	4.4	5.5
25. Library Science	1.0	2.2	4.4	5.5
27. Mathematics & Statistics	1.0	2.2	4.4	5.5
28. Reserve Officer Training Corps	1.0	2.2	4.4	5.5
29. Military Technologies	1.0	2.2	4.4	5.5
30. Multi/Interdisciplinary Studies	1.0	2.2	4.4	5.5
38. Philosophy & Religious Studies	1.0	2.2	4.4	5.5
42. Psychology and Applied Psychology	1.0	2.2	4.4	5.5
45. Social Sciences	1.0	2.2	4.4	5.5
54. History	1.0	2.2	4.4	5.5
99. Honors Curriculum and Other	1.0	2.2	4.4	5.5
Basic Skills Cluster	**1.5**			
32. Basic Skills	1.5			
Business Cluster (*Business, Public Administration*)	1.0	2.2	4.4	6.6
44. Public Administration & Social Service Professions	1.0	2.2	4.4	6.6
52. Business Management, Marketing & related support services	1.0	2.2	4.4	6.6
Education Cluster	1.5	2.2	2.75	5.5
13. Education	1.5	2.2	2.75	5.5
Services Cluster *(Personal, Protective, Recreation)*	1.5	2.2	3.3	4.4
31. Parks, Recreation, Leisure & Fitness Studies	1.5	2.2	3.3	4.4
12. Personal & Culinary Services	1.5	2.2	3.3	4.4
43. Security and Protective Services	1.5	2.2	3.3	4.4
Visual and Performing Arts Cluster	1.5	2.75	5.5	5.5
50. Visual & Performing Arts	1.5	2.75	5.5	5.5
Trades/Tech Cluster *(Construction, Mechanic Tech, Precision Productior*	2.0	2.75		
46. Construction Trades	2.0	2.75		
47. Mechanic Repair Technologies/Technicians	2.0	2.75		
48. Precision Production	2.0	2.75		
49. Transportation & Materials Moving	2.0	2.75		
Sciences Cluster *(Agriculture, Computer, Biology, Physical)*	2.0	3.3	5.5	8.8
01. Agricultural, Agriculture Operations & related sciences	2.0	3.3	5.5	8.8
03. Natural Resources & Conservation	2.0	3.3	5.5	8.8
11. Computer & Information Sciences & Support Services	2.0	3.3	5.5	8.8
26. Biological & Biomedical Sciences	2.0	3.3	5.5	8.8
40. Physical Sciences	2.0	3.3	5.5	8.8
Law Cluster	2.0	2.2	4.4	4.4
22. Legal Professions and Studies	2.0	2.2	4.4	4.4
Engineering/Architecture Cluster	2.0	3.3	5.5	8.8
04. Architecture	2.0	3.3	5.5	8.8
14. Engineering	2.0	3.3	5.5	8.8
15. Engineering Technologies/Technicians	2.0	3.3	5.5	8.8
Health Cluster	2.0	2.2	5.5	6.6
51. Nursing, Allied Health, Health Professions	2.0	2.2	5.5	6.6

Appendix D

Institutional Support + Plant O&M

Institutional Support & Plant O&M



Public 2-Year