

UNIVERSITY OF MAINE SYSTEM

APPROPRIATION ALLOCATION MODEL

The Allocation section of the final Unified Budget proposal – Recommendation #2 – recommends that the UMS transition to a new funding model that recognizes costs in the distribution of State appropriation. This recommendation was adopted by the UMS Board of Trustees in September of 2016. The following team was formed to research and draft such a model.

Team Members

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Goal

To develop a State appropriation model that distributes new appropriation funds to campuses based on the principle of peer cost comparisons. “Parity” is the key concept of this model - as calculations are performed to determine the percentage that each UMS university is under- or over-funded as compared to the calculated needed State appropriation. The goal is to distribute new appropriation to the universities based on the percentage of their current unmet need. The institution with the highest percentage of unmet need will receive the highest percentage of any new appropriation. Conversely, the institution with the lowest percentage of unmet need will receive the lowest percentage of any new appropriation.

Overview

This is a formula-driven model used to calculate the State appropriation required to support an institution’s Education and General (E&G) operations. This model accounts for the E&G operating costs that are impacted by student enrollment as well as other factors such as the number of employees and the value of asset value at individual campuses.

The foundation of the model is based on comparative peer data. The UMS contracted with the Hanover Research Council LLC to provide a choice of peer institutions for each university. Each UMS university then selected peers for their institution to be used in the allocation model. The model is based on considering three-year rolling cost averages for specific expense categories and applicable measurement factors.

Data Source

The Team initially attempted to use CUPA (College & University Professional Association) data to collect instructional costs at the discipline & faculty level. After further research, however, it became evident that this was not an appropriate source of information as all universities are not required to report to CUPA and, for those that do report, they may not submit data annually and/or they may not submit sufficient detailed data for this analysis. Only one year (the most recent year) of peer data is available from CUPA, thus precluding the application of any multi-year averaging methodology.

The Team also initially worked with the UMS Chief General Services Officer and Sightlines (UMS facilities strategic assessment consultant) to incorporate facilities data in the model by utilizing the

ongoing Sightlines data analysis. Although at first this seemed promising, unfortunately the majority of the Universities' peers selected through the Hanover Peer Selection Process were not clients of Sightlines and, therefore, Sightlines did not have the peer information needed.

The Team agreed that the best solution would be a single, reliable source of data. The source must: a.) provide concise definitions and standards for the collection and categorization of the data, b.) collect data for all our peers, c.) store multiple years of data and, d.) include cost information for the sectors of higher education expenses – referred to as the “Functional Expense Classifications” (see example below).

Thus after further exploration, the Team determined that the most reliable and concise source of data is the National Center for Education Statistics (NCES). NCES is the primary federal entity for collecting and analyzing data related to education in the US. The Center is located within the U.S. Department of Education and the Institute of Education Sciences. NCES fulfills a Congressional mandate to collect, collate, analyze, and report complete statistics on the condition of education and conduct and publish reports. NCES utilizes the Integrated Postsecondary Education Data System (IPEDS) to collect and report data. IPEDS is an interactive tool, thereby allowing UMS to download a host of data for a single or multiple institutions of higher learning. Hanover Research also used IPEDS to prepare the analyses utilized by the campuses to select the most appropriate peers.

Data Collection

Based on the peers selected by each university, a dataset was constructed using IPEDS Human Resources, Financial, and Enrollment data for the 3 most recent fiscal years posted to IPEDS. At the time of this writing, the most recent fiscal years are FY14 (final), FY15 (final) and FY-16 (provisional). Unless noted otherwise in this documentation, the reference to any peer data is in reference to the 3 most recent years. The financial data selected is based on the Functional Expense Classification categories (FEC) identified below:

- Instruction
- Research
- Public Service
- Academic Support
- Student Services
- Institutional & Administrative Support
- Facilities – Operations & Maintenance
- Depreciation & Interest
- Student Financial Aid

Below is a glossary of terms, as defined by IPEDS, which includes definitions for each of the FECs and other data elements utilized in the Model.

Alphabetically Listed

TERM	DEFINITION (IPEDS)	UMS COMMENT
ACADEMIC SUPPORT	A functional expense category that includes <u>expenses</u> of activities and services that support the institution's primary missions of instruction, research, and public service. It includes the retention, preservation, and display of educational materials (for example, libraries, museums, and galleries); organized activities that provide support services to the academic functions of the institution (such as a demonstration school associated with a college of education or veterinary and dental clinics if their primary purpose is to support the instructional program); media such as audiovisual services; academic administration (including academic deans but not department chairpersons); and formally organized and separately budgeted academic personnel development and course and curriculum development expenses. Also included are information technology expenses related to academic support activities; if an institution does not separately budget and expense information technology resources, the costs associated with the three primary programs will be applied to this function and the remainder to institutional support. Institutions include actual or allocated costs for operation and maintenance of plant, interest, and depreciation.	<p>a) Costs for operation and maintenance of plant, interest, and depreciation have been extracted and are reflected separately.</p> <p>b) Academic Support department examples:</p> <ul style="list-style-type: none"> • <i>Academic Affairs</i> • <i>International Programs</i> • <i>Technology Services</i> • <i>Administration/Dean costs for various colleges</i> • <i>Distance Education</i> • <i>Libraries</i>
DEPRECIATION	The allocation or distribution of the cost of <u>capital assets</u> , less any salvage value, to <u>expenses</u> over the estimated useful life of the asset in a systematic and rational manner. Depreciation for the year is the amount of the allocation or distribution for the year involved.	
HEADCOUNT - EMPLOYEES	Fall employee headcount for the most recent 3-years available in IPEDS for each peer institution is utilized in the model. Each employee equals 1 headcount regardless of the scheduled hours of work.	

TERM	DEFINITION (IPEDS)	UMS COMMENT
HEADCOUNT - STUDENTS	Fall student headcount for the most recent 3-years available in IPEDS for each peer institution is utilized in the model. Each student enrolled in a course equals 1 headcount regardless of the credit hour load.	
INSTITUTIONAL GRANTS & SCHOLARSHIPS (Unrestricted Resources)	Institutional scholarships, fellowships & grants funded by the institution and/or individual departments within the institution from resources that are not restricted to any particular purpose.	<ul style="list-style-type: none"> •E&G Institutional Scholarships •E&G Waivers (Native American, Early College, etc.)
INSTITUTIONAL SUPPORT	A functional expense category that includes <u>expenses</u> for the day-to-day operational support of the institution. Includes expenses for general administrative services, central executive-level activities concerned with management and long range planning, legal and fiscal operations, space management, employee personnel and records, logistical services such as purchasing and printing, and public relations and development. Also includes information technology expenses related to institutional support activities. If an institution does not separately budget and expense information technology resources, the IT costs associated with student services and operation and maintenance of plant will also be applied to this function.	<p>a)Costs for operation and maintenance of plant, interest, and depreciation have been extracted and are reflected separately</p> <p>b) Institutional Support departments examples:</p> <ul style="list-style-type: none"> • <i>Business Office/Bursar</i> • <i>Media Services</i> • <i>Institutional Studies</i> • <i>Alumni Relations</i> • <i>President</i> • <i>Shared Services</i> -<i>Human Resources</i> -<i>Procurement</i>
INSTRUCTION	A functional expense category that includes <u>expenses</u> of the colleges, schools, departments, and other instructional divisions of the institution and expenses for departmental research and public service that are not separately budgeted. Includes general academic instruction, occupational and vocational instruction, community education, preparatory and adult basic education, and regular, special, and extension sessions. Also includes expenses for both credit and non-credit activities. Excludes expenses for academic administration where the primary function is administration (e.g., academic deans). Information technology expenses related to instructional activities if the institution separately budgets and expenses information technology resources are included (otherwise these expenses are included in academic support). Institutions include actual or allocated costs for operation and maintenance of plant, interest, and depreciation.	<p>a)Costs for operation and maintenance of plant, interest, and depreciation have been extracted and are reflected separately</p> <p>b) Instruction department examples:</p> <ul style="list-style-type: none"> • <i>Nursing</i> • <i>Writing Center</i> • <i>Continuing Education</i> • <i>Honors</i> • <i>Wildlife Ecology</i> • <i>English</i> • <i>Humanities</i> • <i>Philosophy</i>

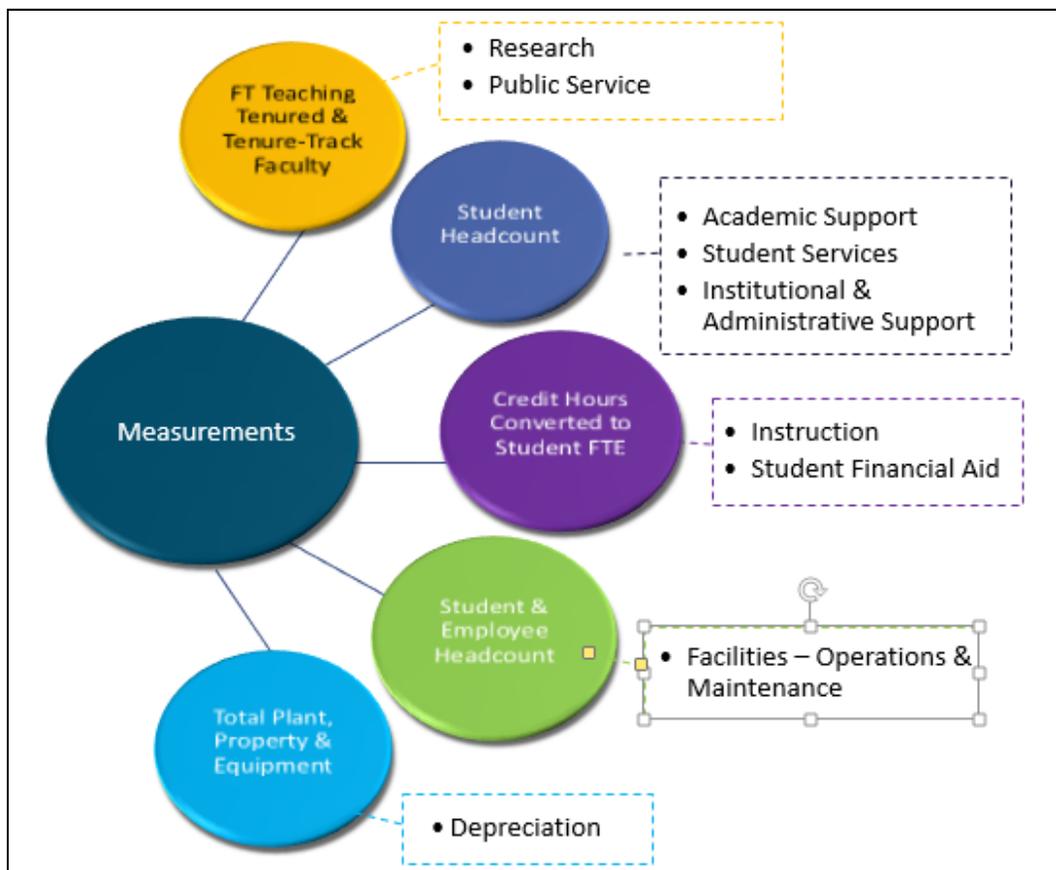
TERM	DEFINITION (IPEDS)	UMS COMMENT
PLANT OPERATION & MAINTENANCE (O&M)	<p>An expense category that includes expenses for operations established to provide service and maintenance related to campus grounds and facilities used for educational and general purposes. Specific expenses include: janitorial and utility services; repairs and ordinary or normal alterations of buildings, furniture, and equipment; care of grounds; maintenance and operation of buildings and other plant facilities; security; earthquake and disaster preparedness; safety; hazardous waste disposal; property, liability, and all other insurance relating to property; space and capital leasing; facility planning and management; and central receiving.</p> <p>This expense does include amounts charged to auxiliary enterprises, hospitals, and independent operations. Also includes information technology expenses related to operation and maintenance of plant activities if the institution separately budgets and expenses information technology resources (otherwise these expenses are included in institutional support).</p>	<p>a) O&M department examples: Custodial Services Utilities Building Maintenance Landscaping Insurance</p>
PLANT, PROPERTY & EQUIPMENT – ENDING BALANCE	<p>Ending balance for plant, property and equipment is the book value at the end of the fiscal year of total assets for plant, property and equipment. Plant, property and equipment include: land and land improvements, infrastructure, buildings, equipment, art and library collections, property obtained under capital leases and construction in progress.</p>	<p>This is a gross value i.e., before the calculation of accumulated depreciation</p>
PUBLIC SERVICE	<p>A functional expense category that includes <u>expenses</u> for activities established primarily to provide non-instructional services beneficial to individuals and groups external to the institution. Examples are conferences, institutes, general advisory service, reference bureaus, and similar services provided to particular sectors of the community. This function includes expenses for community services, cooperative extension services, and public broadcasting services. Also includes information technology expenses related to the public service activities if the institution separately budgets and expenses information technology resources (otherwise these expenses are included in academic support). Institutions include actual or allocated costs for operation and maintenance of plant, interest, and depreciation.</p>	<p>a) Costs for operation and maintenance of plant, interest, and depreciation have been extracted and are reflected separately</p> <p>b) Public Service department examples:</p> <ul style="list-style-type: none"> • <i>Acadian Archives</i> • <i>Conferencing Services</i> • <i>Margaret Chase Smith Ctr for Public Policy</i> • <i>Center on Aging</i> • <i>Legal Aid Clinic</i> • <i>Cooperative Extension</i>

TERM	DEFINITION (IPEDS)	UMS COMMENT
RESEARCH	<p>A functional expense category that includes <u>expenses</u> for activities specifically organized to produce research outcomes and commissioned by an agency either external to the institution or separately budgeted by an organizational unit within the institution. The category includes institutes and research centers, and individual and project research. This function does not include non-research sponsored programs (e.g., training programs). Also included are information technology expenses related to research activities if the institution separately budgets and expenses information technology resources (otherwise these expenses are included in academic support.) Institutions include actual or allocated costs for operation and maintenance of plant, interest, and depreciation.</p>	<p>a) Costs for operation and maintenance of plant, interest, and depreciation have been extracted and are reflected separately</p> <p>b) Research department examples:</p> <ul style="list-style-type: none"> • <i>Darling Marine Center</i> • <i>Climate Change Institute</i> • <i>Cutler Institute</i> • <i>Office of Research Compliance</i>
STANDARD DEVIATION	<p>A measure of the dispersion of a set of data from its mean. It is calculated as the square root of variance by determining the variation between each data point relative to the mean. If the data points are further from the mean, there is higher deviation within the data set.</p>	<p>The model establishes the upper and lower bounds of the standard deviation at 2.5</p>
STUDENT SERVICES	<p>A functional expense category that includes <u>expenses</u> for admissions, registrar activities, and activities whose primary purpose is to contribute to students emotional and physical well-being and to their intellectual, cultural, and social development outside the context of the formal instructional program. Examples include student activities, cultural events, student newspapers, intramural athletics, student organizations, supplemental instruction outside the normal administration, and student records. Intercollegiate athletics and student health services may also be included except when operated as self-supporting auxiliary enterprises. Also may include information technology expenses related to student service activities if the institution separately budgets and expenses information technology resources (otherwise these expenses are included in institutional support.) Institutions include actual or allocated costs for operation and maintenance of plant, interest, and depreciation.</p>	<p>a) Costs for operation and maintenance of plant, interest, and depreciation have been extracted and are reflected separately b) Student Services department examples:</p> <ul style="list-style-type: none"> • <i>Recruitment & Admissions</i> • <i>Registrar</i> • <i>Career Center</i> • <i>Financial Aid Operations</i> • <i>Athletics</i>

TERM	DEFINITION (IPEDS)	UMS COMMENT
TENURED & TENURE-TRACK TEACHING FACULTY	<p>Teaching Faculty – Faculty whose initial assignments are made for the purpose of conducting instruction, research, or public service as a principal activity or activities. The definition of teaching faculty would exclude personnel who may be considered faculty but whose primary role is administrative such as presidents, provosts, deans, etc.</p> <p>Tenured – Status of a personnel position with respect to permanence of the position.</p> <p>Tenure-Track – Personnel positions that lead to consideration for tenure.</p>	

Measurements

The model incorporates 5 different measurements as illustrated in the chart below.



1. **Full-time, Tenured & Tenure-Track Teaching Faculty** (see IPEDS definitions) – The model utilizes the number of full-time tenured & tenure-track teaching faculty as reported in IPEDS for each peer. This measurement is used in the calculation of the peer average E&G cost per tenured & tenure-track teaching faculty for Research and Public Service. The result of this calculation will then be multiplied by the UMS institution’s most recent 3-year average number of these faculty. Note this is NOT the most recent IPEDS years. To reflect UMS tenure trends, the most recent year of UMS Human Resources information is weighted at a factor of 0.5; 2nd year at 0.3; oldest year at 0.2.
2. **Student Headcount** – Fall student headcount for each peer institution is utilized in the model. Each student enrolled equals 1 headcount regardless of the credit hour load. This measurement is used to calculate the peer average E&G cost per student headcount for Academic Support, Student Services, and Institutional & Administrative Support as these services are used by all students and the scope of that usage may not correlate with the number of credit hours for which they are enrolled. This measurement is also used in combination with employee headcount in the calculation of Facilities Operations & Maintenance costs. The peer E&G cost per headcount is then multiplied by the UMS institution’s most recent 3-year average headcount. Note these are NOT the most recent IPEDS years. To reflect UMS enrollment and employment trends, the most recent year of UMS student enrollment information is weighted at a factor of 0.5; 2nd year at 0.3; oldest year at 0.2.
3. **Credit Hours Converted to Student FTEs** –Annual credit hour IPEDS data for each peer institution are converted to FTEs based on the following:
 - 1 Undergraduate FTE = 30 credit hours 1 Graduate or Law FTE = 18 credit hoursThis measurement is used in the calculation of the peer average E&G cost per FTE for Instruction and Student Financial Aid. The estimated peer E&G cost per FTE is then multiplied by the UMS institution’s most recent 3-year average FTE using the same conversion factors. Note these are NOT the most recent IPEDS years. To recognize the impact of UMS enrollment trends, the most recent year of UMS student enrollment information is weighted at a factor of 0.5; 2nd year at 0.3; oldest year at 0.2.
4. **Employee Headcount** - Fall employee headcount data in IPEDS is used in the Model. Each employee equals 1 headcount regardless of position or scheduled work hours. This measurement is combined with Student Headcount in the calculation of Facilities Operations & Maintenance costs. The estimated peer E&G cost per headcount (student and employee) is then multiplied by the UMS institution’s most recent 3-year average headcount. Note these are NOT the most recent IPEDS years. A UMS institution’s headcount has also been adjusted to reflect physical location of Governance & University Services personnel on each campus. To recognize the impact of UMS employment trends, the most recent year of UMS Human Resources information is weighted at a factor of 0.5; 2nd year at 0.3; oldest year at 0.2.
5. **Total Plant, Property & Equipment (PP&E)** (see IPEDS definition)– The Model uses total PP&E ending values in IPEDS as a metric in the calculation of Depreciation and Interest costs. This measurement is used to determine the value of a UMS institution’s PP&E (numerator) as compared to its peers’ PP&E (denominator). The resulting percentage is then multiplied by the average peer cost for depreciation and interest.

IPEDS Financial Data Adjustments

After the IPEDS data for each peer in each FEC has been extracted, the data is analyzed and organized for use in the Allocation Model. The first step is to express the prior years’ cost information in current values. This is done by applying the Bureau of Labor Statistics CPI percent change for All Urban Consumers to the costs of salaries & wages and the Commonfund Higher Education Price Index (HEPI) to employee benefits and non-compensation costs. HEPI is a recognized inflation index designed specifically to track the main cost drivers in higher education and is a more accurate indicator of changes in costs for colleges and universities than CPI. It measures the average relative level of prices in a fixed basket of goods and services purchased by colleges and universities each year through current fund educational and general expenditures, excluding research.

Next, it is necessary to quantify the amount of variation or disparity for each set of peer data within each FEC through the application of a standard deviation formula. Due to the small number of peers, the allowable upper and lower bounds were established at 2.5 standard deviations of the mean.

Once any data points outside the allowable upper and lower bounds have been eliminated, then the costs per peer, per FEC, per measurement, must be calculated. The model is based on applying an average at each appropriate point. First, the average is calculated for each peer for the 3 year period. Then those averages are averaged to calculate the overall peer average for each FEC. The peer data may be null in certain instances. The following two scenarios address how blank data will be considered in the averaging calculation.

Scenario A: If a peer has no data for any year for Research or Public Service, then the peer is excluded completely in deriving the overall average for that FEC...i.e., the data count in the denominator of the averaging formula is reduced by the number of peers with no data.

Exhibit A – UMA’s Peers

Peer Data		Peer Research Costs (Per FT, Tenured, Tenure-track, Teaching Faculty)			
		FY15	FY14	FY13	Average
IPEDS Data CV	Bluefield State College	35,502	106,242	184,626	
	Dalton State College	-	-	-	
	Lewis-Clark State College	353,953	234,250	216,744	
	Montana State University-Northern	525,128	425,995	417,300	
	Rogers State University	62,981	59,497	45,000	
	University of Hawaii-West Oahu	26,273	92,533	30,228	
	Standard Deviation	199,588	140,903	144,318	
	Upper Bound	666,275	505,344	509,779	
	Lower Bound	(331,663)	(199,171)	(211,813)	
IPEDS Data CV, normalized	Bluefield State College	35,502	106,242	184,626	
	Dalton State College	-	-	-	
	Lewis-Clark State College	353,953	234,250	216,744	
	Montana State University-Northern	525,128	425,995	417,300	
	Rogers State University	62,981	59,497	45,000	
	University of Hawaii-West Oahu	26,273	92,533	30,228	156,458
Average Per FT Tenured, Tenure- track Teaching Faculty	Bluefield State College	\$ 623	\$ 1,832	\$ 2,978	\$ 1,811
	Dalton State College	\$ -	\$ -	\$ -	\$ -
	Lewis-Clark State College	\$ 2,809	\$ 2,092	\$ 1,988	\$ 2,296
	Montana State University-Northern	\$ 9,725	\$ 7,745	\$ 7,874	\$ 8,448
	Rogers State University	\$ 969	\$ 850	\$ 740	\$ 853
	University of Hawaii-West Oahu	\$ 411	\$ 1,814	\$ 687	\$ 971
					\$ 2,876

Excluded from Avg.

Denominator = 5

Scenario B: If a peer has data in at least one year of a FEC, then the data count in the denominator of the averaging formula will be 3 for that peer. Because the data indicates that the peer has/had some Research and/or Public Service activity, the blank cells are considered zero.

Exhibit B – UMA’s Peers

Peer Data		Peer Research Costs (Per FT, Tenured, Tenure-track, Teaching Faculty)			
		FY15	FY14	FY13	Average
IPEDS Data CV	Bluefield State College	35,502	106,242	184,626	
	Rogers State University	62,981	59,497	-	
	Lewis-Clark State College	353,953	234,250	216,744	
	Montana State University-Northern	525,128	425,995	417,300	
	Rogers State University	62,981	59,497	45,000	
	University of Hawaii-West Oahu	26,273	92,533	30,228	
Standard Deviation		192,025	131,565	144,318	
Upper Bound		657,867	491,914	509,779	
Lower Bound		(302,261)	(165,909)	(211,813)	
IPEDS Data CV, normalized	Bluefield State College	35,502	106,242	184,626	
	Rogers State University	62,981	59,497	-	
	Lewis-Clark State College	353,953	234,250	216,744	
	Montana State University-Northern	525,128	425,995	417,300	
	Rogers State University	62,981	59,497	45,000	
	University of Hawaii-West Oahu	26,273	92,533	30,228	163,263
Average Per FT Tenured, Tenure- track Teaching Faculty	Bluefield State College	\$ 623	\$ 1,832	\$ 2,978	\$ 1,811
	Rogers State University	\$ 969	\$ 850	\$ -	\$ 606
	Lewis-Clark State College	\$ 2,809	\$ 2,092	\$ 1,988	\$ 2,296
	Montana State University-Northern	\$ 9,725	\$ 7,745	\$ 7,874	\$ 8,448
	Rogers State University	\$ 969	\$ 850	\$ 740	\$ 853
	University of Hawaii-West Oahu	\$ 411	\$ 1,814	\$ 687	\$ 971
					\$ 2,497

Denominator = 3

If any data is removed from the calculation as a result of exceeding the standard upper and lower bounds, the data count in the denominator of the averaging formula is reduced.

Converting FEC Peer Cost Data to UMS Institutions

This example outlines the steps for the Research FEC

A. Peer Cost Calculation Methodology:

Step 1: Calculate the cost per peer, per year, per measurement; for Research, the measurement would be tenure & tenure track faculty.

Step 2: The average for each year from Step 1 is averaged to obtain the peer institution’s 3-year average Research cost per tenure & tenure track faculty.

Step 3: The single average per peer from Step 2 is then average to obtain the overall average for all peers.

Calculation Example: (See Exhibit B Data above)

Step 1: The Research costs for Bluefield State College for FY15 are \$35,502. This cost is divided by the number of FY15 tenure & tenure track teaching faculty at Bluefield to derive a cost per faculty of \$623. This process is repeated for FY14 (\$1,832) and FY13 (\$2,978).

Step2: The 3 averages identified in Steps 1 are averaged to derive the average cost per tenure & tenure track teaching faculty for Bluefield for this 3-year period (\$1,811). Steps 1 & 2 are repeated for all peers.

Step 3: The 3-year averages for each peer are then averaged to obtain the average Research cost per tenure & tenure track teaching faculty for the peer group (\$2,497)

B. Applying Peer Averages to UMS Metrics

IPEDS financial data includes all financial funds – both restricted and unrestricted. Since State E&G Appropriation is used to fund unrestricted operations (excluding Auxiliary), it is necessary to derive what percentage of the peer costs are unrestricted costs. Only the cost of unrestricted Scholarships can be determined directly from IPEDS data. For all other FECs, the Model assumes that the peer cost ratio of unrestricted costs to total costs is the same as the applicable UMS institution’s ratio. To calculate these ratios, the UMS campus financial statements for the past 3 years were reviewed and the percentage of Unrestricted Costs (excluding Auxiliary) was determined by expense category as follows:

Exhibit C

E&G SPENDING AS A % OF TOTAL SPENDING

3-Yr Average

	<u>UM</u>	<u>UMA</u>	<u>UMF</u>	<u>UMFK</u>	<u>UMM</u>	<u>UMPI</u>	<u>USM</u>
Instruction	96.36%	99.78%	91.84%	98.81%	98.54%	99.21%	95.39%
Research	19.16%	92.65%	0.02%	18.86%	2.59%	7.85%	18.93%
Public Service	52.97%	7.81%	1.80%	47.06%	62.36%	18.67%	16.79%
Academic Support	90.12%	98.03%	90.26%	95.74%	93.11%	89.01%	90.98%
Student Services	89.86%	97.62%	93.91%	94.06%	96.48%	92.08%	90.69%
Institutional Support	94.99%	96.57%	92.01%	96.27%	95.66%	92.82%	95.36%
Facilities-Ops/Maint	90.81%	98.32%	87.31%	91.03%	83.82%	88.40%	90.17%
Depreciation & Int	65.00%	98.19%	72.78%	65.43%	58.61%	89.63%	81.23%

The final step in this calculation is to multiply the average peer Research cost per tenure & tenure track teaching faculty by the applicable UMS institution’s % of unrestricted research spending. Since this example is for UMA, the model would multiply the average Research cost per tenure & tenure track teaching faculty for UMA’s peer group (\$2,497) by UMA’s percentage of unrestricted research spending 92.65% (See Exhibit C) for a total of \$2,313 per UMA tenure & tenure track teaching faculty. This amount (\$2,313) would then be multiplied by the 3-year average number of UMA tenure & tenure track teaching faculty to derive a total Research Costs. This process to convert peer cost data to UMS institutions is repeated for each FEC by applying the appropriate measurement.

Needed State Support

University E&G operations have historically received approximately 2/3 of the necessary educational funding from State appropriation with the remaining 1/3 from student tuition. As a result of appropriation reductions and subsequent flat funding, however, this ratio has changed to State support providing 1/3 of the funding and student tuition providing 2/3. The calculation of the needed State support in the Model is based on returning to the 2/3 State and 1/3 student tuition funding allocation.

Public higher education institutions set tuition rates lower for in-state students because state appropriations, generated by state taxpayers, “subsidize” the cost for in-state students. Out-of-state students and their families have not paid State income tax; therefore, the tuition rate is higher. The Model recognizes this distinction in the calculation of needed State support as outlined below.

1. The total peer-converted costs for all FECs are divided by the UMS institution’s 3-year average Student FTE’s to derive an average cost per Student FTE.
2. This average is then multiplied by the number of in-state FTE students and out-of-state FTE students.
3. Only the total cost associated with in-state students is used for the appropriation calculation; i.e., State appropriation is not requested for out-of-state students.
4. The total calculated cost for in-state students is further separated by undergraduate and graduate student FTEs.
5. Based on the historic ratio of state-to-student funding for the cost of education, the Model assumes that State appropriation should equal 60% of the undergraduate cost and 40% of the graduate cost of education.

Cost Share: State & Student

Cost Share: Student and State Appropriation									
UMaine	Total Peer Cost	State's Suggested Share		Student FTE Percent		State Calculated Support		Student Calculated Support	
		Resident	Non-Res	Resident	Non-Res	Resident	Non-Res	Resident	Non-Res
Undergraduate	\$ 227,281,608	60.00%	0.00%	66.23%	33.77%	\$ 90,314,089	\$ -	\$ 60,209,393	\$ 76,758,126
Graduate (Masters/Doctoral/Law)	\$ 32,248,791	40.00%	0.00%	68.39%	31.61%	\$ 8,822,191	\$ -	\$ 13,233,287	\$ 10,193,313
Total Required State Support	\$ 259,530,399					\$ 99,136,280	\$ -	\$ 73,442,680	\$ 86,951,439

	State's Suggested Share		Student FTE Percent	
	Resident	Non-Res	Resident	Non-Res
UGrad	60.00%	0.00%	66.23%	33.77%
Grad	40.00%	0.00%	68.39%	31.61%

Parity

The final step in the Model is to compare the Needed State Support with the current appropriation for each university to derive the % Funded and the Disparity %, which is based on the unfunded portion. The lower the % funded, the higher the Disparity %. Any new appropriation received will be allocated based on the Disparity %. The campus with the lowest % funded – i.e., the highest Disparity % - will receive the largest share of any new appropriation. With adequate State support, each university could be funded at 100%.

Parity Calculation

Public service - Incentive		Total E & G	Required State Support	FY20 Appropriation Allocation*	Net Variance	% Funded	Disparity Factor	Disparity Percent	Parity Allocation
UMaine		\$ 259,590,999	\$ 99,136,280	\$ 88,459,572	\$ (15,676,708)	84.2%	15.81	14.32%	\$ 149,242
UMA	\$ 42,044,514	\$ 24,158,278	\$ 17,415,314	\$ (6,742,964)	72.1%	27.91	25.28%	\$ 252,833	
UMF	\$ 30,925,222	\$ 15,129,572	\$ 12,365,939	\$ (2,763,633)	81.7%	18.27	16.55%	\$ 165,464	
UMFK	\$ 19,385,020	\$ 9,556,047	\$ 6,871,862	\$ (2,684,185)	71.9%	28.09	25.44%	\$ 254,439	
UMM	\$ 9,215,107	\$ 4,620,787	\$ 5,200,375	\$ 579,588	112.5%	0.00	0.00%	\$ -	
UMPI	\$ 16,785,557	\$ 8,568,615	\$ 7,500,556	\$ (1,068,059)	87.5%	12.46	11.29%	\$ 112,910	
USM	\$ 109,753,728	\$ 51,785,122	\$ 47,719,740	\$ (4,065,382)	92.1%	7.85	7.11%	\$ 71,112	
		\$ 212,954,701	\$ 180,533,358			110.40	100.00%	1,000,000	

		New Appropriation
		\$ 1,435,714
Strategic Investment	30.0%	\$ 430,714
Governance Budget Adjustment	0.3%	\$ 5,000
Appropriation for Campus Parity	69.7%	\$ 1,000,000

- The Disparity Factor is the inverse of the % Funded for each campus.
- The Disparity Percent equals the campuses' percentage of the sum of the Disparity Factors.

Future Model Update – IPEDS Data

The most recent IPEDS data will be input into the Model on an annual basis. In April of each year, IPEDS posts provisional data for the latest fiscal year reported. When calculating the FY20 appropriation allocation, the calculation of parity will be based on provisional cost information for FY16 and final data for FY15 and FY14. When calculating the FY21 appropriation allocation, the calculation of parity will be based on provisional cost data for FY17 and final data for FY16 & FY15. In this example if the FY16 final data differs from the provisional data, there will be no retroactive adjustment to the FY20 appropriation allocation.

The Model is subject to change based on future IPEDS and GASB changes in reporting standards such as FECs or data definitions.

Future Model Review

Allocation Recommendation #4 of the Unified Budget plan states: “Beginning in FY21 and at least every 3 years after, the Chief Financial Officer (VCFA) will review the allocation model with the Chief Business Officers of each campus and recommend any modifications that may be necessary to the Chancellor and Board.” While it is important for the tenants of the model to exhibit some measure of consistency from year to year, the Allocation Team definitely supports this concept and would

recommend that the Model be reviewed every 2 years during the first few years of implementation. The review process will coincide with the State's biennium budget schedule as outlined below.

Peer Changes

1. Each campus will have the opportunity to request 1 peer change every 2 years. A peer change is defined as any one of the following:
 - a. Add 1 peer (total number of peers increases) OR;
 - b. Reduce 1 peer (total number of peers decreases) OR;
 - c. Delete 1 peer and replace with another peer (no change in total number of peers)

A campus may choose only ONE of these options every 2 years.

2. The President must submit a written request to the Vice Chancellor of Finance & Administration (VCFA) by March 31st of any even-numbered year. The request must detail the filters applied and the similarity score obtained from the Hanover Research Peer Selection database, and a written narrative of the rationale and process used for the peer selection.
3. The VCFA will review the request with the Presidents' Council and make a final determination by June 30th. The review of the peer change will include, but not be limited to, the following factors:
 - a. Impact on the UMS institution's range of peer similarity scores
 - b. Impact on the UMS institution's average peer similarity score
 - c. Consistency of IPEDS cost data with existing peers
4. If approved, the peer change will become effective in the next biennium. (The State biennial budget periods are 7/1/odd year through 6/30/odd year.)

Example – State's Biennium is July 1, 2021 (FY22) through June 30, 2023 (FY23). A request for a peer change must be submitted to the VCFA by March 31, 2020 for review. Request will be approved or denied by June 30, 2020. Approved changes will be implemented for the FY22 appropriation allocation.

The Allocation Team recommends that each UMS institution have a minimum of 8 peers, if possible. In selecting additional peers, however, the criteria for Similarity Scores and IPEDS cost data referenced above is applicable.

Appropriation Reduction (tentative language – yet to be finalized)

In situations where State appropriation is reduced, the System will explore the utilization of Budget Stabilization, Temporary Investment Income, or other sources of centrally held funds to mitigate the curtailment. If it becomes necessary to reduce campus allocated appropriation, then the following steps would be applied:

- a) If new appropriation was distributed in the year of a curtailment, then the funds distributed would be retracted to offset the curtailment. If the curtailment was less than the funds distributed, then an equally proportionate amount thereof would be retracted from each campus.
- b) If the curtailment was greater than the new funds distributed in that year OR no funds were distributed in that year and all campuses were under-funded, then the curtailment would be applied in such a way that the campus with the highest percentage of appropriation funded would receive the largest portion of the curtailment and the campus with the lowest percentage of appropriation funded would receive the lowest portion of the curtailment.

- c) If the curtailment was greater than the new funds distributed in that year OR no funds were distributed in that year and any campus was over-funded, then appropriation equal to 10% of the overfunded amount would be retracted from each over-funded campus to offset the curtailment. The remainder of the curtailment would be applied to the remaining campuses in such a way that the campus with the highest percentage of appropriation funded would receive the largest portion of the curtailment and the campus with the lowest percentage of appropriation funded would receive the lowest portion of the curtailment.