

MEMORANDUM



DATE: September 27, 2005
TO: House Appropriations Subcommittee on Higher Education
FROM: Kyle I. Jen, Senior Fiscal Analyst
RE: State University Funding Model—***UPDATED FOR CONFERENCE REPORT***

This memo provides a technical explanation of the funding model used to determine state university operations funding amounts for July and August 2006 under section 418 of Article 8 of the conference report for House Bill 4831, the FY 2005-06 omnibus budget bill. Attached are a flowchart illustrating the methodology for distributing funds under the model and a four-page spreadsheet detailing the calculations made to determine state university funding amounts under the model.

Initially, the funding model determines full-year funding amounts for each university. The total funding allocated to the 15 state universities under the model is \$1,414,319,000. This amount is equal to the total of the following two amounts:

- The FY 2005-06 Executive Recommendation for state university operations: \$1,400,524,800
- An amount equal to the funding restoration to FY 2004-05 university appropriations resulting from the May 19 Consensus Revenue Estimating Conference: \$13,794,200¹

These funds are allocated to three funding components:

- Enrollment-based component: 37.5 percent (\$530.4 million) is allocated to an enrollment-based component under which the universities receive a base per-student funding amount, with resident students and nonresident undergraduate students funded at a higher level than nonresident graduate students.
- Degree-based component: 37.5 percent (\$530.4 million) is allocated to a degree-based component under the which the universities receive a funding amount that varies by academic level and program category for each degree conferred.
- Research-based component: 25.0 percent (\$353.6 million) is allocated to a research-based component under which the universities receive matching funds for science- and engineering-related funds awarded to them by the federal government.

These three components are described in greater detail below.

¹Funding for the King-Chavez-Parks programs and the National Charter Schools Institute, while ultimately included in the university operations line items, can be considered distinct from the funds allocated through the funding model.

Enrollment-Based Component

This component is calculated based on FY 2003-04 fiscal year-equated student (FYES) data from the Higher Education Institutional Data Inventory (HEIDI), a database maintained by the State of Michigan. The FYES measure is a calculated equivalent of the number of full-time students at each university. At the undergraduate level, FYES is equal to student credit hours divided by 30; the calculation differs for the three levels of graduate instruction. The residency definition used in reporting data to HEIDI is based on the residency policies adopted by the individual universities to determine tuition status.

Under the funding model, the funding amount per nonresident graduate FYES is set at 75.0 percent of the funding amount per resident FYES or nonresident undergraduate FYES. Given this condition and the amount of funds allocated for the enrollment-based component, the funding amount per resident FYES or nonresident undergraduate FYES is \$2,150 and the funding amount per nonresident graduate FYES is \$1,613.²

Degree-Based Component

This component is based on FY 2003-04 degree data initially reported to the federal Integrated Postsecondary Education Data System (IPEDS) and subsequently included in the HEIDI database. The funding amount awarded for each degree conferred by a university varies based on the academic level and program category of the degree.

The weights by academic level are as follows:

- 0.25 for an associate's degree
- 1.00 for a bachelor's degree
- 0.25 for a master's or doctoral degree
- 0.50 for a professional degree

The weights by program category are as follows:

- 1.00 for a degree in a general area
- 2.00 for a degree in a natural science-related area
- 4.00 for a degree in an engineering- or technology-related area
- 4.00 for a degree in a health-related area

A table showing the assignment of degree program areas to the four broader categories is attached.

These weights are multiplied in sequence—so, for example, a bachelor's degree in a general area (1.00 times 1.00 equals 1.00) would have the same final weight as a master's degree in engineering (0.25 times 4.00 equals 1.00). Given these weights and the amount of funds allocated for this component, the base amount for a bachelor's degree in a general field is equal to \$7,039.

² Throughout the funding model calculations none of the figures have been rounded, so the results vary slightly from the amounts that would be derived from using the rounded amounts appearing in this memo to calculate university funding amounts.

Research-Based Component

This component is based on a two-year average of data from the National Science Foundation (NSF) on federal obligations to institutions of higher education for research and development and other science- and engineering-related purposes. The data are based on an annual survey of federal agencies conducted by NSF. The most recent data available are for FY 2001-02, so the two-year average is calculated using FY 2000-01 and FY 2001-02 data. The survey reports a single amount for obligations to the University of Michigan; under the funding model, the obligations have been allocated to the university's three campuses (Ann Arbor, Dearborn, and Flint) in proportion to FY 2003-04 current fund expenditures for research at the three campuses using expenditure data from HEIDI. An attached spreadsheet shows the calculations made to determine the data for this component.

The amount that a university can receive under this component is capped at 40.0 percent of the total funds allocated to the component, which equates to \$141.4 million. Only the University of Michigan-Ann Arbor is directly affected by this cap. Given the cap and the amount of funds allocated for this component, the matching rate for federal obligations is 83.7 percent.

Subsection (7) of section 418 states that, if the funding model is used to determine university appropriation amounts in future fiscal years, it is the intent of the Legislature that any future increases in reported federal science- and engineering-related obligations for a university receiving a capped amount of funding in fiscal year 2005-06 will be eligible for increased funding under the funding model. This language would apply to UM-Ann Arbor.

Total Funding Amounts

The total initial full-year funding amount for each university is equal to the sum of the amounts allocated to that university under each of the three funding components. The total amount of funds allocated is \$13.8 million greater than the FY 2005-06 Executive Recommendation. There are significant differences between the unadjusted funding amounts determined by the model and the amounts proposed by the Executive Recommendation on a university-by-university basis. In dollar terms, the differences range from a positive \$13.7 million (Grand Valley State) to a negative \$35.8 million (Wayne State). In percentage terms, the differences range from a positive 28.9 percent (UM-Dearborn) to a negative 30.5 percent (Northern Michigan).

These differences have been moderated by limiting both positive and negative differences from the Executive Recommendation. Positive differences are limited to 10.0 percent, and negative differences are limited to 5.0 percent. Funding is 10.0 percent higher than the Executive Recommendation for five universities: Central, Grand Valley, Oakland, Saginaw Valley, and UM-Dearborn. Eight other universities show positive differences from the Executive Recommendation ranging from 0.3 to 5.0 percent.

Two universities—Northern Michigan and Wayne State—show 5.0 percent negative differences from the Executive Recommendation. The budget bill language provides, however, that funds be added to exactly offset those differences. Effectively, then, the full-year funding amounts for those two universities are equal to the Executive Recommendation.

Monthly Payment Amounts

Under the FY 2005-06 conference report for Higher Education, this funding model is utilized to determine university funding amounts for only July and August 2006—the final two monthly payments of the 11-month payment schedule for state aid to state universities. The payment amount for each of those two months for each university is calculated by dividing the full-year funding model amount by 11. The total payment amount for each month is \$130.8 million; the total for the two months combined is \$261.6 million.

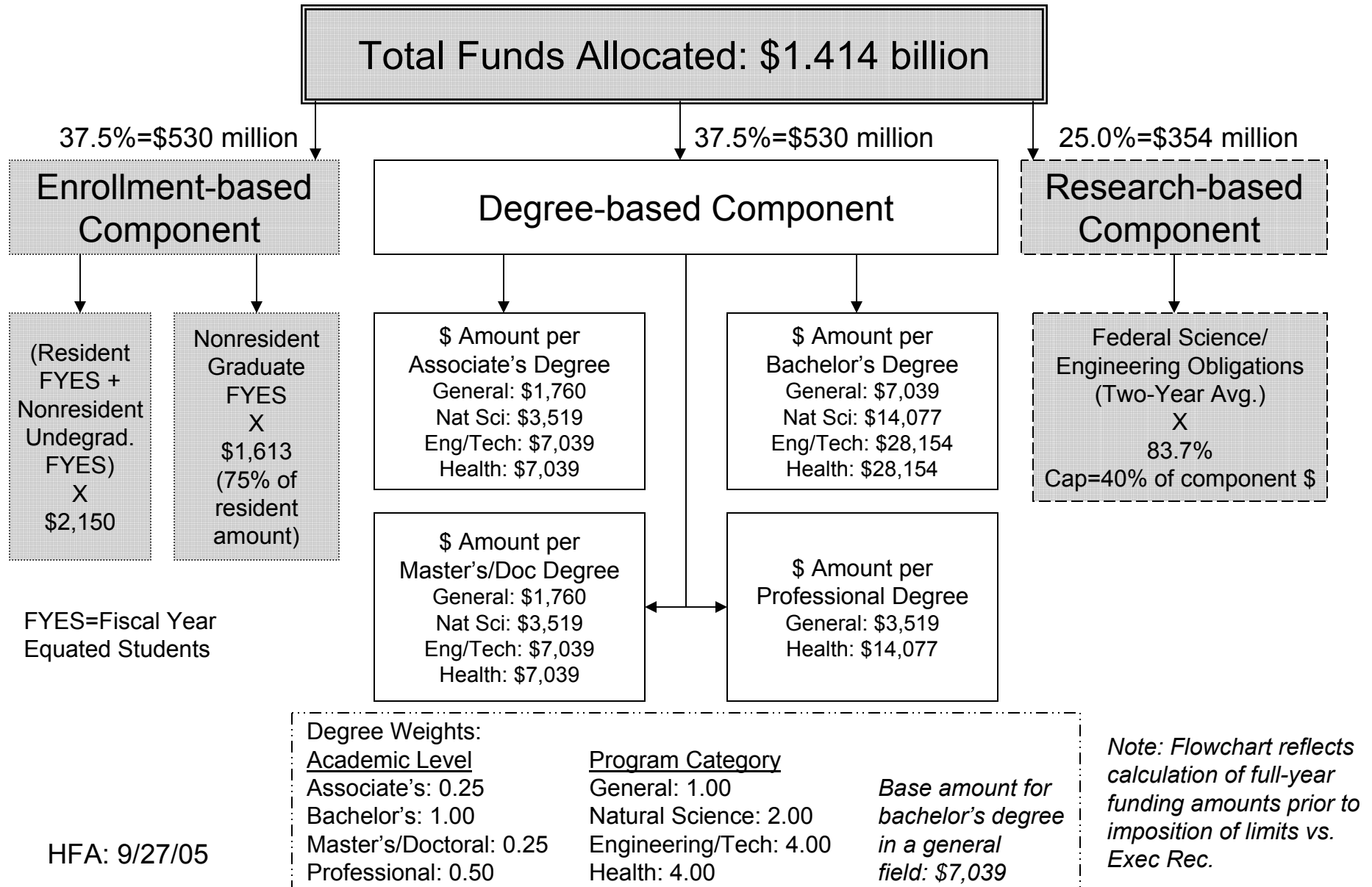
The total July/August funding model amounts are higher than the amounts that would have been paid in those two months under the Executive Recommendation for 13 universities. The positive differences for those universities range from \$10,800 (UM-Flint) to \$1.4 million (Central). The total increase in funding from the Executive Recommendation is \$6,951,700. In addition to this funding increase, the FY 2005-06 conference report for Higher Education also includes a \$2.5 million across-the-board increase and a \$6.9 million increase to establish a funding floor of \$3,650 per FYES. The across-the-board and funding floor increases will be included in the nine equal payments that will be made to the universities over the nine months from October 2005 through June 2006 pursuant to section 212(1) of Article 8 of the omnibus conference report.

Attachments (4)

c: Mitch Bean
Mary Ann Cleary
Key Staff

State University Funding Model

Conference Report



HFA: 9/27/05

State University Funding Model

Conference Report: Section 418, Article 8, House Bill 4831

University	Enrollment-Based Component				Total Enrollment-Based Funding	Degree-Based Component (FY 2003-04 Degree Data)					
	FY 2003-04 Resident FYES + Nonresident Undergrad FYES	Funding per FYES @ \$2,150	FY 2003-04 Nonresident Graduate FYES	Funding per FYES @ \$1,613		General	Funding per Degree @ \$1,760	Natural Science	Funding per Degree @ \$3,519	Associate's Engineering/Technology	Funding per Degree @ \$7,039
Central	21,022	45,206,290	425	685,449	45,891,739	0	0	0	0	0	0
Eastern	19,244	41,381,926	336	541,537	41,923,463	0	0	0	0	0	0
Ferris	10,247	22,035,432	93	149,992	22,185,424	223	392,397	11	38,712	397	2,794,290
Grand Valley	18,486	39,752,805	29	46,772	39,799,577	0	0	0	0	0	0
Lake Superior	2,803	6,026,573	0	0	6,026,573	69	121,414	1	3,519	12	84,462
Michigan State	40,297	86,655,783	1,231	1,985,382	88,641,165	0	0	0	0	0	0
Michigan Tech	6,046	13,000,776	0	0	13,000,776	1	1,760	2	7,039	21	147,809
Northern	8,295	17,837,797	10	16,128	17,853,926	70	123,174	0	0	35	246,348
Oakland	13,573	29,187,754	79	127,413	29,315,167	0	0	0	0	0	0
Saginaw Valley	7,375	15,860,157	31	50,401	15,910,557	0	0	0	0	0	0
UM-Ann Arbor	31,534	67,811,585	7,339	11,836,491	79,648,077	0	0	0	0	0	0
UM-Dearborn	6,303	13,554,145	159	256,438	13,810,584	0	0	0	0	0	0
UM-Flint	4,869	10,470,432	23	37,095	10,507,527	0	0	0	0	0	0
Wayne State	23,471	50,472,472	1,258	2,028,767	52,501,239	0	0	0	0	0	0
Western	24,127	51,884,228	911	1,469,602	53,353,830	0	0	0	0	0	0
TOTAL	237,691	511,138,157	11,924	19,231,468	530,369,625	363	638,745	14	49,270	465	3,272,909

Total Model \$ **1,414,319,000**

% of Total Model \$

% Enrollment	37.5%	530,369,625
% Degrees	37.5%	530,369,625
% Research	25.0%	353,579,750

Nonresident Graduate %
75.0%

Degree Funding Weights

Level		Program Category	
Associate's	0.25	General	1.00
Bachelor's	1.00	Natural Science	2.00
Master's/Doctoral	0.25	Engineering/Tech	4.00
Professional	0.50	Health	4.00
Base Amount	7,039		

Data Sources/Notes

- (1) Fiscal Year Equated Students (FYES): HEIDI (HEIDI residency definition based on tuition rate paid at individual universities)
- (2) Degrees granted: IPEDS via HEIDI
- (3) Federal science/engineering obligations: National Science Foundation (average of FY 2000-01 and 2001-02 data; UM figure allocated among three campuses based on FY 2003-04 current fund research expenditures)

Degree-Based Component (FY 2003-04 Degree Data)

Bachelor's

University	Funding per Degree @		Funding per Degree @		Funding per Degree @		Funding per Degree @		Funding per Degree @		Funding per Degree @	
	Health	\$7,039	General	\$7,039	Natural Science	\$14,077	Engineering/Technology	\$28,154	Health	\$28,154	General	\$1,760
Central	0	0	2,922	20,566,538	141	1,984,861	241	6,785,127	244	6,869,590	2,065	3,633,633
Eastern	0	0	2,352	16,554,585	83	1,168,393	252	7,094,822	197	5,546,349	1,106	1,946,149
Ferris	203	1,428,818	866	6,095,353	32	450,465	388	10,923,774	136	3,828,952	92	161,886
Grand Valley	0	0	2,112	14,865,342	223	3,139,177	161	4,532,803	184	5,180,346	692	1,217,663
Lake Superior	9	63,347	365	2,569,058	47	661,620	63	1,773,706	36	1,013,546	6	10,558
Michigan State	0	0	5,665	39,873,182	1,103	15,526,962	725	20,411,691	290	8,164,676	1,799	3,165,572
Michigan Tech	0	0	180	1,266,933	94	1,323,241	758	21,340,774	10	281,541	35	61,587
Northern	25	175,963	830	5,841,967	101	1,421,780	81	2,280,479	89	2,505,711	185	325,531
Oakland	0	0	1,542	10,853,389	119	1,675,166	205	5,771,581	162	4,560,957	646	1,136,720
Saginaw Valley	0	0	869	6,116,469	38	534,927	113	3,181,408	65	1,830,014	466	819,987
UM-Ann Arbor	0	0	4,022	28,308,903	436	6,137,584	1,335	37,585,665	130	3,660,027	2,144	3,772,643
UM-Dearborn	0	0	762	5,363,348	74	1,041,700	216	6,081,276	8	225,232	302	531,408
UM-Flint	0	0	685	4,821,382	44	619,389	30	844,622	110	3,096,946	128	225,232
Wayne State	0	0	1,681	11,831,742	158	2,224,170	244	6,869,590	297	8,361,755	1,766	3,107,504
Western	0	0	3,485	24,529,221	170	2,393,095	479	13,485,793	165	4,645,419	1,205	2,120,352
TOTAL	237	1,668,128	28,338	199,457,409	2,863	40,302,531	5,291	148,963,110	2,123	59,771,061	12,637	22,236,425

Degree-Based Component (FY 2003-04 Degree Data)

University	Master's/Doctoral			Professional							Total Degree-Based Funding
	Natural Science	Funding per Degree @ \$3,519	Engineering/Technology	Funding per Degree @ \$7,039	Health	Funding per Degree @ \$7,039	General	Funding per Degree @ \$3,519	Health	Funding per Degree @ \$14,077	
Central	15	52,789	66	464,542	425	2,991,368	0	0	0	0	43,348,448
Eastern	19	66,866	86	605,312	34	239,309	0	0	0	0	33,221,786
Ferris	0	0	58	408,234	0	0	0	0	121	1,703,320	28,226,201
Grand Valley	1	3,519	44	309,695	105	739,044	0	0	0	0	29,987,589
Lake Superior	0	0	0	0	0	0	0	0	0	0	6,301,230
Michigan State	320	1,126,162	214	1,506,242	188	1,323,241	0	0	344	4,842,498	95,940,224
Michigan Tech	52	183,001	136	957,238	0	0	0	0	0	0	25,570,921
Northern	12	42,231	0	0	10	70,385	0	0	0	0	13,033,568
Oakland	11	38,712	246	1,731,474	80	563,081	0	0	0	0	26,331,081
Saginaw Valley	0	0	11	77,424	11	77,424	0	0	0	0	12,637,652
UM-Ann Arbor	350	1,231,740	1,302	9,164,145	310	2,181,939	383	1,347,875	322	4,532,803	97,923,326
UM-Dearborn	3	10,558	322	2,266,402	0	0	0	0	0	0	15,519,923
UM-Flint	2	7,039	0	0	41	288,579	0	0	0	0	9,903,189
Wayne State	104	366,003	573	4,033,069	219	1,541,435	220	774,237	287	4,040,107	43,149,610
Western	39	137,251	203	1,428,818	76	534,927	0	0	0	0	49,274,877
TOTAL	928	3,265,870	3,261	22,952,594	1,499	10,550,732	603	2,122,112	1,074	15,118,728	530,369,625

+ Difference	10.0%
- Difference	5.0%

University	Research-Based Component		Unadjusted Funding Model Results				Limit Differences from Exec Rec		
	2-Year Avg Federal Science/Engin Obligations	Match Rate: 83.7% Cap: 40% of Component \$	Total Model Funding	FY 2005-06 Exec Rec	\$ Difference Model from Exec Rec	% Difference Model from Exec Rec	*Full-Year Funding	\$ Difference Model from Exec Rec	% Difference Model from Exec Rec
Central	418,500	350,453	89,590,640	77,797,000	11,793,640	15.2	85,576,700	7,779,700	10.0
Eastern	1,116,500	934,961	76,080,211	75,712,000	368,211	0.5	76,080,200	368,200	0.5
Ferris	23,500	19,679	50,431,304	48,010,900	2,420,404	5.0	50,431,300	2,420,400	5.0
Grand Valley	900,000	753,663	70,540,829	56,806,100	13,734,729	24.2	62,486,700	5,680,600	10.0
Lake Superior	235,000	196,790	12,524,593	12,403,400	121,193	1.0	12,524,600	121,200	1.0
Michigan State	121,483,000	101,730,321	286,311,710	282,130,700	4,181,010	1.5	286,311,700	4,181,000	1.5
Michigan Tech	11,343,500	9,499,090	48,070,787	47,707,500	363,287	0.8	48,070,800	363,300	0.8
Northern	357,500	299,372	31,186,866	44,887,400	(13,700,534)	(30.5)	42,643,000	(2,244,400)	(5.0)
Oakland	4,449,500	3,726,028	59,372,276	47,076,000	12,296,276	26.1	51,783,600	4,707,600	10.0
Saginaw Valley	575,500	481,926	29,030,135	25,611,600	3,418,535	13.3	28,172,800	2,561,200	10.0
UM-Ann Arbor	443,269,022	141,431,900	319,003,302	314,733,000	4,270,302	1.4	319,003,300	4,270,300	1.4
UM-Dearborn	2,207,814	1,848,832	31,179,339	24,179,500	6,999,839	28.9	26,597,500	2,418,000	10.0
UM-Flint	514,164	430,563	20,841,279	20,782,000	59,279	0.3	20,841,300	59,300	0.3
Wayne State	98,551,500	82,527,397	178,178,246	214,013,900	(35,835,654)	(16.7)	203,313,200	(10,700,700)	(5.0)
Western	11,164,000	9,348,776	111,977,482	108,673,800	3,303,682	3.0	111,977,500	3,303,700	3.0
TOTAL	696,609,000	353,579,750	1,414,319,000	1,400,524,800	13,794,200	1.0	1,425,814,200	25,289,400	1.8

*Amounts rounded to nearest increment of one hundred

University	Add Funds to Offset Negative Differences			Apply to July/August Payments			
	Full-Year Funding	\$ Difference Model from Exec Rec	% Difference Model from Exec Rec	** July Funding	** August Funding	Total July/August Funding	*** July/August \$ Difference from Exec Rec
Central	85,576,700	7,779,700	10.0	7,779,700	7,779,700	15,559,400	1,414,500
Eastern	76,080,200	368,200	0.5	6,916,382	6,916,382	13,832,764	66,900
Ferris	50,431,300	2,420,400	5.0	4,584,664	4,584,664	9,169,327	440,100
Grand Valley	62,486,700	5,680,600	10.0	5,680,609	5,680,609	11,361,218	1,032,800
Lake Superior	12,524,600	121,200	1.0	1,138,600	1,138,600	2,277,200	22,000
Michigan State	286,311,700	4,181,000	1.5	26,028,336	26,028,336	52,056,673	760,200
Michigan Tech	48,070,800	363,300	0.8	4,370,073	4,370,073	8,740,145	66,100
Northern	44,887,400	0	0.0	4,080,673	4,080,673	8,161,345	0
Oakland	51,783,600	4,707,600	10.0	4,707,600	4,707,600	9,415,200	855,900
Saginaw Valley	28,172,800	2,561,200	10.0	2,561,164	2,561,164	5,122,327	465,700
UM-Ann Arbor	319,003,300	4,270,300	1.4	29,000,300	29,000,300	58,000,600	776,400
UM-Dearborn	26,597,500	2,418,000	10.0	2,417,955	2,417,955	4,835,909	439,600
UM-Flint	20,841,300	59,300	0.3	1,894,664	1,894,664	3,789,327	10,800
Wayne State	214,013,900	0	0.0	19,455,809	19,455,809	38,911,618	0
Western	111,977,500	3,303,700	3.0	10,179,773	10,179,773	20,359,545	600,700
TOTAL	1,438,759,300	38,234,500	2.7	130,796,300	130,796,300	261,592,600	6,951,700

**Amounts equal to 9.09% (1/11) of full-year amounts

***Amounts rounded to nearest increment of one hundred

State University Funding Model (Conference Report)

Degree Program Categories

<u>Category</u>	<u>Program Areas*</u>
General	Agriculture, Agriculture Operations, & Related Sciences (<i>partial; see note</i>) Area, Ethnic, Cultural, And Gender Studies Business, Management, Marketing, & Related Support Services Communication, Journalism & Related Programs Education English Language And Literature/Letters Family And Consumer Sciences/Human Sciences Foreign Languages, Literatures, And Linguistics History Legal Professions And Studies Liberal Arts & Sciences, General Studies & Humanities Library Science Mathematics And Statistics Multi/Interdisciplinary Studies Parks, Recreation, Leisure And Fitness Studies Natural Resources And Conservation (<i>partial; see note</i>) Personal And Culinary Services Philosophy And Religious Studies Psychology Public Administration & Social Service Professions Security And Protective Services Social Sciences Visual And Performing Arts
Natural Science	Agriculture, Agriculture Operations, & Related Sciences (<i>partial; see note</i>) Biological And Biomedical Sciences Natural Resources And Conservation (<i>partial; see note</i>) Physical Sciences
Engineering/Technology	Architecture And Related Services Communications Technologies/Technicians & Support Services Computer And Information Sciences And Support Services Construction Trades Engineering Engineering Technologies/Technicians Mechanic And Repair Technologies/Technicians Military Technologies Precision Production Science Technologies/Technicians Transportation And Materials Moving
Health	Health Professions & Related Clinical Sciences

*Degree data reported based on Classification of Instructional Programs (CIP) codes published by the U.S. Department of Education

Note: Degrees in Agriculture and Natural Resources program areas classified between General and Natural Science program categories based on more detailed level of CIP codes

Federal Science/Engineering-Related Obligations to State Universities
Two-Year Average

University	FY 2000-01	FY 2001-02	Average
Central	482,000	355,000	418,500
Eastern	1,473,000	760,000	1,116,500
Ferris	0	47,000	23,500
Grand Valley	1,315,000	485,000	900,000
Lake Superior	294,000	176,000	235,000
Michigan State	124,955,000	118,011,000	121,483,000
Michigan Tech	10,210,000	12,477,000	11,343,500
Northern	343,000	372,000	357,500
Oakland	3,815,000	5,084,000	4,449,500
Saginaw Valley	659,000	492,000	575,500
UM-Ann Arbor*	432,501,144	454,036,899	443,269,022
UM-Dearborn*	2,154,182	2,261,446	2,207,814
UM-Flint*	501,674	526,654	514,164
Wayne State	92,839,000	104,264,000	98,551,500
Western	<u>8,075,000</u>	<u>14,253,000</u>	<u>11,164,000</u>
TOTAL	679,617,000	713,601,000	696,609,000
UM Total: 3 Campuses*	435,157,000	456,825,000	445,991,000

*UM federal obligations allocated among three campuses in proportion to FY 2003-04 current fund research expenditures, as reported to HEIDI

	FY 2003-04 Current Fund Research Exp.	% of Total
UM-Ann Arbor	586,467,340	99.39
UM-Dearborn	2,921,050	0.50
UM-Flint	<u>680,265</u>	<u>0.12</u>
TOTAL	590,068,655	100.00

Source: National Science Foundation survey of federal agencies (<http://www.nsf.gov/statistics/>)

HFA: 9/27/05