

## FUNDING FORMULAS FOR THE 2009-11 BIENNIUM

---

### Background

A.C.A. §6-61-223 establishes the process and key components for formula development for funding public institutions of higher education. That language reads as follows:

*“(a) The Arkansas Higher Education Coordinating Board will work with the state college and university Presidents Council to review, revise, and develop funding formulas which will, in principle, seek to provide fair and equitable state support to all postsecondary students across the state, regardless of the state institution attended, while at the same time recognizing: (1) The different needs for lower level, upper level, and graduate level instruction at the various institutions; (2) The requirements for specialized equipment, labs and smaller class sizes in some disciplines; and (3) Unique missions, such as agricultural extension services, research, medical sciences, workforce development, and public service; and (4) Growth, economies of scale, and other appropriate factors. (b) The formulas will be developed in consensus with the state college and university president’s council and presented to the Joint Budget Committee for review.”*

Each biennium the ADHE staff in consultation with the presidents and chancellors of the institutions review and revise the funding models for the determination of the AHECB appropriation recommendations for the institutions of higher education.

Funding of the public higher education system with its two- and four-year institutions and specialized entities must be addressed in a manner that is fair and equitable, while recognizing institutional differences in mission and the varying costs of providing different academic programs and services. The two-year, technical institutes and the universities have need-based formulas that recognize the differences in student semester credit hour (SSCH) production by discipline with the more expensive programs generating higher funding levels; the university formula also recognizes differences by level (undergraduate, masters, and doctoral). The unique mission entities have as a funding basis an inflationary factor for a continuing level of support of existing programs and the justification of enhancement, expansion, or creation of programs.

The funding formulas were developed and reviewed with the following principles in mind:

- **Embody the state goals for postsecondary education** – The funding formula should be the vehicle for incorporating and reinforcing the broad goals (such as access and quality) of the State’s system of colleges and universities. These goals are often expressed through approved master plans, quality expectations, and performance standards.
- **Ensure adequate funding** – The formula should identify the funding level needed by each institution to achieve its goals without being unduly influenced by average funding rates in other institutions.
- **Reduce complexity** – How differences in institutional characteristics and missions affect funding levels within the formula must be clear so that key participants in the state budget and funding process are able to understand the elements of the formula.
- **Determine equitable funding** – The formula should enable the State’s resources to be distributed in proportion to the relative need of each institution contingent upon its mission, complexity and size.
- **Recognize institutional mission differentials** – The formula should recognize that different institutional missions require different per-student funding so that the resulting funding levels are due to differences in degree levels, program offerings, students’ readiness for college, and geographic location. The formula should include different rates when mission related costs are significant and can be documented.
- **Rely on valid, reliable, uniform, and replicable data** – The formula must rely on data that are appropriate indicators of differing needs and must be verifiable by all key participants in the funding process. This means that enrollments reported for funding purposes must exclude cancelled registration students, withdrawn students, no-show students, and students enrolled in donated courses. Cancelled registrations shall include students who have not attended classes by the census date and/or who have not paid or have not made arrangements to pay their tuition and fees by the census date.
- **Provide effectiveness and efficiency** – The formula should provide some form of incentive for effectiveness and efficiency while not providing any inappropriate incentives for undesirable institutional behavior.

This agenda item presents the need-based formula elements for approval. At the July meeting of the AHECB an agenda item will be presented that will detail the total amount generated by the need-based formulas of the two-year colleges,

technical institutes and universities; and the justification amounts for the non-formula entities as well as a distribution methodology for any new funds received. That distribution model likely will incorporate the following factors:

- **Salaries** – The General Revenue portion of an educational and general (E&G) salary increase equal to the percentage the State uses as a salary increase.
- **Equity** – Will be addressed as either an amount to be sought outside the formula distribution or as a part of the formula distribution. For the two-year institutions, equity includes recognition of the need for a minimum base amount from general revenue for E&G operations as well as the percentage of need funded.

### **Performance Measures**

Since the inception of funding formulas in Arkansas all formulas have been based upon productivity in terms of “census” date enrollment and student semester credit hours (SSCH). The census date information has often drawn criticism from legislators due to the belief that the true measure of productivity is the number of students who complete the semester and earn a grade. Some believe this is the fundamental element in measuring student retention. On the other hand, colleges and universities have maintained that they experience the costs associated with the number of students enrolled on the census date because they must hire faculty to teach the number of students registered, as well as, provide student services such as financial aid and advising; and provide the facilities for the instruction.

ADHE staff requested a SHEEO survey of all states to determine if any state used or had used the end-of-term SSCH production in determining funding for colleges and universities. The results showed that only Minnesota had used the end-of-term productivity. However, the survey showed that five other states were considering using end-of-term credit hour production. Some other states use degree productivity rather than SSCH for funding higher education.

For the first time, Arkansas’s funding formulas for two-year colleges and universities will be based in part on end-of-term productivity. From a national perspective, Arkansas will be taking the lead in recognizing the end-of-term credit hours to determine institutions needs for funding (Minnesota no longer uses the end-of-term in the funding formula). Working with Governor Beebe’s staff, legislators, presidents and chancellors, the Department of Higher Education has developed a plan for including the end-of-term SSCH in determining institutions’ need for funding. The plan has received the consensus of the presidents and chancellors, and Governor Beebe has publicly advocated including the end-of-term SSCH in the funding for higher education as one measure of productivity.

The funding needs of the colleges and universities will be determined by using the formula determined need based upon both the census date SSCH and the end-of-term SSCH. For the 2009-11 biennium, need for funding will be determined using ninety (90) percent of the census date need and ten (10) percent of the end-of-term need.

In the 2007 legislative session there was a great deal of discussion about funding higher education for the behavior that the legislature wanted. In that session, a bill was introduced which called for several performance measures to be included in the determination of higher education funding. Among those was a requirement that the end-of-term SSCH be used in the funding formula. The funding methodology proposed is in response to that legislative interest and the commitment of the Governor to base funding in part on performance measures.

It is of interest to note the impact the legislative attention to the census-date versus end-of-term SSCH has had on institutional behavior. The improvement in the percentage of students completing the semester from 2006 to 2007 went from 87.4% completing in 2006 to 89.3% in 2007 at the universities. At the two-year colleges the improvement was even more dramatic, from 77.5% in 2006 to 82.3% in 2007.

### **Incentive Funding**

Funding initiatives that specifically increase the speed at which degrees are produced is essential if Arkansas is to change the percent of its population that has a college degree. ADHE recommends the State create an incentive funding formula in addition to the institutional funding formula based on institutional need. ADHE requests \$10 million annually to implement the incentive funding formula coordinated by ADHE with the emphasis on increasing the number of associate and bachelor degrees as quickly as possible.

Improving student success, especially student retention, graduation and most importantly degree attainment, should be a priority for higher education institutions. Incentives for increasing institutional performance on these measures have shown to be effective in other states. A similar incentive program in Oklahoma increased associate degree production twenty-eight (28) percent and bachelor degree production twenty-two (22) percent over a five-year period. Arkansas needs to increase institutional productivity; therefore it is recommended that funds be allocated for such a funding formula. The particulars of the proposed structure for the formula would be developed by ADHE in consultation with the leadership from the campuses. It should include both short term and long term measures of satisfactory progression, matriculation and graduation. A small portion of these funds would be used to enhance ADHE's capabilities for monitoring the success of the program; for sponsoring improvement grants for institutions having especially difficult issues with student program completion and statewide training events for institutional staff.

**Two-Year Institutions**

This Mini-Model used in determining funding needs for the current biennium became Act 1760 of 2005. In 2007 Act 1760 was amended by Act 591 to incorporate the changes you approved on April 28, 2006. There are no new improvements for the two-year college model recommended for the coming biennium. The presidents and chancellors see the modified Mini-Model as a long-term methodology for funding colleges. The components of the Revised Mini-Model found in Act 591 are as follows:

- Full-Time Equivalent (FTE) Faculty: Total number of FTE faculty needed is calculated by assigning SSCH generated to one of four weighted categories.

General Education	22 students / 660 SSCH
Technical Education	16 students / 480 SSCH
Basic Skills	16 students / 480 SSCH
Allied Health	12 students / 360 SSCH

- Faculty Salaries: The total FTE faculty generated above is adjusted for part-time faculty and faculty salaries are calculated as illustrated below.
  - Institutions with < 3,000 FTE students  
Of the total FTE faculty, seventy (70) percent are considered full-time and thirty (30) percent are considered part-time. The seventy (70) percent that are considered full-time are assigned a full-time salary equal to the projected SREB average for 2009-11. The thirty (30) percent considered part-time are assigned a part-time salary equal to fifty (50) percent of the calculated full-time salary.
  - Institutions with  $\geq 3,000$  FTE students  
Of the total FTE faculty, fifty (50) percent are considered full-time and fifty (50) percent are considered part-time. The fifty (50) percent that are considered full-time are assigned a full-time salary equal to the projected SREB average for 2009-11. The fifty (50) percent considered part-time are assigned a part-time salary equal to fifty (50) percent of the calculated full-time salary.
- Other Academic Support Categories: The calculation for Academic Support is sixty (60) percent of Teaching Salaries and currently includes Departmental Operations, Libraries, Museums and Galleries, Organized Activities, Public Service, and Other Academic Support. In addition, for all institutions, \$35,000 is added to the sixty (60) percent aggregate for a staff salary in public service.

- **Student Services:** Student Services is calculated based on a variable rate per student using the mean of FTE students and headcount. The rates are \$715 each for the first 750 students, \$495 each for the next 2,250 students, \$275 each for the remaining students above 3,000.
- **Physical Plant:** Physical Plant need is calculated using the space needs model which is an adaptation of the Florida Community College Space Model. Space needs are calculated in ten areas: General Classrooms, Non-Vocational Labs, Vocational Labs, Library, Audio-Visual Facilities, Auditorium/Exhibition, Community/Workforce, Student Services, Office Space, and Support Services as described in the table below.

SPACE NEEDS MODEL	
Space Type	Calculations
Classroom	13.5 square feet per FTE
Non-Vocational Lab	13.75 square feet per FTE
Vocational Lab	50 square feet per FTE + 15 square feet per FTE for CIP codes 46,47,48,49
Library	less than 1,000 FTE: 2,100 square feet minimum plus 10 square feet per FTE; greater than 1,000 FTE: 12,100 square feet minimum plus 11 square feet per FTE
Audio-Visual Facilities	5% of Classroom space + Non-Vocational Labs + Vocational Labs
Auditorium/Exhibition	10,000 square feet minimum + 3 square feet per FTE over 2,000 FTE
Community/Workforce	20,000 square feet minimum + 5 square feet per FTE over 2,000 FTE
Student Services	7.5 square feet per FTE
Office Facilities	12.5 square feet per FTE
Support Services	5% of total square feet from all other space need areas

Funding rates for Physical Plant are based on actual Educational & General (E&G) square feet as reported in the 2008 Facilities Audit Program (FAP) compared to the model-determined need. When the actual E&G square footage exceeds the model determined space need by more than hundred and fifty (150) percent, a rate of \$1.50 per square foot for any excess square footage will be applied. If the model determined need exceeds the actual E&G square feet, then the rate determined from the latest actual expenditures will be applied to the actual square footage and \$1.50 per square foot for the additional space needed.

- **Institutional Support:** Institutional Support is calculated as a percent of the total Educational and General Expenditure Function Needs. The percentages for institutions introduce an economy of scale into the calculation of Institutional Support. The percentages are as follows
  - 21 percent for institutions with fewer than 1,000 FTE students
  - 18 percent for institutions with 1,001 to 3,000 FTE students
  - 15 percent for institutions with greater than 3,000 FTE students
- **Staff Benefits:** Staff Benefits are calculated at thirty (30) percent of salaries. (This is in keeping with the average amount that the state funds its agencies for fringe benefits.)

- **Workforce Education:** Workforce Education is calculated at \$8.50 for the first 10,000 non-credit contact hours, \$7.50 for the next 10,000 non-credit contact hours, and \$6.50 for all non-credit contact hours over 20,000.

Funding categories for Scholarships and Fellowships, Equipment Replacement, and Mandatory Transfers for Debt Service are not included in this funding model. Equipment expenditures are reported in most expenditure categories and, therefore, represented in the cost rates. By law, debt service is paid from sources other than state general revenue.

### **Technical Institutes (New)**

Technical Institutes that merged with universities were funded under the non-formula category in previous biennia. These institutes include the Marked Tree campus of ASU-Jonesboro, the Ozark Campus of Arkansas Tech, and the Crossett and McGehee campuses of UA-Monticello. ADHE staff has developed a funding formula to determine the funding need for these technical institutes. The components of the model are as follows:

- **Full-Time Equivalent (FTE) Faculty:** Total number of FTE faculty needed is calculated by assigning SSCH generated to one of four weighted categories.

General Education	22 students / 660 SSCH
Technical Education	16 students / 480 SSCH
Basic Skills	16 students / 480 SSCH
Allied Health	12 students / 360 SSCH

- **Faculty Salaries:** The total FTE faculty generated above is multiplied by the average faculty salary for technical institutes in the SREB region.
- **Other Academic Support Categories:** The calculation for Academic Support is seventy-five (75) percent of Teaching Salaries and currently includes Departmental Operations, Libraries, Museums and Galleries, Organized Activities, Public Service, and Other Academic Support.
- **Student Services:** Student Services is calculated based on a variable rate per FTE. The rates are \$150,000 for the first 200 students and \$495 per FTE for all FTE over 200.
- **Physical Plant:** Physical Plant need is calculated using the space needs model which is an adaptation of the Florida Community College Space Model. Space needs are calculated in ten areas: General Classrooms, Non-Vocational Labs, Vocational Labs, Library, Audio-Visual Facilities,

Auditorium/Exhibition, Community/Workforce, Student Services, Office Space, and Support Services as described in the table below.

<b>SPACE NEEDS MODEL</b>	
<b>Space Type</b>	<b>Calculations</b>
Classroom	13.5 square feet per FTE
Non-Vocational Lab	13.75 square feet per FTE
Vocational Lab	50 square feet per FTE + 15 square feet per FTE for CIP codes 46,47,48,49
Library	less than 1,000 FTE: 2,100 square feet minimum plus 10 square feet per FTE; greater than 1,000 FTE: 12,100 square feet minimum plus 11 square feet per FTE
Audio-Visual Facilities	5% of Classroom space + Non-Vocational Labs + Vocational Labs
Auditorium/Exhibition	10,000 square feet minimum + 3 square feet per FTE over 2,000 FTE
Community/Workforce	20,000 square feet minimum + 5 square feet per FTE over 2,000 FTE
Student Services	7.5 square feet per FTE
Office Facilities	12.5 square feet per FTE
Support Services	5% of total square feet from all other space need areas

Funding rates for Physical Plant are based on actual Educational & General (E&G) square feet as reported in the 2008 Facilities Audit Program (FAP) compared to the model-determined need. The rates and calculations will be exactly like that of the two-year model.

- Institutional Support: Institutional Support is calculated as 21 percent of the total Educational and General Expenditure Function Needs.
- Staff Benefits: Staff Benefits are calculated at thirty (30) percent of salaries. (This is in keeping with the average amount that the state funds its agencies for fringe benefits.)

### **Universities**

This biennium the funding formula for the four-year institutions will be the need-based formula used to determine the funding needs for the current biennium. The need-based funding formula became Act 1429 of 2005 and serves as the funding formula for universities until amended or repealed. The ADHE staff proposes two changes to the University funding model which will require the amendment or repeal of Act 1429 of 2005. Those changes deal with the method of calculating the Diseconomy of Scale and increasing the Minority Mission increment from ten (10) percent to (15) percent.

This formula provides equal funding for similar levels and disciplines at each university (e.g., a freshman English course is funded at the same level at UAF as at HSU, and a college algebra course is funded at the same level at ASUJ as at UAM) and determines the minimum level of funding needed for each university. The formula is based upon research conducted by the University of Delaware in a study of over 300 institutions, including three from Arkansas.



- Full-Time Equivalent Faculty:** Through the research of the University of North Carolina System (UNCS) and the University of Delaware it was determined that the 52 academic disciplines normally used to classify instructional programs could be grouped into four categories on the basis of similarity of program costs/expenditures. The UNCS also determined that the traditional levels (lower level under-graduate, upper level undergraduate, masters, specialist, first-professional, and doctoral) could be reduced to three levels in terms of cost differentials, undergraduate, graduate, and doctoral. North Carolina combined the lower and upper levels of undergraduate into one group to discourage the tendency to classify a course as upper level simply to generate higher funding recommendations and to encourage institutions to use better-qualified faculty, hence higher paid, to teach those freshman general education classes, which are so critical to the eventual success of entering students (retention improvement measure). This resulted in a 12-cell matrix with all SSCH being distributed into four cost categories at three levels, undergraduate, graduate, and doctoral.

Based upon North Carolina's institutions' experience and the University of Delaware research UNCS determined, empirically, the number of SSCH that would be required to produce one FTE faculty member for that discipline cost category and level. The results are as follows:

**Faculty Load Factors (SSCH Required to Produce One FTE Faculty)**

	<u>Undergraduate</u>	<u>Graduate</u>	<u>Doctoral</u>
<b>Cost Category I</b>	645	175	130
<b>Cost Category II</b>	480	250	145
<b>Cost Category III</b>	365	160	120
<b>Cost Category IV</b>	230	102	70

The total number of FTE faculty needed is determined by dividing the faculty load factors into the SSCH enrollment matrix for each institution's latest enrollment. This determines for Arkansas the number of FTE faculty needed at each of the three levels (undergraduate, graduate, and doctoral).

- Faculty Salaries:** At this point, the proposed formula departs from the typical funding formula. Most states multiply a university's total FTE faculty by a single mean SREB salary for that institution's SREB classification, in Arkansas's formula each institution's subtotal of FTE at each level (undergraduate, graduate, and doctoral) is multiplied by the SREB mean faculty salary that is specific to that level. Thus, each institution receives the same faculty salary amount per its SSCH in the four cost categories and at each level. Since the other expenditure function computations are a percentage of faculty salaries all institutions

receive the same funding recommendation for the same kind of SSCH. The 2006-07 SREB faculty salary for each level would be inflated to 2009-11 biennium.

- **Other Instructional Support:** Forty-five (45) percent of teaching salaries. The expenditures covered in this calculation are academic departments' operating expenses, staff benefits, and non-credit instruction.
- **Library:** Eleven (11) percent of the sum of teaching salaries and other instructional costs. The expenditures covered in this calculation are library staff salaries and benefits, operating expenses, collections acquisitions, and information technology.
- **General Institutional Support:** Fifty-four (54) percent of the sum of teaching salaries and other instructional support. The expenditures covered in this calculation are Other Academic Support, Student Services, and General Institutional Support.
- **Research:** Five (5) percent of the undergraduate teaching salaries, twenty-five (25) percent of the graduate teaching salaries, and fifty (50) percent of the doctoral level teaching salaries generated by the model are the percentages used for research funding. These proposed percentages for the research function were determined by the faculty release time for research mandated by accrediting agencies for graduate and doctoral programs. The goal of equal funding across disciplines and levels is maintained by this research formula.
- **Public Service:** Three (3) percent of teaching salaries.
- **Special Mission:** Need based funding models must recognize unique missions of institutions and provides non-enrollment driven funding for institutions with special missions. The special missions recognized in the UNCS model were a historically minority/disadvantaged student mission and a declared undergraduate liberal arts mission. For Arkansas institutions the following special missions were used:
  - **Historically Minority Mission** – An amount equal to *fifteen (15)* percent of the formula generated funding is added to UAPB in recognition of its historical minority/disadvantaged student mission, which is consistent with mission specific funding in North Carolina and other states.
  - **Land Grant Mission** – Again, because the UNCS formula is driven by new, additional enrollment only, the UNCS formula does not recognize the research efforts driven by the federal status of a land-

grant institution. An amount equal to ten (10) percent of the teaching salaries generated by the formula is added to the total funding need for UAF and UAPB.

- **Small School Diseconomy of Scale Adjustment:** Nationally, a small institution is defined as one with **3,000** FTE or less. The rates are as follows:

<u>FTE Enrollment</u>	<u>Percent to be added the Formula Need</u>
<i>0 to 2,000</i>	<i>10%</i>
<i>2,001 to 2,500</i>	<i>5.0%</i>
<i>2,501 to 3,000</i>	<i>2.1%</i>
<i>3,001 to 3,500</i>	<i>1.0%</i>

- **Operation and Maintenance of Plant:** The Academic Space Needs Model classifies academic square footage needs in three space intensity categories and three levels. These space intensity categories are almost identical to the cost categories used in determining teaching salary needs. Category III, the most space intensive category, encompasses the SSCH found in the funding model cost categories III and IV.

The Academic Space Needs Model defines an institution's square footage needs in five areas: Teaching, Library, Research, Office, and Academic Support. The Academic Space need is determined for the academic discipline and level of the institution's SSCH produced. After the Academic Space needs are determined the Institutional Support square footage needs for student services, financial aid, counselors, computer staff, administrative personnel, etc., are determined as a percentage of the academic space.

Whether an institution has excess square footage or a shortage of square footage is determined by subtracting the projected space needs from the institution's actual square footage. Excess square footage or additional square footage needed, as determined by the space needs model, are funded at a lower rate than that used for existing square footage. This accomplishes two things; it discourages keeping unneeded square footage in the facilities inventory to get additional funding and it gives some relief to institutions who are experiencing higher maintenance costs as a result of the intensity of use of the facilities.

As in the two-year funding formula the categories of Scholarships and Fellowships, Equipment Replacement, and Mandatory Transfers for Debt Service are not included in this funding model. Equipment expenditures are reported in most expenditure categories and, therefore, represented in the cost rates.

**Non-Formula**

Nonformula entities include the System Offices of the University of Arkansas and Arkansas State University, Division of Agriculture, Archaeological Survey, Criminal Justice Institute, Math & Science School, Clinton School, UAMS, as well as the non-formula entities within institutions such as SAUT-Fire Training and Environmental Control Academies, UALR Research and Public Service, UAPB's 1890 Land Grant Federal Funding Match and HSU's Southwest Arkansas Technical Learning Center. The recommendation for new funds for these entities will be developed using a nominal percentage for the continuing level of programs plus programmatic justification for enhancements and/or expansions.

ADHE Executive Staff recommend that the Arkansas Higher Education Coordinating Board approve the following resolution.

**RESOLVED**, That the Arkansas Higher Education Coordinating Board adopts the funding policies described in this agenda item to be used by the institutions and Department in preparing appropriation requests for the 2009-11 biennium.