

INVESTING IN PEOPLE:

TENNESSEE'S COMMITMENT TO

21st CENTURY

HIGHER EDUCATION EXCELLENCE

Tennessee's Twenty-first Century system of higher education should elevate the overall knowledge level of the state, open wide the door to high quality advanced education for all Tennesseans, and motivate them to take advantage of this enhanced opportunity.

A Report of the
Governor's Council on Excellence in Higher Education

May 1999

Governor's Council for Excellence in Higher Education

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I

Executive Summary

In January of 1997, Governor Don Sundquist appointed the Council on Excellence in Tennessee Higher Education, and requested a practical plan for elevating the state's public colleges and universities into the nation's highest ranks.

The following summary specifies how this objective can be achieved through a five-point plan involving state policy, financial deployments, and governance reforms. The remainder of the report provides appropriate detail.

Before presenting the recommended reform steps, we wish to illustrate the magnitude of the challenge.

- Tennessee's citizenry is undereducated and underskilled. In most of the United States, one out of every four adults has attended college. In Tennessee, only one out of every five adults has gone to college. Individual fulfillment and workforce effectiveness are jeopardized by this condition.
- To achieve parity with the remainder of the nation, Tennessee needs approximately 20% of its 18 to 34 year olds to attend college. Of these, approximately 60,000 must actually succeed in obtaining bachelors degrees.
- Minority students are particularly at risk. Only one third of minority students who enter Tennessee public higher education graduate. This condition betrays the state's commitment to fairness. In order to match national proportions, approximately 3,000 additional Tennessee minority students annually must earn a college degree.

- Low-income students are also disadvantaged. Each year, there are 10,000 Tennessee high school graduates eligible for state student financial aid who do not receive it. Tennessee does not now appropriate sufficient state funds to cover all those who are eligible.
- Tennessee does not have a single campus ranked among the nation's top fifty public and private research universities. The University of Wisconsin at Madison has forty times more members of the National Academy of Sciences (NAS) and the National Academy of Engineering (NAE) than the University of Tennessee, Knoxville. The University of Georgia and Georgia Institute of Technology (combined) have ten times more NAS and NAE members than University of Tennessee, Knoxville. The University of North Carolina at Chapel Hill has nine times more. This and similar challenges to excellence can and must be met.
- Tennessee pay is low, and impedes competing effectively for world class university and college faculty. For example, Tennessee professorial salaries lag major national research campuses by as much as \$30,000 a year. Assistant professor salaries lag by as much as \$12,000 a year. The competition for talent is now nationwide or worldwide, not regional.

The Council contends that unless these and similar higher education challenges are successfully addressed, Tennessee is at peril of becoming a passive observer as much of the world pursues a productive path into the 21st Century.

A. Summary of Council Recommendations

**Meeting the Challenge of Excellence:
An Integrated Higher Education Reform Plan**

The Council was appointed to recommend and advise. It possesses no enactment or operating authority. Hence, the following five strategic reform specifications are suggestions. They summarize and distill the major observations and understandings around which the Council's opinions have crystallized after two years of research and deliberation.

I. Define and Adopt a Modern Systemwide Mission

Tennessee's Twenty-first Century system of higher education should elevate the overall knowledge level of the state, open wide the doors to high quality advanced schooling for all Tennesseans, and motivate them to take advantage of this enhanced opportunity.

II. Establish Goals and Performance Targets in Keeping with the Mission

- A. Elevate higher education and job training levels of Tennessee residents. (Need postsecondary education opportunities for approximately 200,000 additional Tennesseans over the next ten years to match national college attendance averages.)
- B. Create a nationally regarded higher education system which undertakes research and knowledge creation. (Aim for a Top 25 ranking as a public research university.)
- C. Realize a national reputation for teaching quality. (Student performance, instructional appraisal, and client satisfaction to be used as measures of progress.)
- D. Sustain the existing higher education system's concerns for efficiency and

productivity. (Maintain competitive current costs for bachelor's degree; obtain similar performance for associates, master's, and doctoral programs.

III. Authorize the Tennessee Higher Education Commission to Ensure that Programs, Institutions, and Operating Components Are Aligned with Above Goals

A. The Tennessee Higher Education Commission should rely upon the following functional classifications as an institutional template against which to shape decisions and appraisals:

- 1. Research universities and advanced professional programs
- 2. Four-year and master's program colleges and universities
- 3. Two-year colleges and postsecondary technology centers

B. Clearly define each appraisal category's mission

- 1. Research University: conduct research and advanced professional preparation with goal of becoming a national top 25 public research university
- 2. Four-year bachelor's and master's degree programs: excel in teaching liberal arts, business, or engineering at undergraduate and entry graduate level
- 3. Two-year Colleges and Technology Centers: preparing high school graduates for transfer to four-year college, receipt of associates degree and technical certificates, and providing remedial and developmental courses.

IV. Strategically increase funding and link allocated revenues to performance goals

A. Quantitative Challenges (Financial summary provided in Figure 1)

- 1. Increase postsecondary enroll-

- ments in order for Tennessee to achieve national attendance averages for bachelor's degree level of populace (estimated increased cost equals \$30 million/year.)
2. Increase student financial aid for qualified low-income and underserved students (estimated annual cost equals \$21 million/year) and incentives for populations who typically do not enroll
 3. Retain Tennessee's best and brightest high school students (estimated annual cost equals \$4 million/year.)
- B. Qualitative Challenges. (Financial summary provided in Figure 1)
1. Enhance the system's ability to retain outstanding faculty by selectively elevating salaries, graduate fellowships, and related items to be nationally competitive (estimated annual state cost equals \$20 million/year, totaling \$100 million annually in Year Five)
 2. Enhance higher education's recruitment capacity by expanding existing "chairs of excellence" by approximately 150 to facilitate employment of nationally recognized faculty members, e.g., National Academy of Sciences or Academy of Engineering members. (Estimated annual state cost equals \$30 million/year and a total of \$150 million over five years.)
- C. Revenue Consideration (Financial summary provided in Figure 1)
1. Consider a strategy by which incremental annual costs are shared three ways between (a) added state revenues, (b) increases in tuition and student fees, and (c) redirected funds from proposed institutional operating efficiencies.
 2. Combined cost estimates for current system future operation and Council recommended "excellence" initiatives result in annual state-provided, higher education revenue shortfalls ranging from \$46.7 million in Year One to \$105.2 million in Year Five.
 3. Council contends that decisions regarding state revenue increases reside with governor and legislature
- V. Enhance Governing Authority and Reorganize Governing Board Appointment Processes
- A. Prestigious statewide board, affiliated operating boards, links to K-12.
1. Tennessee Higher Education Commission empowered to (a) represent higher education to the state, governor and legislature, (b) propose public higher education annual budgets and receive annual legislative appropriations, (c) appoint a chief executive officer and other such administrators as needed, (d) establish higher education goals for the state of Tennessee, (e) distribute financial resources, (f) oversee institutional and program missions to create clear lines of accountability and enhanced performance, (g) undertake impartial evaluations of the performance of the higher education system components and make necessary corrections, and (h) approve and terminate programs.
 2. Confidence-inspiring Tennessee Higher Education Commission comprised of fifteen carefully considered members, nominated by governor and confirmed through formal legislative committee meetings and a vote of full legislature.

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3. University of Tennessee and Tennessee Board of Regents appointments confirmed by same above-described process as Tennessee Higher Education Commission members.

B. Funding formula empowering the Tennessee Higher Education Commission with discretion to allocate annual operating funds consistent with system goals and contingent upon institutional performance.

B. Summary of Annual Cost of Excellence

Figure 1
Summary of Annual Cost of Excellence in Millions of Dollars

Purposes	Year One	Year Two	Year Three	Year Four	Year Five
Quantitative Approaches to Excellence					
Increased Enrollments	\$28.2	\$57.9	\$89	\$121.9	\$156.3
Student Financial Aid	\$25	\$25	\$25	\$25	\$25
Qualitative Approaches to Excellence					
Chairs of Excellence	\$30	\$30	\$30	\$30	\$30
Research Enhancement	\$20	\$40	\$60	\$80	\$100
Total Increase For Excellence	\$103.2	\$152.9	\$204	\$256.9	\$311.3
Annual Costs of Maintaining <i>Status Quo</i> (Operating current system plus anticipated enrollment increases.)	\$23.5	\$50.6	\$77	\$106.1	\$133.9
Excellence plus Maintaining <i>Status Quo</i>	\$126.7	\$203.5	\$281	\$363	\$445.2
Revenues from 2.26% Annual Tuition and Fee Increases and 1% Operating Efficiencies	\$30	\$40	\$50	\$60	\$70
Added Higher Education State Revenue from Expected Economic Growth (No new taxes)	\$50	\$100	\$150	\$210	\$270
Estimated Net State Additional Cost	\$46.7	\$63.5	\$81	\$93	\$105.2
Estimated Annual Net New Costs (in millions)	\$46.7	\$16.8	\$17.5	\$12	\$12.2

Table of Contents

I.	Executive Summary	3
	A. Summary of Council Recommendations	4
	B. Summary of Annual Costs of Excellence	6
II.	The Current System of Higher Education in Tennessee	9
	A. Magnitude	9
	B. Program and Degree Offerings	9
	C. Financing	9
	D. Governance and Higher Education Institutional Arrangements	14
III.	Impediments to Excellence	15
	A. Blurred Vision	15
	B. Limited Resources	17
IV	The Two Faces of Excellence	18
	A. Improving Quantity	18
	B. Improving Quality	19
V.	An Integrated Strategy for Achieving Tennessee Higher Education Excellence	30
	A. Step One: Defining and Adopting a Modern, Systemwide Mission	30
	B. Step Two: Distilling Practical Goals and Performance Targets	32
	C. Step Three: Aligning Institutions and Programs with Missions	33
	D. Step Four: Strategic Financing	35
	E. Step Five: Governing with Confidence and Accountability	43
VI.	Closing	44
	Acknowledgements	45
	A Dissenting View	46
	Financial Projection Details	49

Figures

1	Summary of Annual Cost of Excellence in Millions of Dollars	6
2	Tennessee Higher Education Institutional Descriptions	9
3	Tennessee Higher Education Program and Degree Offerings	9
4	Tennessee and Comparison State Higher Education Spending	10
5	Tennessee Higher Education State Appropriations 1990-91 through 1997-98	10
6	Higher Education Interstate Spending Comparisons	11
7	Tennessee Government Appropriations as Percent of State Revenues	11
8	Tennessee Higher Education Appropriations as Percent of State Budget 1989-99	12
9	Summary of Unrestricted Current Tennessee Higher Education Funds	13
10	Higher Education Comparative Participation Rates	18
11	Tennessee Manufacturing Job Distribution Across Wage Categories	19
12	A <i>Gourman Report</i> Sampling of the Nation's Top 100 Colleges and Universities	20
13	<i>Gourman Report</i> Overall Ratings of Tennessee Universities	20

GOVERNOR'S COUNCIL ON HIGHER EDUCATION

14	A <i>Gourman Report</i> Sampling of Highly-Rated Public University Undergraduate Disciplines	20
15	A <i>U. S. News and World Report</i> Sampling of Best National Universities	21
16	Comparisons of Public Tennessee Institutions and the University of Virginia	21
17	Comparison of College Freshmen Merit Scholars in 1997	21
18	A <i>U. S. News and World Report</i> Sampling of Top 50 Public National Universities	22
19	<i>U. S. News and World Report</i> Ratings of Tennessee Public Graduate Programs	22
20	A Sampling of Federal Research and Development Expenditures	22
21	Number of National Academy of Sciences Members at Selected Universities	22
22	Endowments per Student at Selected Public Institutions	23
23	A Sampling of Top Institutions in Alumni Financial Support	23
24	Research Royalty Revenues for Selected Higher Education Institutions	23
25	A <i>U. S. News and World Report</i> Sampling of Best Southern Regional Schools (Public and Private)	24
26	<i>U. S. News and World Report</i> Tier 2 Best Regional Schools, Tennessee Public Institutions	24
27	Licensure Passage Scores in Tennessee Public Universities, 1995-1997	25
28	A Sampling of Regional Total Fall Enrollments 1970-1990	26
29	1997 SAT Test-takers Sending Scores to In-state Schools	26
30	Schools Receiving In-state SAT Requests	26
31	Top Scoring Students Who Send SAT Scores to In-state Flagship	27
32	Student Performance at Tennessee Two-year Public Institutions	28
33	Client Satisfaction Rates at Tennessee Two-year Public Institutions	28
34	Student Performance at Tennessee Technology Centers	29
35	Tennessee Student Assistance Average Grant Awards 1997-1998	36
36	Need-Based State Grants per 18-24 Population	36
37	1997-1998 Tennessee Average Faculty Salaries Compared with Southern Regional Institutions	37
38	1997-1998 Tennessee Average Faculty Salaries Compared with National Institutions	38
39	Summarizing Total Additional Fifth Year Costs of Excellence	40
40	Tennessee State Revenue Projections (in billions)	40
41	Tennessee Undergraduate Tuition as Percentage of Household Income	40
42	1996-1997 Undergraduate Tuition and Fees—Four-year Institutions	41
43	1996-1997 Undergraduate Tuition—Two-year Institutions	41
44	Summary of Annual Cost of Excellence in Millions of Dollars	42

II

The Current System of Higher Education in Tennessee

This section, or at least major components of it, are intended for readers with little detailed knowledge of public higher education in Tennessee. Before providing such a description, however, a reader should grasp a few fundamental components.

Tennessee's present higher education system is large, serving more than 220,000 enrolled students. It is costly, with annual expenditures from all sources approaching \$2 billion. It is complicated, with three major governmental agencies involved: the Tennessee Board of Regents, with responsibility for more than forty individual institutions ranging from graduate schools to post-secondary technology training centers; the University of Tennessee, which operates three major undergraduate campuses, literally dozens of graduate and professional preparation programs and specialized research institutes; and the Tennessee Higher Education Commission, responsible for coordinating higher education activities and representing public postsecondary institutions to state government.

A. Magnitude

Figure 2

Tennessee Higher Education Institutional Descriptions

Institutions	Enrollment by FTE	Full-Time Faculty/Admin
UT Knoxville	22,475	1149/831
UT Chattanooga	7040	308/194
UT Martin	5479	264/128
UT Memphis	2024	632/660
TBR, Austin Peay	5816	278/142
TBR, Tennessee State Univ.	7383	397/253
TBR, MTSU	15,655	768/327
TBR, Univ. of Memphis	15,771	962/440
TBR, ETSU	9791	521/242
TBR, Tennessee Tech Univ.	7111	378/185
TBR, Comm Colleges	46,635*	1703/851
TBR, Technology Centers	5536*	444/115

*Community colleges and technology centers, by their nature, serve larger proportions of part time students than do the four-year schools; thus their FTE numbers comprise significantly lower proportions of their overall student bodies. Total headcount, which includes part-time students, are as follows: community colleges, 75,964; technology centers, 28,994.

B. Program and Degree Offerings

The following are program and degree offerings for the public higher education institutions in Tennessee.

Figure 3

Tennessee Higher Education Program and Degree Offerings

Institution	Certificate	Associate	Bachelor's/ Prof.	Doctorate
UT Knoxville			X	X
UT Chattanooga			X	
UT Martin			X	
UT Memphis			X	X
TBR/Austin Peay		X	X	
TBR/Tennessee State Univ.			X	X
TBR/MTSU			X	X
TBR/Univ. of Memphis			X	X
TBR/ETSU			X	X
TBR/Tennessee Tech Univ.			X	X
TBR/Community Colleges	X	X		
TBR/Technology Centers	X			

C. Financing

The following series of graphics displays various expenditure comparisons that reflect Tennessee's patterns of higher education appropriations over the past several years.

Figure 4

Tennessee and Comparison State Higher Education Spending

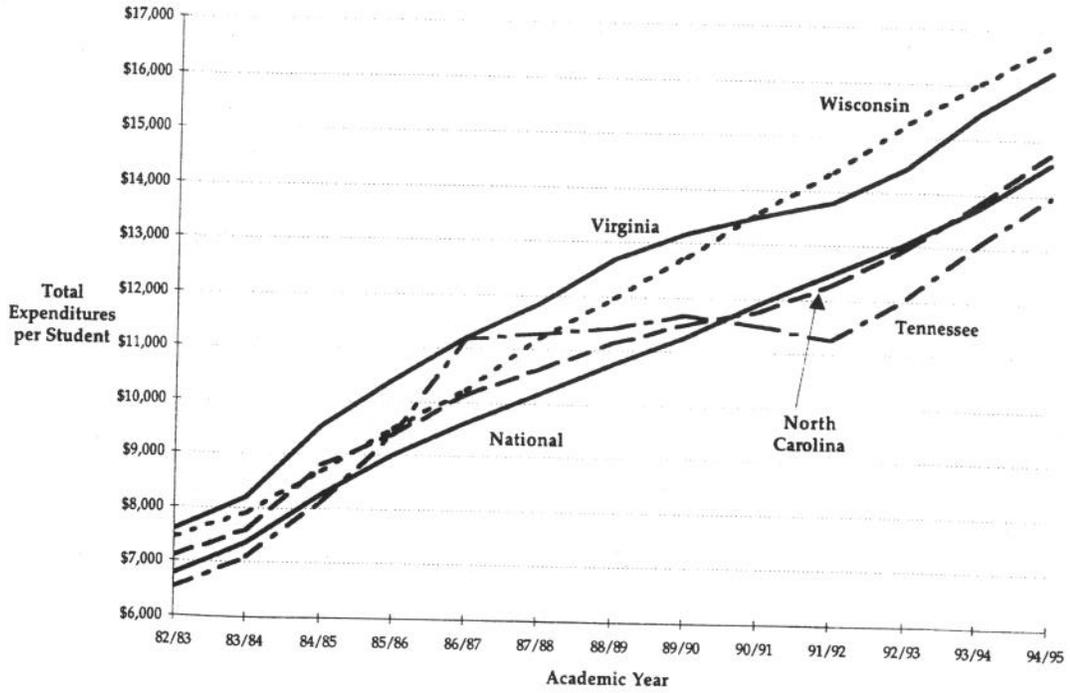


Figure 5

Tennessee Higher Education State Appropriations
1990-91 through 1997-98

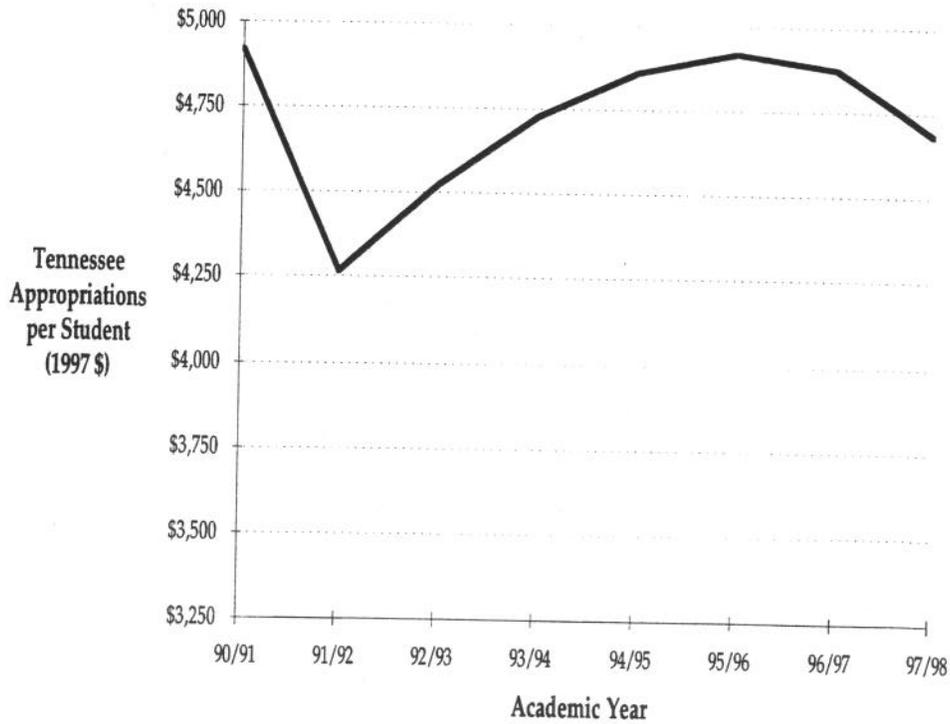
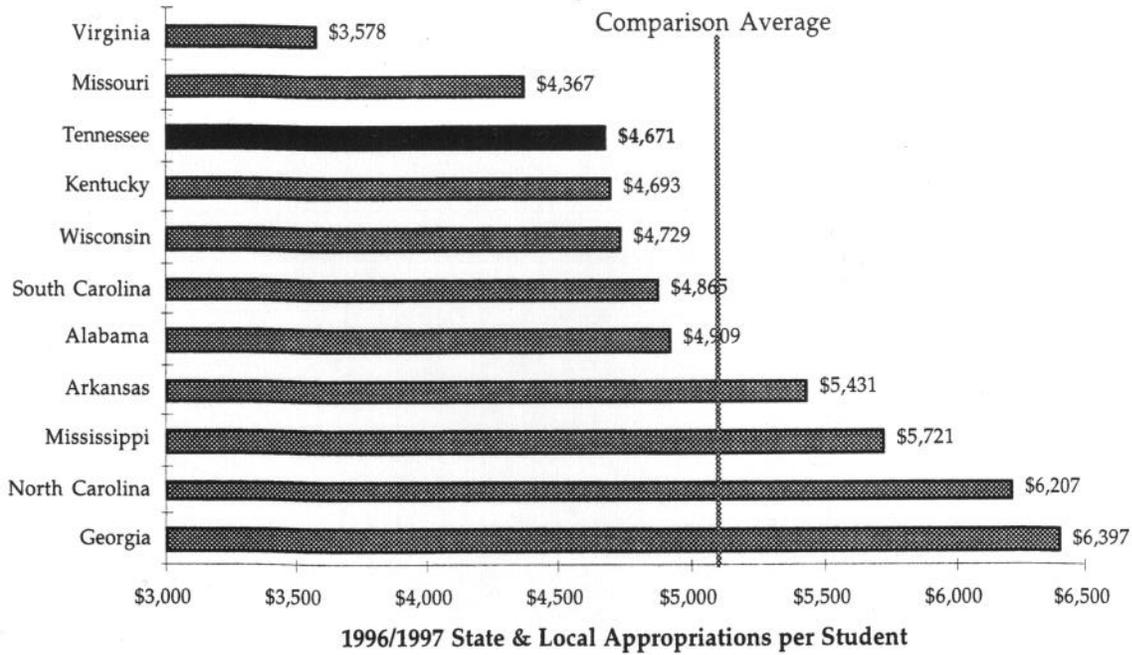


Figure 6

Higher Education Interstate Spending Comparisons



The following graphic reflects the percentage of Tennessee's state budget allocated to higher education.

Figure 7

Tennessee Government Appropriations as Percent of State Revenues

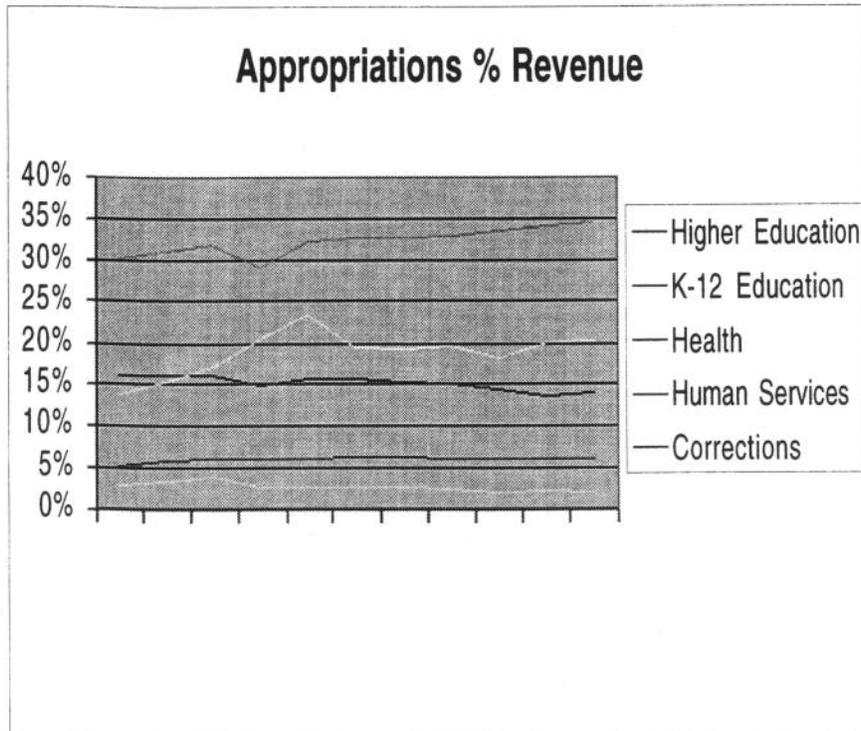
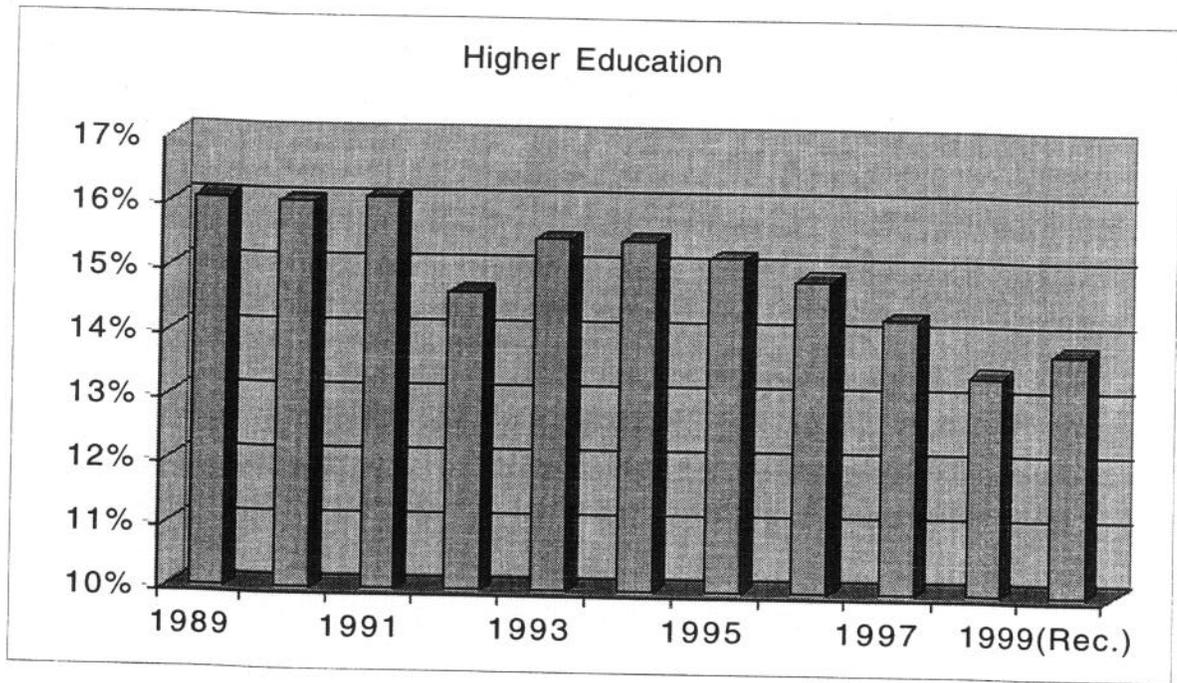


Figure 8

Tennessee Higher Education Appropriations as Percent of State Budget
1989-1999



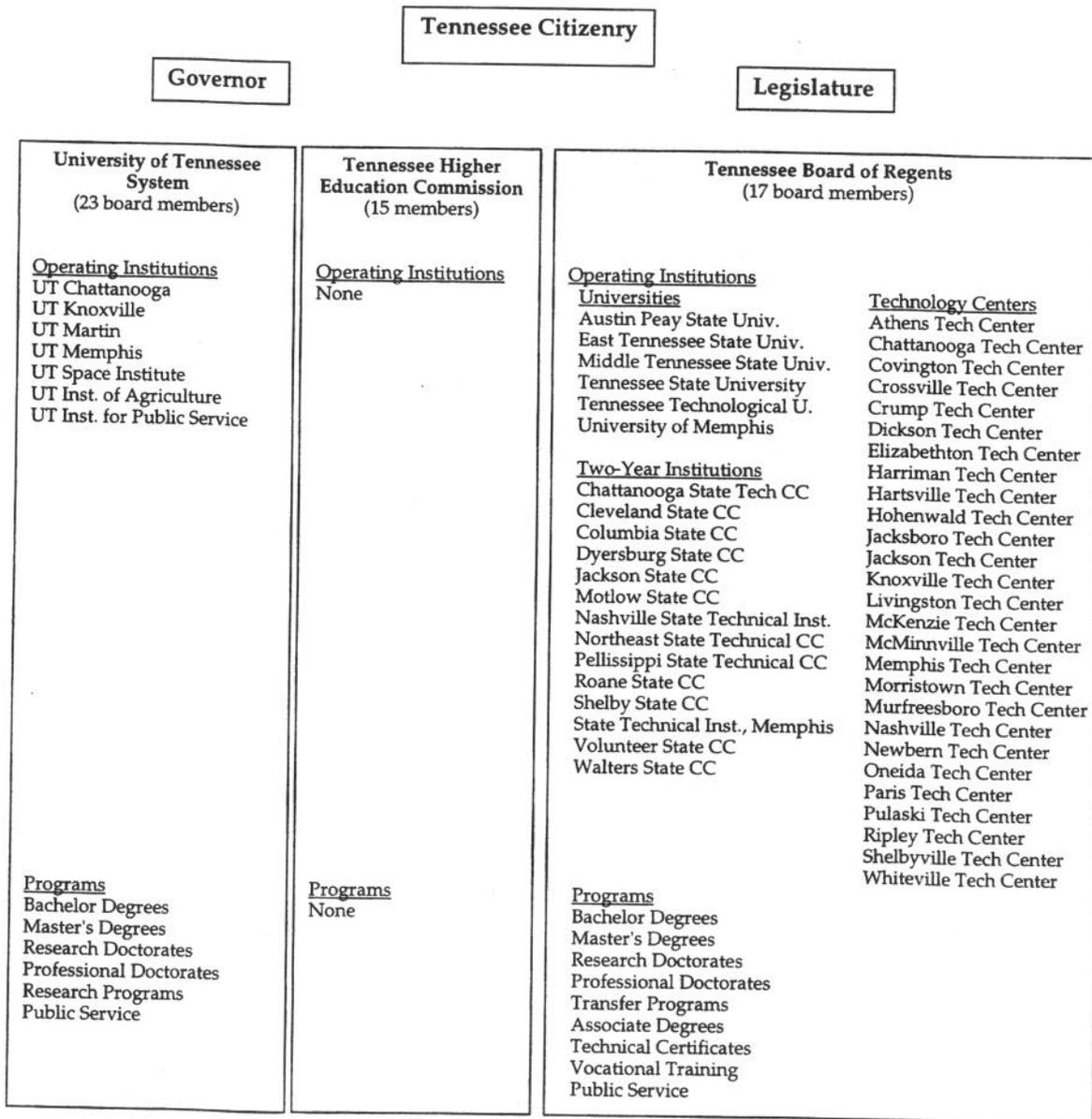
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Figure 9

Summary of Unrestricted Current Tennessee Higher Education Funds

	<u>Actual</u> <u>1997-1998</u>	<u>Proposed</u> <u>1998-1999</u>	<u>Revised</u> <u>1998-1999</u>
Unrestricted Current Fund Balances at Beginning of Period			
Allocation for Encumbrances	23,920,890	18,748,705	29,499,700
Allocation for Working Capital	108,525,715	111,427,975	114,224,210
Special Allocations	1,967,874	30,051,090	32,287,685
Unallocated Balance	<u>33,214,982</u>	<u>19,231,195</u>	<u>39,714,965</u>
Total Balances	167,629,461	179,458,965	215,726,560
REVENUES			
Educational and General			
Tuition and Fees	396,262,559	400,532,058	444,486,412
State Appropriations	866,508,250	896,149,420	913,958,150
Sales & Services of Educ. Activities	69,791,258	71,193,543	61,142,197
Other Sources	<u>91,796,412</u>	<u>82,211,682</u>	<u>87,195,803</u>
Total Education and General	1,424,358,479	1,450,086,703	1,506,782,562
Sales & Services of Aux. Enterprises	189,738,646	192,066,003	191,357,194
Hospitals	<u>307,896,646</u>	<u>302,881,280</u>	<u>306,133,449</u>
TOTAL REVENUES	1,921,993,771	1,945,033,986	2,004,273,205
EXPENDITURES AND TRANSFERS			
Education and General			
Instruction	701,380,608	743,367,029	780,263,392
Research	49,529,207	51,864,138	56,512,261
Public Service	56,296,924	59,648,908	64,019,609
Academic Support	137,209,270	139,577,540	147,229,138
Student Services	126,871,365	130,464,473	138,835,501
Institutional Support	148,164,086	159,169,669	170,358,241
Operation and Maintenance of Plant	124,812,058	132,487,229	141,583,916
Scholarships and Fellowships	<u>38,243,438</u>	<u>40,584,043</u>	<u>42,927,036</u>
Education and General Expenditures	1,382,506,956	1,457,163,029	1,541,729,094
Mandatory Transfers for:			
Principal and Interest	4,850,935	5,854,989	11,073,399
Loan Fund Matching Grant	<u>325,961</u>	<u>187,586</u>	<u>187,086</u>
Total Mandatory Transfers	5,176,896	6,042,575	11,260,485
Non-Mandatory Transfers for:			
Transfers to Unexpended Plant Fund	5,584,508	482,184	2,207,784
Other Transfers	<u>13,034,820</u>	<u>(7,712,471)</u>	<u>(5,467,869)</u>
Total Non-Mandatory Transfers	<u>18,619,328</u>	<u>(7,230,287)</u>	<u>(3,260,085)</u>
Total Educational and General	1,406,303,180	1,455,975,317	1,549,729,494
Auxiliary Enterprises Expenditures			
Mandatory Transfers for:	152,161,230	153,040,283	153,649,951
Principal and Interest	<u>16,756,968</u>	<u>19,556,999</u>	<u>19,209,351</u>
Total Mandatory Transfers	16,756,968	19,556,999	19,209,351
Non-Mandatory Transfers for:			
Transfers to Unexpended Plant Fund	1,847,557	957,680	898,930
Other Transfers	<u>16,420,192</u>	<u>15,005,656</u>	<u>13,863,739</u>
Total Non-Mandatory Transfers	18,267,749	15,963,336	14,762,669
Total Auxiliary Enterprises	187,185,947	188,560,618	187,621,971
Hospitals	<u>309,229,261</u>	<u>295,135,734</u>	<u>301,155,154</u>
Total Expenditures and Transfers	1,902,718,388	1,939,671,669	2,038,506,619
Prior Year Adjustments	759,406	0	0
Unrestricted Current Fund Balances at End of Period:			
Allocations for Encumbrances	29,499,655	18,748,705	5,266,915
Allocations for Working Capital	114,224,207	111,200,625	113,692,945
Special Allocations	4,213,338	25,978,751	27,107,576
Unallocated Balances	<u>39,727,050</u>	<u>28,893,201</u>	<u>35,425,710</u>
Total Balances	187,664,250	184,821,282	181,493,146

D. Governance and Higher Education Institutional Arrangements



III

Impediments to Excellence

The overarching impediment to excellence in Tennessee higher education has been the restricted perimeter of perception. Tennessee simply has not elevated its expectations sufficiently. For too long, Tennesseans have relied only on the state's natural resources, the richness of its soil, the state's strategic geographic location, the beauty of its land, the creativity of its leaders, and the predisposition of its people to work hard. Now, as a new era clearly emerges, these expectations must be elevated. Tennesseans need to sustain the best from the past, but must do more. Tennessee must begin to educate its people more fully. Human capital is the new resource, and Tennessee must begin to invest more heavily in it.

However, simple admonishments to become more conscious of education's importance are insufficient, whether made to oneself, to elected and appointed officials, or to institutions. Tennesseans also must realize that there is an existing set of institutional structures, governance procedures, and decision-making arrangements that have evolved over time. While these served well in the period during which they were constructed, they will no longer suffice as the state moves into a new era that demands new solutions. These institutional arrangements, no matter how revered by those rooted in the past, nor how well protected by those advantaged by the present, will not be sufficient to propel the state successfully into the future.

The current "system" of higher education governance and organization is cumbersome, inappropriately competitive, illogically constructed, and insufficiently inspiring of public confidence. It privileges geographic equity at the expense of focused excellence. As a result, it is overly responsive to shortsighted constituent preferences and insufficiently oriented toward

achieving performance goals. These conditions are facilitated by (1) a blurring of vision and purpose resulting from outmoded governance, organizational, and incentive structures and (2) insufficient dollar resources that support these structures.

A. Blurred Vision

Tennessee's current higher education is a cumbersome patchwork of structures assembled from historical accretion and political expediency. These structures are not organizationally rational. If one were to start with a clean slate, almost assuredly no one would design the existing dual higher education system.

The current set of competing organizational arrangements permits, possibly even encourages, a blurring of institutional missions among colleges and university segments and, thus, blunts accountability. It currently is difficult to select a mission statement from one of the University of Tennessee campuses and find it different from a four-year college statement in the Tennessee Board of Regents system. The reciprocal is also true.

Mission Creep

An examination of the mission statements of the two governing boards (UT and TBR), as well as at the descriptions of individual campuses, reveals a multiplicity of purposes across the system.

Immediately below are the verbatim mission statements from the Board of Regents and the UT system:

To provide a comprehensive postsecondary educational experience of highest quality and to make that experience accessible to a wide and varied constituency. Instruction offered in

traditional campus settings and at off-campus locations at times and via media that maximize all Tennesseans access to the system's teaching resources. Research emphasized to discover new knowledge, broaden application of existing knowledge, and enrich instruction for all students.

Offers programs ranging from diplomas and certificates to professional degrees in medicine and law to research doctoral degrees. Provides higher education and training opportunities for the citizens of Tennessee. The system is committed to providing educational, research and training programs of the highest quality that are responsive to the needs of Tennessee citizens, business, industry and schools.

An examination of the mission statements of individual campuses reveals the following:

- One mission statement refers to its school as "the designated state institution for the liberal arts." Does a particular school within the system come to mind that unequivocally meets this statement?
- Six out of ten four-year institutions emphasize health services/sciences in their statements.
- Six out of ten four-year institutions offer doctoral degrees.²
- One four-year institution states that "the hallmark" of the institution rests in offering a liberal arts education; the next sentence emphasizes the "strong technical education" provided by the same institution.

Based on these mission statements, it is virtually impossible to distinguish one school within the system from another, or one system from another.

When it comes to segmentation between four-year institutions, community colleges, and technology centers, the lines are equally blurry. Field interviews with Tennessee higher education faculty members and administrators revealed that technology centers aspire to be

able to grant associate degrees (traditionally the province of community colleges); that community colleges are sometimes eager to grant four-year degrees; that competition and fuzzy articulation for vocational training exist between technology centers and high schools; and that many of the four-year institutions consider themselves research universities—even those that do not grant doctoral degrees.

The Tennessee Higher Education Commission, as the state agency expected to coordinate the allocation of resources among the state's two higher education systems, is insufficiently empowered statutorily and operationally to perform this function effectively.

For example, THEC is not empowered statutorily to dissolve an academic program at either of the existing institutional systems. THEC can only approve of programs, or recommend dissolution; it cannot dissolve.

However, the problem is more fundamental than that. The UT and TBR systems are awesome organizations controlling annual budgets valued in the billions, employing thousands of personnel, regularly capturing large amounts of media attention, and systematically in touch with alumni and parents numbering in the tens of thousands. Given this momentum, and the quality of leadership these institutions have experienced over time, it is difficult for an organization such as THEC to withstand political pressures that can be brought to bear upon an issue.

The only way such can happen is to empower THEC statutorily and then provide it with a board whose authority or status is unquestionably the equal of or superior to that of the institutions it oversees. Anything less than this is to render THEC insufficient as a coordinating agency overseeing the other two systems. The existing formula funding arrangement has much to commend it, but its performance incentive component is now outmoded. For example, performance funding formula comparisons are principally with regional institutions. The result is predictable. Tennessee's public higher education institutions are held

² One of these is the University of Tennessee, Knoxville. The other five are administered under the Tennessee Board of Regents system.

accountable to regional rather than national measures. Also, most of the mathematical room for institutional improvement has been exhausted under the performance incentive provision of the present formula. Unless the performance funding components of the formula are recalibrated, financial incentives for improvement will be severely weakened.

The existing formula is a practical and artful means for calculating total higher education appropriations, and the Council would not alter the fundamentals of this arrangement.³ However, the legislature also determines the manner in which appropriations are divided among schools, thus robbing a statewide board of a powerful incentive tool for enforcing accountability to system goals.

This equity-oriented procedure eviscerates the capacity of governing boards to render the system goal oriented, while producing further mission blur as all institutions try to be all things to all people. If the name of the revenue enhancement game is to compete for resources, rather than to accomplish goals, then governing boards will organize themselves to maximize formula calculations, not maximize performance.

³ "Funding formula" as used here is a term of art. In fact, the state relies upon multiple computations to determine institutional revenue eligibility. Various formula components are used to capture differences in operating costs between programs as diverse as medical college training and the operation of technology centers.

This unproductive dynamic is a function of the system, or institutional and governance arrangements, not of the malfeasance of persons who administer the system or who sit on governing boards. Governance arrangements do matter; institutional structures do matter. They create incentives; they shape behavior. Those who claim that the number of or shape of governing boards does not matter are wrong. It matters a great deal.

B. Limited Resources

The blame for all of Tennessee's higher education mediocrity cannot be laid at the doorstep of institutional arrangements and decision-making procedures. Tennessee has not made a sufficient financial commitment to public higher education.

Tennessee is not keeping pace with its competitors. In the last three years, state financial support has not kept pace with increases in comparison states such as Georgia, North Carolina, Virginia, and Wisconsin. In fact, as illustrated in Figure 4, the gap between Tennessee's appropriations per student and the average appropriations of the above-mentioned benchmark states continues to widen. In real dollars, with inflation stripped away, Tennessee's appropriations per student were less in 1997/98 than they were in 1990/91; in terms of institutions' purchasing power, state appropriations have moved backwards, as shown in Figure 5.

IV

The Two Faces of Excellence

A. Improving Quantity

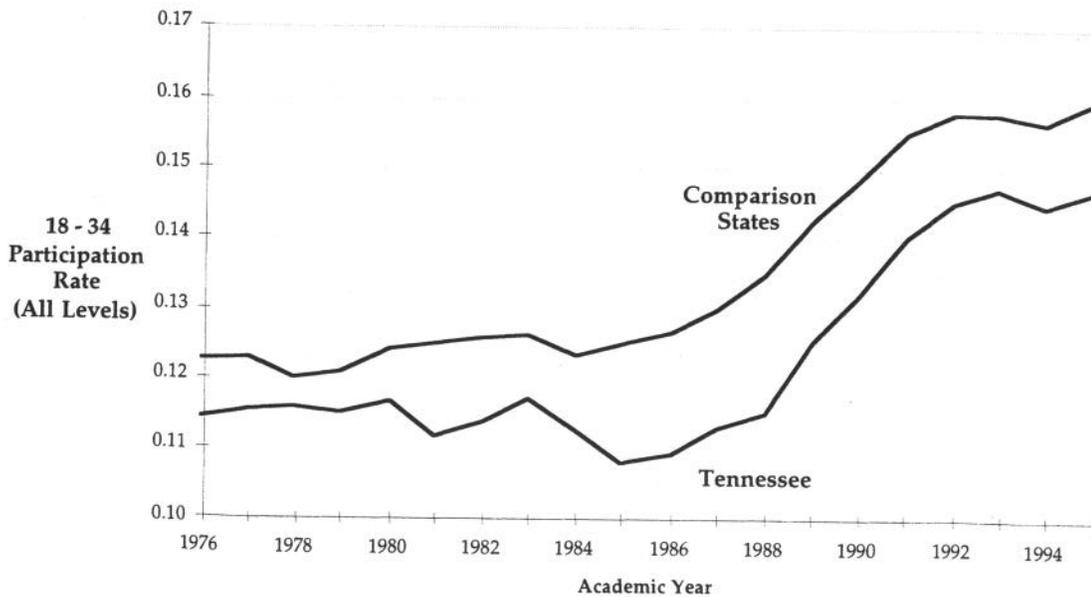
Tennessee's current postsecondary education levels portend restricted economic and personal opportunities for the state's students and an insufficiently skilled workforce to sustain significant state economic growth.

Over the past 20 years, enrollment in Tennessee colleges has consistently lagged other states.

The under-education of Tennessee's population is further reflected in the distribution of jobs among the sectors of the state's economy. The services share of the state's private sector, non-farm jobs, has risen from 29.5 percent in 1993 to 31.6 percent in 1996. Retail trade is the only other sector to increase its share, rising from 20.1 percent to 20.6 percent. The employment sectors losing the biggest shares

Figure 10

Higher Education Comparative Participation Rates



Of particular concern, however, is the fact that for undergraduates, the gap between Tennessee's enrollment levels and the average of other comparison states has increased during this period, thus indicating that the state is falling continually further behind the rest of benchmark states. (See Figure 10.)

include transportation and public utilities (6.3% to 5.2%), manufacturing (26.3% to 25.6%), and wholesale trade (6.6% to 6.2%).

Of particular concern are losses in manufacturing. While manufacturing employment has been falling over the past decades, Tennessee's manufacturing sector remains a much larger nationwide percentage of its total employment,

at 20%, than the national average of 15%. Within the manufacturing sector, there are three wage rankings: high, middle, and low. The state's job distribution among these categories is as follows:

Figure 11

Tennessee Manufacturing Job Distribution Across Wage Categories

High Wage	25%
Middle Wage	49%
Low Wage	26%

The manufacturing segment with the highest employment, apparel, also is the lowest paying, at an hourly wage of \$6.92 per hour. Thus, while manufacturing represents a large slice of Tennessee's overall employment, that piece is dominated by low and middle wage earners. These manufacturing jobs are vulnerable. The North American Free Trade Act (NAFTA) motivates manufacturers to transfer their capital to environments where returns can be maximized. If jobs are of a low skill nature then they will move to low paying environments. The long-term solution to those problems is to elevate the education levels of Tennessee's citizens.

B. Improving Quality

On the "qualitative" dimension, much improvement is needed. Tennessee does not now have a single public university in the U.S. *News and World Report's* top 50, nor in *The Gourman Report's* similar rankings. The state's most highly regarded school, University of Tennessee Knoxville, holds the rank of 44 for public national universities. Others of the state's four-year universities have significantly lower ratings than their out-of-state peer institutions. For example, Tennessee four year college graduation rates are low and applicant American College Testing (ACT) scores for Tennessee four year college undergraduate admissions are not at a Tier One level for national or regional institutions.

On another dimension, there is better news. Excellence is found in Tennessee in the commu-

nity colleges. Here, outcome measures demonstrate achievement of the institution's purposes for work force development and preparation for transfer to four-year colleges. Technology centers do promote job placements for their communities.

Research and Professional Campuses

In most states, there are a small number of universities, designated as research institutions, that seek and attain national rankings. These universities are regularly rated by three sources: *The Gourman Report*, *U.S. News and World Report's* "Best Colleges and Graduate Schools," and the National Research Council.

Besides these rankings, which include judgments regarding reputation, the National Science Foundation collects data on the performance of universities in attracting research and development funding. Also, individual faculty members bring high regard to a university when they attain national or international recognition such as National Academy of Sciences membership or Pulitzer prizes.

In what follows, the Council has collected and synthesized the various rankings on Tennessee higher education. Even if one does not agree fully with these rankings or indicators of excellence based on faculty performance, student characteristics, and research funding, they are used extensively by students, parents, faculty, and employers.

The Gourman Report (1997)

This ranking begins with a list of the "Top 100 Schools in the United States." This includes public and private undergraduate institutions. Of the top ten, four are public. A partial list of public institutions is provided below and there are no Tennessee public institutions in the top 100:

Figure 12

A Gourman Report Sampling of the Nation's Top 100 Colleges and Universities
The Gourman Report (1997)

Rank	Institution
7	University of California, Berkeley
9	University of Wisconsin at Madison
10	University of California at Los Angeles
28	University of North Carolina, Chapel Hill
34	University of Virginia
41	Georgia Institute of Technology
79	University of Florida
80	Louisiana State University
81	University of Alabama
82	University of Arkansas
84	University of Georgia
93	University of Alabama at Birmingham
95	Florida State University
	No public Tennessee university listed

The *Gourman Report* also rates several hundred institutions on a performance scale of one to five. The scale includes factors such as faculty qualifications and admission standards. *There are no public Tennessee institutions in the top two categories.* The University of Tennessee, Knoxville and the University of Memphis fall into the third category, "Acceptable Plus." In the next category down, "Adequate," six Tennessee universities appear. Austin Peay is rated as "Marginal."

Figure 13

Gourman Report Overall Ratings of Tennessee Universities
The Gourman Report 1997

Strong=4.99-4.41; Good=4.40-4.01; Acceptable Plus=3.99=3.51
Adequate=3.50-3.01; Marginal=2.99=2.01

Strong	None
Good	None
Adequate	3.17 University of Tennessee, Chattanooga
	3.13 Middle Tennessee State University
	3.10 University of Tennessee, Martin
	3.07 East Tennessee State University
	3.06 Tennessee Technological University
	3.04 Tennessee State University
Marginal	2.86 Austin Peay State University

The *Gourman Report* also rates higher education institutions on 138 disciplines and lists them if they receive a score between 4.0 and 5.0. Listed below is a sample of the number of times a state has been recognized for high quality disciplines within its institutions. Tennessee public universities have 18 undergraduate disciplines recognized as high quality.

Figure 14

A Gourman Report Sampling of Highly-Rated Public University Undergraduate Disciplines
The Gourman Report 1997

Rank	State
191	California
87	Illinois
87	Wisconsin
63	North Carolina
61	Virginia
58	Florida
46	Georgia
43	Missouri
28	Louisiana
18	Tennessee
11	South Carolina
7	Kentucky
4	Arkansas

Programs Ranked Between 4.0 and 5.0

Disciplines recognized as high quality among Tennessee's undergraduate public programs include: aerospace engineering, agricultural engineering, agriculture, agronomy, animal science, bacteriology/microbiology, botany, chemical engineering, civil engineering, electrical engineering, engineering sciences, forestry, horticulture, hotel/restaurant/institutional management, materials engineering/materials science, nuclear engineering, nursing, and physical therapy.

U.S. News and World Report (1998)

This publication ranks institutions by their mission and region. These include "Best National Universities" (public and private), Top 50 Public Universities, Best National Liberal Arts Colleges, or Best Regional Schools. Their rankings are based on up to 16 indicators of excellence. Each indicator is weighted, and a composite score compares peers. Indicators fall into seven broad categories: (1) academic reputation, (2) student retention, (3) faculty resources, (4) student selectivity, (5) financial resources, (6) alumni giving, and (7) graduation rates.

The Best National Universities section selects 50 top schools (public and private) and ranks them in Tier 1. The remainder is grouped in tiers two, three and four with 50 schools in each tier. There are a total of 200 ranked insti-

tutions. The highest-ranking public school in Tennessee is the University of Tennessee Knoxville, ranked in Tier 2. Middle Tennessee State University, Tennessee State University, and the University of Memphis are in Tier 4.

Figure 15

A U. S. News and World Report Sampling of Best National Universities

U. S. News and World Report 1998

Tier 1 is in rank order.

Tiers 2, 3, and 4 are in alphabetical order from U.S. News and World Report.

Tier 1	University of California, Berkeley University of Virginia University of North Carolina, Chapel Hill University of Wisconsin at Madison University of Illinois, Urbana Georgia Institute of Technology
Tier 2	North Carolina State, Raleigh University of Florida University of Georgia University of Missouri University of Tennessee, Knoxville Virginia Institute of Technology
Tier 3	Florida Institute of Technology Louisiana State University, Baton Rouge Mississippi State University University of Alabama University of Kentucky University of South Carolina
Tier 4	Illinois State University Louisiana Tech University Middle Tennessee State University Northern Illinois University Tennessee State University University of Memphis

The "Best National Universities" ratings are based on many criteria and selected Tennessee schools' data are included in the table below. The contrast between Tennessee schools and the University of Virginia is striking on all measures. These discrepancies demonstrate the large gap needed to be filled to achieve Tier 1 status.

Figure 16

Comparisons of Public Tennessee Institutions and the University of Virginia

U. S. News and World Report 1998

School	Academic Reputation 5.0=highest)	Graduation Rate	ACT 25th-75th % tile	Freshman in Top 10% of High School Class
University of Virginia	4.4	92%	27-31(Equiv.)	80%
University of Tennessee, Knoxville	3.2	56 %	21-26	24%
Middle Tennessee State University	1.9	40% ⁹	19-25 ³	18% ³
Tennessee State University	2.0	37%	17-21 ²	N/A
University of Memphis	2.3	34%	19-25	N/A

3- data not submitted as requested, 2-ACT not required by school, 4-data reported in previous years, 9-average for the previous four years when not reported, N/A means not available.

The National Merit Scholarship Corporation lists institutions with the most recipients in 1997 (*The Chronicle of Higher Education*, 1998). No public university in Tennessee is on the list. A sample of peer institutions is in the table below.

Figure 17

Comparison of College Freshmen Merit Scholars in 1997

Institution	Number of Scholars
University of California, Berkeley	251
University of Oklahoma	153
University of Florida	146
University of Alabama	71
For comparative purposes: University of Tennessee system for 1998	37*

U.S. News and World Report also ranks public national universities. Only one Tennessee University appears on the list. This ranking shows a total of 50 *public* institutions with the University of Tennessee, Knoxville ranking #44.

*Data supplied by University of Tennessee officials

Figure 18

A U. S. News and World Report Sampling of Top 50 Public National Universities
U. S. News and World Report 1998

Rank	University
1	University of California, Berkeley
2	University of Virginia
3	University of North Carolina, Chapel Hill
7	University of Wisconsin at Madison
13	Georgia Institute of Technology
23	University of Florida
26	University of Georgia
44	University of Tennessee

U.S. News & World Report on Graduate Schools ranks graduate programs within institutions. The Tennessee schools reviewed for rankings are displayed in the following table. There is great variability among programs.

Figure 19

U. S. News and World Report Ratings of Tennessee Public Graduate Programs
U.S. News and World Report (1998)

Program	UT Knoxville	UT Memphis	ETSU	TN Tech	Univ. of Memphis
Nursing	77	64	117		
Nurse Practitioner, Family		19	26		
Nurse Practitioner, Adult		19			
Library Science	14				
Business	43				
Law	48 Tier 1				Tier 4
Social Work	29				
Veterinary	13				
Education	48				
Speech/Language	21		x	x	10
Psychology	89			x	89
Rehabilitation	41			x	30
Counseling					
Pharmacy		7			
Physics	71			x	
Anesthesia		5			
Rural Medicine			6		
Music	86			x	
Entrepreneur-ship	21				
Law, Clinical Training	22				
Fine Arts	55				
English	62				
Chemistry	79			x	
Biological Sciences	86	108			
Printmaking	13				
Audiology		22			8

X= program is operated but was not ranked

The National Research Council's Report (1995) reviewed research doctoral programs in the United States. *There were no public doctoral-granting institutions in the state of Tennessee that appeared in the top quartile in any pro-*

gram fields. This is in contrast to Georgia and North Carolina's public programs.

The National Science Foundation collects data on research and development dollars. For fiscal year 1996, Tennessee does not appear on the list of the top 45 institutions for total research and development revenues. For solely federal expenditures for research and development, many institutions are rank ordered.

Figure 20

A Sampling of Federal Research and Development Expenditures
National Science Foundation, Fiscal Year 1996⁴

#1	Johns Hopkins University	\$710,119,000
#20	University of North Carolina, Chapel Hill	157,034,000
#30	University of Alabama, Birmingham	125,804,000
#50	University of Florida	84,973,000
#61	University of Tennessee System	73,724,000

Distinguished faculties propel an institution's reputation. Prestigious awards such as Pulitzer prizes, Guggenheim winners, Rhodes scholars or national memberships measure faculty regard. Only one faculty member in the Tennessee public higher education system has a distinction as a National Academy of Sciences member.

Figure 21

Number of National Academy of Sciences Members at Selected Universities⁵

University of California, Berkeley	281
University of Wisconsin at Madison	40
University of North Carolina, Chapel Hill	9
University of Georgia	8
University of Virginia	3
Georgia Institute of Technology	2
University of Tennessee, Knoxville	1

These data demonstrate the many dimensions of excellence used to rate national universities. The University of Tennessee, Knoxville is the institution most mentioned on several rankings.

⁴ These figures are for mathematics and science research, including medical research, on individual campuses. The exception is the University of Tennessee where data are for the entire system.

⁵ Data obtained directly from National Academy of Sciences membership office.

GOVERNOR'S COUNCIL ON HIGHER EDUCATION

Other institutions are recognized for their high quality graduate programs such as Speech and Language, Pharmacy, Anesthesia, Nurse Practitioner and Audiology at the University of Tennessee, Memphis, and Rural Medicine at East Tennessee State University.

Four Year Colleges and Master's Degree Institutions

Four-year universities are also evaluated on multiple definitions of excellence on a national basis. *U.S. News and World Report* (1998) has a separate ranking for liberal arts colleges and

The Council for Aid to Education (*The Chronicle of Higher Education*, 1998) tracks the institutions with the top fund raising. A separate allocation is monitored for alumni support. A select few are listed here in descending order.

Figure 23

A Sampling of Top Institutions in Alumni Financial Support
Council for Aid to Education 1996-97

University of California, Berkeley	\$57,586,111
University of Wisconsin at Madison	52,591,134
University of Nebraska	47,209,263
University of North Carolina, Chapel Hill	42,705,753
University of Tennessee System, 1998	15,303,712

Figure 22

Endowments per Student at Selected Public Institutions
National Association of College and University Business, June 30, 1997

Institution	Endowment	Enrollment	Amount per Student
University of Virginia	\$1,098,539,000	18,390	\$59,736
UNC, Chapel Hill & Foundation	789,524,000	21,709	36,369
Georgia Institute of Technology	775,394,000	12,330	62,887
University of South Alabama	313,819,000	9,728	32,259
University of Mississippi & Fdn.	175,625,000	9,664	18,173
For Comparative Purposes: University of Tennessee system	281,224,000	35,475	7,927

*As of January 1999, University of Tennessee system endowment is \$568 million

regional universities. Freshman qualifications reflect the caliber of students at a university. Satisfaction surveys provide information to the administration of the institution but are difficult to compare across universities due to the lack of uniform questionnaires. Institutions whose primary focus is undergraduate education typically receive less national recognition but serve an important purpose in preparing students for graduate study or the work force.

The National Association of College and University Business, as of June 30, 1997 (*Chronicle of Higher Education*, 1998), gathered statistics regarding the largest higher education institutional endowments per student. Endowments were classified by private and public institutions. The University of Tennessee has substantially increased its endowment since June 30, 1997. What follows are selections of the largest endowments at public institutions.

Universities regularly convert their research prowess into income. Listed below are the nation's ten top universities in terms of 1997 royalty income. The entire list includes a rank ordering of 100 institutions. No Tennessee university appears on the list.

Figure 24

Research Royalty Revenues for Selected Higher Education Institutions
Farm Report News March/April 1999

Institution	Royalties	Licenses	Patents	Start-ups
University of California System	\$61	528	206	13
Columbia University	\$46	201	43	4
Stanford University	\$34	272	64	15
Florida State University	\$30	11	10	1
Massachusetts Inst. of Technology	\$20	255	134	17
Michigan State University	\$18	41	37	2
University of Florida	\$18	61	47	0
University of Wisconsin, Madison	\$17	133	69	2
Harvard University	\$13	232	39	1
Carnegie Mellon University	\$13	19	4	3

There are no Tennessee institutions ranked in *U.S. News and World Report* (1998) for National Liberal Arts Colleges, but several Tennessee schools are found in the Best Regional Schools

Regional schools provide a full range of undergraduate and master's level programs. Rankings are based on academic reputation, freshman retention rate, graduation rate, percent of classes with enrollments under 20 and over 50, student /faculty ratio, percentage of faculty who are full time, SAT/ACT 25th-75th percentile, freshman in top 25% of high school class, admission acceptance rate and alumni giving rate.

For regional schools, Tennessee ranks within Tier 2 for four of its universities. The graduation rates are low for all four schools in comparison to Tier 2 graduation rates of from 45% to 60%. Lower ACT scores, fewer top students from the high school class, and academic reputation scores ranging from 2.9-3.1 contribute to their placement in Tier 2 versus Tier 1.

Figure 25

A U. S. News and World Report Sampling of Best Southern Regional Schools (Public and Private)

Tier 1 is in rank order. Tiers 2, 3 and 4 are in alphabetical order as in U. S. News

Tier 1	Appalachian State University University of North Carolina, Charlotte University of North Carolina, Wilmington
Tier 2	Austin Peay State University Tennessee Technological Univ. University of Tennessee, Chattanooga University of Tennessee, Martin
Tier 3	Albany State University (Georgia) Arkansas State University Kentucky State University
Tier 4	Alabama State University Augusta State University South Carolina State University

Figure 26

**U. S. News and World Report Tier 2 Best Regional Schools
Tennessee Public Institutions
U. S. News and World Report 1998**

Institution	Graduation Rate	ACT 25th-75th Percentile	Freshmen in Top 25% of High School Class	Academic Reputation Score (5.0=highest)
Austin Peay University	33%	17-18	28%	2.9
Tennessee Tech Univ	44%	19-25	52%	3.0
UT Chattanooga	40%	18-25	51%	3.1
UT Martin	36%	18-24	N/A	2.9

Other Four-year College Comparisons

The following Figure 27 lists the licensure results of Tennessee institutions for various professional undertakings. These passage rates are high. The Council reports these data, but cannot rank Tennessee with other states on this dimension because comparative data are not available.

Tennessee Student Migration

The migration patterns of Tennessee's high school graduates cannot easily be deduced because Tennessee does not now collect sufficient data on this dimension. However, the State does not appear to be retaining its best and brightest students. Overall, Tennessee is a net importer of college students. However, if one separates private enrollments from public enrollments, the state actually is a net exporter in the public sector.

Enrollment trends from 1970 to 1996 indicate that many comparison states are performing better than Tennessee in attracting students to their public institutions. Among comparison states, Tennessee's public institutions rank last, by a wide margin, in percentage enrollment growth during this period, increasing only by 29.6% versus North Carolina's 87.6% growth or Florida's 159%. Furthermore, in most cases, public enrollment growth either outstripped or kept pace with private enrollment growth; in Tennessee, private growth vastly outpaced public growth.

GOVERNOR'S COUNCIL ON HIGHER EDUCATION

Figure 27

Licensure passage Scores in Tennessee Public Universities, 1995-1997
1998 Annual Report of the Tennessee Higher Education Commission

Institution	Test	1995	Number	1996	Number	1997	Number
APSU	Nursing (BSN)	97.2%	71	93.3%	60	99.0%	74
ETSU	Nursing (AD)	86.4%	66	81.0%	84	95.2%	21
	Nursing (BSN)	87.2%	133	85.0%	107	82.6%	121
	Medical (Step 1)	86.7%	60	91.0%	57	95.0%	59
	Medical (Step 2)	80.8%	52	95.0%	55	98.0%	55
	Medical (Step 3)	--	--	80.0%	44	98.0%	57
MTSU	Medical Technology	100.0%	6	100.0%	8	100.0%	8
	Nursing	90.4%	73	98.4%	63	93.6%	59
TSU	Engineering	15.9%	69	33.0%	12	42.0%	67
	Nursing (AD)	84.1%	151	89.0%	117	82.0%	111
	Nursing (BSN)	83.3%	54	94.0%	34	97.0%	31
	Dental Hygiene	96.6%	29	91.0%	23	93.0%	29
	Medical Technology	83.0%	6	100.0%	6	88.0%	9
TTU	Engineering	76.5%	251	74.7%	275	84.5%	265
	Nursing (BSN)	93.0%	43	100.0%	41	100.0%	36
UM	Engineering	84.9%	53	66.0%	59	76.0%	59
	Law*	81.3%	107	89.0%	119	--	--
	Nursing (BSN)**	85%	80	92.5%	70	96%	87
UTC	Engineering	62.8%	86	59.0%	61	64.7%	68
	Nursing (BSN)	90.7%	97	91.7%	60	88.2%	51
	Physical Therapy	100.0%	30	90.0%	30	96.6%	30
UTK	Engineering	70.2%	151	70.8%	89	86.3%	153
	Nursing (BSN)	89.7%	97	89.1%	89	92.1%	77
	Law*	87.7%	131	83.2%	143	--	--
	Veterinary Medicine	96.4%		98.1%	52	95.4%	65
UTM	Engineering	--	--	--	--	100.0%	3
	Nursing (BSN)	100.0%	32	100.0%	28	100.0%	28
UTMHC	Nursing (BSN)	96.0%	47	87.0%	34	77.4%	31
	Dentistry	95.4%	77	95.3%	64	99.0%	81
	Pharmacy	100.0%	65	98.5%	65	98.5%	68
	Medical (Step 1)	94.1%	153	93.8%	162	94.4%	164
	Medical (Step 2)	97.0%	151	92.2%	153	97.0%	151
	Medical (Step 3)	97.1%	138	97.0%	133	97.0%	133
	Dental Hygiene	97.0%	30	100.0%	23	97.0%	33
	Medical Technology	86.0%	22	92.0%	13	82.0%	17
	Physical Therapy	98.3%	59	98.3%	59	98.2%	58

* Due to changes in testing agency procedures, complete scores for 1997 are not available

** Not in THEC report; data from Tennessee Board of Regents

Figure 28

A Sampling of Regional Total Fall Enrollments 1970-190
(Ranked in descending order by public percentage growth)

State	1970	1990	%Growth
Florida			
Public	81,239	211,159	159%
Private	43,411	104,308	104%
S. Carolina			
Public	34,356	87,344	154.2%
Private	18,655	24,626	32%
Georgia			
Public	80,162	159,013	98%
Private	21,259	64,257	202.3%
North Carolina			
Public	83,448	156,539	87.6%
Private	39,719	69,220	74.3%
Alabama			
Public	66,635	122,796	84%
Private	14,606	21,869	49.7%
Virginia			
Public	94,028	167,809	78.5%
Private	33,536	56,762	122.7%
Louisiana			
Public	93,221	147,238	57.9%
Private	19,601	27,507	40.3%
Kentucky			
Public	67,453	104,317	54.7%
Private	19,533	27,717	41.9%
Arkansas			
Public	40,775	62,094	52%
Private	7184	10,825	50.7%
Tennessee			
Public	89,126	115,467	29.6%
Private	33,536	51,065	52.3%

Source: State Comparisons of Education Statistics: 1969/70 to 1996/97, National Center for Education Statistics

However, it is the school selection patterns of "top" high school graduates that suggest Tennessee's competitive disadvantages. No system exists for tracking or comparing where applicants actually enroll. However, the College Board tracks colleges to which students request their SAT scores be sent. If one presumes that test-takers have their scores sent to the schools to which they plan to apply, tracking of requests offer an indicator of school selection among a finite group. Assuming a composite SAT score of at least 1200 as an indicator of top academic performance, then, one can extrapolate how well Tennessee's public schools attract in-state top students, as compared with other states. Figure 29 ranks each state by the percentage of Tennessee and comparison state applicants with scores of at least 1200 who send their scores to an in-state pub-

lic institution. Because each student can send scores to several schools, the percentages come to more than 100%.

Figure 29

1997 SAT Test-takers Sending Scores to In-state Schools
(Composite SAT score 1200 or higher)

State	Percentage In-state Requests
Virginia	187.99%
North Carolina	180.66%
Florida	126.79%
Georgia	101.22%
Tennessee	70.03%

Source: The College Entrance Examination Board

States such as Virginia and North Carolina attract applications from considerably higher portions of their top scorers. Measured on a different basis, Figure 31 illustrates in-state percentages of all schools requested by top test-takers in a given state. For example, the 2,296 students in Tennessee who scored a 1200 or better sent their scores to a total of 8,906 school destinations; of this total, Tennessee's public institutions received 18.05% of those requests.

Figure 30

Schools Receiving In-state SAT Requests
(Composite SAT Score 1200 or higher, 1997)

State	Percentage of Total Requests that are In-state
Virginia	45.48%
North Carolina	43.36%
Florida	32.07%
Georgia	26.59%
Wisconsin*	18.40%
Tennessee	18.05%

Wisconsin cannot be accurately measured against the other schools, as data were available only for UW Madison, while the other states reflect total numbers for all public schools. However, it is worth noting that, as a whole, Tennessee's public schools generated fewer requests from its top scorers than UW Madison generated as a single school.

Source: The College Board

Figure 31

Top Scoring Students Who Send SAT Scores to In-state Flagship(Composite SAT Score 1200 or Above, 1997)

Institution	Percentage of Students Sending Scores to In-state Flagship
University of North Carolina, Chapel Hill	65.01%
University of Virginia	62.25%
University of Florida	61.06%
University of Georgia	60.56%
University of Wisconsin at Madison	49.14%
North Carolina State University	46.98%
Virginia Institute of Technology	41.43%
Georgia Institute of Technology	40.66%
University of Tennessee, Knoxville	39.63%

Again, Tennessee ranks near the bottom in terms of generating applications from top Tennessee SAT scorers. In fact, North Carolina, Virginia, and Georgia each have two schools that outrank Tennessee's best-performing institution on this indicator. These patterns indicate that some benchmark states may be doing better than Tennessee at retaining top high school graduates.

Tennessee public higher education institutions will accept SAT scores. However, they prefer ACT test scores since they are administered, free of charge, to every high school student who wishes to take the test.

In addition, the patterns suggest that, at least in Tennessee, high-achieving students are willing to travel in order to attend the university of their choice. This indication is reinforced by results in "The American Freshman: National Norms for fall 1997," published by the American Council on Education and University of California at Los Angeles Higher Education Research Institute. Freshmen were asked to choose which reasons were "very important in selecting a college." Because they were allowed to choose more than one indicator, the percentages total to more than 100%. The top indicator, at 53.9%, was that "the college has a very good academic reputation." Following at second, with 50.3% was the indicator that "graduates of this college get good jobs," which is a corollary to acade-

mic reputation: the better a school's reputation, the better one's chances of obtaining a good job. Financial assistance followed at third, with 33.8%, and "wanted to live near home" ranked a distant tie for seventh.

Community Colleges and Technology Centers

Community colleges define excellence in different ways than universities. They are not compared nationally in widely distributed publications but are often evaluated by responsiveness to regional and local work force needs and the preparation of students who transfer to four-year colleges.

Community colleges play a vital role in the development of a state's economy by providing skilled workers. Licensure rates, job placement, core knowledge and skills, graduation and transfer rates, satisfaction of students, and satisfaction of alumni can measure excellence. Quality of faculty, measured by factors such as percentage of instructors with a master's degree or above, will also affect excellence. The Tennessee Board of Regents Annual Report Card (December 1998) provides a summary for every two-year institution in its system.

Tennessee has made great efforts to build and maintain high quality community colleges. The state should be proud when 85% of community college students pass licensure examinations. A job placement rate of 91% is to be commended. Graduation and transfer rates may appear low but they are not applicable to the entire student body. This is because some training programs do not terminate with graduation. Once students have transferred to a four-year institution, their performance in upper division coursework would be useful to track.

GOVERNOR'S COUNCIL ON HIGHER EDUCATION

Figure 32

Student Performance at Tennessee Two-year Public Institutions
Tennessee Board of Regents Annual Report Card (December 1998)

School	Licensure Pass Rate	Job Placement	National Test of Core At/ Above Average	Graduation or Transfer Rate	Program Accreditation
Chattanooga State Technical CC	89%	90%	50%	28%	100%
Cleveland State CC	94%	91%	55%	33%	100%
Columbia State CC	93%	97%	40%	43%	100%
Dyersburg State CC	89%	92%	50%	37%	100%
Jackson State CC	80%	89%	45%	34%	100%
Motlow State CC	96%	94%	47%	40%	100%
Nashville State Technical Institute	100%	89%	50%	37%	100%
Northeast State Technical CC	76%	90%	38%	42%	100%
Pellissippi State Technical CC	N/A	95%	58%	33%	100%
Roane State CC	86%	93%	45%	37%	100%
Shelby State CC	68%	78%	29%	36%	100%
State Technical Institute at Memphis	N/A	89%	38%	33%	100%
Volunteer State CC	91%	95%	53%	34%	100%
Walters State CC	86%	92%	45%	36%	100%
All Two-year Institutions	85%	91%	46%	35%	100%

Satisfaction rates for Tennessee community colleges are excellent. One measure of excellence is judgment by the consumer of the service. Shelby State Community College has the lowest alumni satisfaction rate of 77%. This institution also has the lowest percentage of students passing licensure examinations and the lowest job placement rate, neither of which is extremely low. This relationship lends credibility to the satisfaction responses.

Figure 33

Client Satisfaction Rates at Tennessee Two-year Public Institutions
Tennessee Board of Regents Annual Report Card (December 1998)

School	Student Satisfaction Very Satisfied or Satisfied	Alumni Satisfaction Excellent or Good
Chattanooga State Technical CC	91%	95%
Cleveland State CC	96%	86%
Columbia State CC	95%	91%
Dyersburg State CC	93%	89%
Jackson State CC	92%	89%
Motlow State CC	95%	92%
Nashville State Technical Institute	96%	96%
Northeast State Technical CC	92%	96%
Pellissippi State CC	92%	94%
Roane State CC	92%	95%
Shelby State CC	93%	77%
State Technical Inst. at Memphis	93%	93%
Volunteer State CC	94%	98%
Walters State CC	89%	96%
All Two-year Institutions	93%	93%

Technology centers can define excellence in a manner similar to community colleges. Passage on licensure examinations and job placement are crucial components of a high quality program. Tennessee technology centers have an overall licensure passage rate of 97 percent. This is high. The job placement rate is 88 percent. There is concern over the unavailability of data at certain centers. Completion rates instead of graduation or transfer rates are applicable to these training programs. Completion rates could be improved upon since there is a range of rates from 35 to 86 percent. Alumni satisfaction is high and 100 percent of programs are accredited.

GOVERNOR'S COUNCIL ON HIGHER EDUCATION

Figure 34

Student Performance at Tennessee Technology Centers
 Tennessee Board of Regents Annual Report Card (December 1998)

School	Licensure Pass Rate	Job Placement	Alumni Satisfaction	Completion Rates	Accreditation
Athens TC	100%	83%	91%	56%	100%
Chattanooga TC	N/A	89%	N/A	35%	100%
Covington TC	100%	98%	94%	65%	100%
Crossville TC	100%	82%	88%	61%	100%
Crump TC	100%	92%	83%	63%	100%
Dickson TC	98%	88%	95%	74%	100%
Elizabethon TC	95%	96%	100%	86%	100%
Harriman TC	100%	77%	92%	59%	100%
Hartsville TC	N/A	83%	85%	59%	100%
Hohenwald TC	98%	99%	92%	82%	100%
Jacksboro TC	100%	87%	88%	72%	100%
Jackson TC	95%	95%	93%	74%	100%
Knoxville TC	100%	79%	91%	62%	100%
Livingston TC	97%	90%	90%	62%	100%
McKenzie TC	N/A	94%	80%	46%	100%
McMinnville TC	100%	82%	100%	74%	100%
Memphis TC	100%	82%	95%	68%	100%
Morristown TC	98%	94%	80%	67%	100%
Murfreesboro TC	N/A	84%	96%	45%	100%
Nashville TC	97%	89%	88%	61%	100%
Newbern TC	100%	77%	89%	62%	100%
Oneida TC	100%	79%	100%	63%	100%
Paris TC	100%	95%	92%	54%	100%
Pulaski TC	88%	84%	96%	58%	100%
Ripley TC	100%	94%	100%	37%	100%
Shelbyville TC	100%	99%	94%	73%	100%
Whiteville TC	73%	86%	86%	64%	100%
All TTC's	97%	88%	90%	61%	100%

V

An Integrated Strategy for Achieving Tennessee Higher Education Excellence

Through its inquiries, observations, expert conversations, and deliberations, the Council has evolved a reciprocally reinforcing five-part strategy for achieving the previously portrayed quantitative and qualitative facets of excellence.

This integrated strategy involves:

- Defining and adopting a modern systemwide higher education mission
- Establishing a mission-related set of goals, and deducing realistic performance targets from them
- At least for purposes of performance evaluation, aligning programs, institutions, and operating components of the higher education system with these goals
- Linking necessary additional revenues to goals in a manner ensuring the system's high performance
- Implementing the above four conditions through construction of confidence-inspiring, goal-conscious, and performance-oriented new governance arrangements

A. Step One: Defining and Adopting a Modern, Systemwide Mission

The Council proposes the following as a mission statement for Tennessee's public higher education system:

Tennessee's Twenty-first Century system of higher education should elevate the overall knowledge of the state, open wide the doors to high quality advanced schooling for all

Tennesseans, and motivate them to take advantage of this enhanced opportunity.

In forming the Governor's Council on Excellence in Higher Education, Governor Don Sundquist requested that the Council provide him, the legislature, and citizens of the state with a practical blueprint for elevating Tennessee's higher education system into the nation's topmost ranks. This then is the Council's charge: elevating the effectiveness and regard of the state's higher education system.

In fulfilling that charge, the Council has taken into account the state's present education conditions, examined higher education trends specifically and societal trends generally, and distilled a set of reform strategies intended to bridge the gap between what Tennessee has now and what it must have for a successful future.

The following four trends emerge as likely factors in that future, affecting not only the shape of postsecondary education but also the manner in which states plan, fund, govern, organize and manage it. The Council's recommendations take these trends into account.

Developments in Higher Education

- **TREND:** The application of information technology in postsecondary education will continue at an accelerating pace, and it will affect almost every important facet of the instructional program.

The delivery of education will increasingly be organized around "asynchronous" learning, in which the teaching-learning relationship is separated in time and space (as opposed to "syn-

chronous learning," in which the teacher and the student share the same experience at the same time).

Asynchronous learning will not be limited to "distance learning." Students on established campuses will also acquire large portions of their information asynchronously; presently, an estimated 60 percent of on-campus students pursue at least some of their instructional program asynchronously.

The rise of asynchronous learning will facilitate tailoring of programs and public services to meet the education and economic development needs of individuals, industries and localities. Out of this, a better balance between academic instruction and workplace preparation can form.

Increasingly, policymakers will expect more information regarding students' learning outcomes, probably as represented by measured student competencies. The stress on learning outcomes and student competencies, which places less emphasis on where the student has acquired his or her learning and concentrates more on whether or not learning has occurred, should in turn prompt a wide variety of offerings and wider collaboration among institutions.

- **TREND:** Information technology will create pressures for a shift in the funding emphasis from the "assets" or "institution" side of the budget spectrum to a place closer to the "market" or "user" side.

Public purposes in postsecondary education have been pursued through budgetary approaches that focus on the funding of "assets" or "providers." This has occurred through state appropriations to institutions, through the funding of research at universities, often without adequate requirements of competition or peer review, and through comparatively small portions of funds devoted to portable student financial aid. It has occurred less frequently through policy instruments more inclusive of "users," such as student vouchers or contracts for services or programs with private

as well as public colleges and universities. As instructional approaches rely more upon complex interactive systems, the cost structure will change, and this will force changes in the bases on which postsecondary education budgets are formed. For example, the currently crucial budget concept of the "full-time equivalent" student (FTE) will be affected by the change in emphasis away from the accumulation of credits and onto competencies and performance outcomes. Governments may become more interested in paying for the results of learning and less satisfied with paying for the processes.

Effects may also be spread across a wider span of years, as students acquire their postsecondary education experiences in smaller increments via "lifelong learning." Thus, after an initial stage, the presence of effective instructional media in postsecondary education may become an effective brake on increases in the price and cost of a college education. As education delivery and access become less influenced by geography, states could engage in multi-state strategies to share resources in high quality, cost effective ways.

- **TREND:** Governance emphasis may move away from the "control" side of the policy spectrum and closer to the "enterprise" or "market" side, as interests shift from controlling the behavior of institutions to ensuring responsiveness to public needs. Conceptions of higher education governance that rely on hierarchical organization charts, control and reporting overlays will prove increasingly irrelevant. In their place will evolve mechanisms by which institutional performance can be better evaluated.

The emphasis of state oversight will change from concerns about such matters as proposed new program review and avoidance of program duplication to approaches that ensure consumer information and protection, and the presence of high quality instruction that is responsive to public needs.

The importance of "lifelong learning" will become more widely recognized and accepted

in response to individual needs to learn more and more frequently throughout life. Continuous learning will become a state and national imperative, as the customer base for postsecondary education expands and becomes more complex.

Conventional campuses will continue to serve the needs of many students, but unconventional and "virtual" or electronic forms will serve the needs of many others.

- **TREND: Low cost and flexible organizational forms will become the preferred responses to demands for access created by population growth and dispersal, and by the widespread availability of instructional information technology.**

Institutional types are emerging which do not fit traditional classifications (i.e.: research university, comprehensive university, community college, etc.) These include university centers, branch campuses, inter-institutional consortia, higher education centers in small localities, and many others. This trend toward diversification is expected to continue. Tennessee leads many states with its satellite centers in small communities and its efforts to expand distance learning. However, efforts in this direction have not occurred with any sense of overall coordination, thus reducing the efficient use and sharing of resources.

As Tennessee Moves Forward

While these changes may seem to blur the definitions of traditional classifications, missions, governance structures, and funding methods, they in fact demand increasingly sharper delineation of these very elements. The rise in asynchronous learning requires greater attention to the links between function, funding, and accountability. Without a clear sense of desired outcomes and of specified roles and functions, it is difficult to see how various resources and market forces can be integrated rather than duplicated. To use an overly simple metaphor, the concept of shared learning does not work if everyone has the bread to make a sandwich, but no one has any meat.

B. Step Two: Distilling Practical Goals and Performance Targets

The following section outlines four major goals for Tennessee's higher education system and illustrative performance targets intended to facilitate achievement of those goals. In addition, a description is provided of the means by which future progress toward such targets can be measured.

These goals and related targets are not intended to be recommended by the Governor or adopted by the Legislature. Rather, these illustrative ideas are meant to display for a strengthened Tennessee Higher Education Commission how it might frame performance incentives for the system that the Council recommends it create and sustain.

These goals should shape the actions of operating institutions, guide deployment of resources, provide a template against which progress can be systematically measured, and enable the governor, legislature, and citizens of Tennessee to judge the performance of their higher education system.

Goal I: Elevated Higher Education/ Job Training Levels for Tennesseans

Illustrative Systemwide Performance Targets

- In order to achieve parity with the region and, eventually, the nation, in each of the next ten years an average of 40,000 Tennesseans need to enroll in college and seek degrees. (The current annual number of public college degrees awarded in Tennessee approximates 25,000.)
- Each year, the share of the above number comprised of minority graduates approximates 5,000. (This figure represents a doubling of current levels.)

Goal II: National Renown for Public College and University Teaching Quality

Illustrative Systemwide Performance Targets

- Each year for the next ten years, the percent of Tennessee seniors scoring in the top quartile of their high school graduating class and the percent of those scoring above 1200 SAT and 30 ACT levels choosing to attend a Tennessee public college increases to match the regional average. (Each year, approximately 300 additional Tennessee high school top-rated seniors will enroll in state institutions.)
- Public college baccalaureate degree recipient "ACT COMP" scores elevated each year for five years an average of 1.1 points to a total system wide annual average equal to the nation of 186.0. (College Base Test results similarly should be elevated.)

Goal III: National Renown for Higher Education Research and Knowledge Creation

Illustrative Systemwide Performance Targets

- Each year for the next ten years, the state's public higher education research institutions should employ three additional members of the National Academy of Sciences and the National Academy of Engineering. (This would then total 31 such members for Tennessee public higher education, placing it among the nation's top twenty-five public institutions.)
- Each year for the next ten years, Tennessee's public higher education research institutions should generate an additional \$30 million in R & D funding. This is \$300 million additional within a decade, bringing Tennessee to a level equal to top 25 colleges. (Current Tennessee R & D funding is \$189 million.)

Goal IV: Sustain Current System's Concern for Efficiency and Productivity.

Illustrative Systemwide Performance Targets

- Tennessee achieves and maintains a cost per

baccalaureate degree equal to this study's benchmark states (Georgia, North Carolina, Wisconsin, and Virginia) average. (Tennessee now \$1,187; below average)

C. Step Three: Aligning Institutions and Programs with Missions

After establishing a modern mission and deducing from it goals for a reformed higher education system, steps should be taken by the Tennessee Higher Education Commission to further align programs, and operating institutions with goals. Only in this way can appropriate resource deployment patterns be developed and means for judging performance be constructed.

This realignment eventually might involve institutions being shifted from one system to another, subject to approval from the General Assembly. Such a realignment decision should fall within the purview of a newly-empowered Tennessee Higher Education Commission. However, at a minimum, THEC should arrange Tennessee higher education institutions within functional appraisal categories in order to evaluate their performance effectively.

Specificity of purpose facilitates accountability. This is the principle to be maximized is the assignment of missions to organizations and organizations to functional categories. However, there is more than one organizational configuration that is possible. Thus, what follows is illustrative. Final decisions regarding program organization and institutional affiliation should be made by the empowered Tennessee Higher Education Commission within the framework of law.

The following description assumes that all existing Tennessee higher education program delivery components continue to exist. However it does not presume that such components remain in their current institutional or governance system configuration. At least for purposes of measuring performance, THEC could place institutions in the following functional categories while still keeping them within their existing governance and institutional systems.

The following three functional groupings should be viewed by the Tennessee Higher Education Commission as a template for guiding decisions about future institutional alignments and program offerings. This Council understands fully the complexity of the current system, and the means by which existing programs and institutions have come to be a part of either the Tennessee Board of Regents or the University of Tennessee. There are many past commitments and current alignments that must be honored. There are many "one off" or idiosyncratic kinds of decisions that need to be made because of this intricate past history. Thus, no wholesale realignments of institutions are immediately possible. Over time, however, by using the following tripartite categorization program as a decision template, it will be possible to THEC to reshape Tennessee higher education incrementally into a more effective and logically ordered configuration.

Research and Advanced Professional Preparation Sector. The objective of this organizational or appraisal grouping would be to conduct research and researcher training and, over time, evolve into a world class, nationally regarded, research university. This sector would also include advanced professional preparation for fields such as law, medicine, and engineering. Decisions regarding what function or program was to be placed where geographically would depend upon careful analyses of existing institutional strengths and weaknesses, as well as some consideration for student geographic access for programs such as teacher training.⁶

Illustrative means for measuring the performance of this sector:

- National Research Council and other accepted professional rankings
- Faculty with international and national recognition
- Out-of-state graduate applications for Tennessee institutions

- Tennessee share of nation's higher education R&D resources

Four Year and Masters Degree Sector. The state's current ten public four-year colleges would be grouped under this label. Faculties of these colleges would be encouraged to excel at teaching.

Illustrative means for measuring the performance of this sector:

- Percentage of Tennessee top-ranked high school graduates choosing to attend Tennessee institutions
- ACT value added scores of Tennessee college graduates
- Acceptance rates of Tennessee college graduates to graduate and professional programs
- Surveyed satisfaction levels of: faculty, enrollees, graduates, parents, employers, and policymakers

Community College and Technology Center Sector. Here the function would be to concentrate upon the preparation of recent high school graduates and adults seeking either to gain admission to a four-year college, obtain an associate degree, undertake remedial and developmental study, or to obtain a technical certificate.

Regardless of future mission or governance changes, responsibility for delivering remedial and developmental education should be more clearly defined. Now, two-year institutions and technology centers should have sole responsibility for providing remedial education, which addresses needs of recently graduated high school students who are underprepared in basic academic skills. If students are admitted to a higher education institution with such deficiencies, courses to remediate their condition should be offered only by technology centers or two-year institutions. (It is recognized that the responsibility to offer developmental (or refresher) courses for adult students or others who may need assistance or occasional support in refining higher order learning skills is an appropriate function for all institutions.)

⁶ Such analyses of alignment can give consideration to the appropriate administrative location of higher education related endeavors such as the Tennessee Foreign Language Institute.

However, this is not to say that remedial courses could not be offered on university campuses by special arrangement with technology center or two-year college staff under policies developed by governing boards.

Illustrative means for measuring the performance of this sector:

- Surveyed satisfaction levels of: faculty, enrollees, graduates, parents, employers, and policymakers
- Transfer rates of undergraduates to four year institutions
- Passage rates of those sitting for associate degrees and technical certificates
- Employment levels of vocational/technical graduates and college graduates

Public Service

Public service comprises part of every segment's responsibilities. Site visits to Tennessee's campuses revealed that on an individual basis, post-secondary institutions are engaged in impressive initiatives in terms of linkage with local K-12 schools, community partnerships, and cooperative efforts with local businesses. The mix and extent of public service differs greatly depending on the mission of a given segment. For example, faculty at a technology center may conduct skills training classes for a local employer, while a baccalaureate school with a top education program may work with local K-12 teachers, and a research university may attract large industry and transfer newly developed technology to the surrounding community. However, as with distance learning initiatives, the current governance structure offers few system-wide links that help various institutions engage in complementary efforts.

D. Step Four: Strategic Financing

Issues involved in financing higher education in Tennessee divide into four categories:

Cost of Supporting Currently Projected Enrollments

For the next five years, the cost of maintaining

the existing participation rate, (maintaining a *status quo* of the proportion of the Tennessee population enrolled in college) is modest.⁷ Maintaining the current participation or student engagement rate (15.1% of the age cohort) and adjusting for a relatively high 2.26% annual inflation will necessitate, five years from now, an annual increase in state appropriations approximating \$134 million—an increase over current annual state higher education appropriations of some 13.5%.

Cost of Supporting Elevated Enrollments

However, because of Tennessee's low participation or student engagement rate in comparison with both the region and the nation, several alternative participation rates have been reviewed. The most ambitious of these would place Tennessee at the average of participation rates for comparison states (19.2%) by the end of another decade.

This goal, a participation rate of 19.2%, if phased in over a ten-year period, would produce a participation rate of 17.6% in five years and would cost approximately \$156 million more in year five than would holding the current participation rate constant.⁸ Put more simply, assuming 2.26 economic inflation, matching comparison state participation rates (19.2%) will cost approximately \$31 million more each year over the next ten years.⁹

Cost of Expanding Student Financial Aid

Student financial aid plays an important role in providing postsecondary education opportunities to Tennessee's citizens. Aid plays a particularly critical role for low-income and minority students. Without adequate financial assistance, the prospect that low-income and minority students will be able to enjoy postsecondary educational opportunities will be dim and Tennessee will be unable to provide equal educational opportunity for all its citizens.

⁷ If participation rates remain as now, additional future enrollment increments would be small, ranging from 227 new students in 1999-2000 to 895 in 2003-2004.

⁸ See accompanying financial estimate memorandum.

⁹ A participation rate of 17.2% would result in an additional 27,000 plus enrolled students in the fifth year.

Tennessee, like most states, relies heavily on loans to provide assistance to students. The Tennessee Student Assistance Corporation (TSAC), the state agency responsible for administering the state's student financial aid program, guarantees over \$350 million in student and parent loans for postsecondary education.

The state's grant program, the Tennessee Student Assistance Award Program, is funded at a small fraction of that amount—only \$20.4 million in 1997-98. The average grant award by sector is:

Figure 35

Tennessee Student Assistance Average Grant Awards 1997-1998

Independent Institutions	\$2,104
Public Two-Year	\$ 400
Public Four-Year	\$ 937
Technology Centers	\$ 178

Supplemental funding exists to provide additional aid to students attending independent, non-profit postsecondary institutions. However, these funds are restricted, and a large

number of students receive only the base amount. For students attending public postsecondary institutions, the amount of each grant has fallen woefully short of their needs.¹⁰ Ten thousand eligible applicants are turned down annually because of lack of funds in the program. These students all have a high need for financial assistance. Figure 35 illustrates this problem.

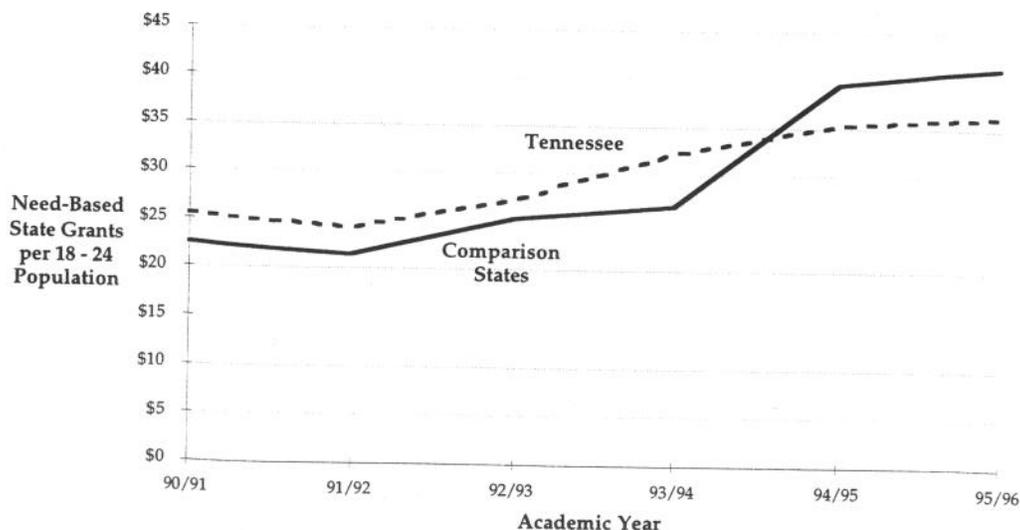
In addition, there is an under-served population that could be provided incentives to attend Tennessee institutions.

Another important Tennessee financial aid initiative is the Ned McWherter Scholars Program. This program encourages academically talented Tennessee high school graduates to attend college in Tennessee. Recipients receive a total of \$6,000 per year. Students must enroll full time and meet rigorous academic standards to continue to receive the grants. About 800 eligible students meet the rigorous criteria and apply, but only about 50 new awards are granted each year. One of the explicit goals for higher education is to keep

¹⁰ The maximum grant for public postsecondary institutions was \$1,290 in 1988-89 and increased only to \$1,530 by 1997-98.

Figure 36

Need-Based State Grants per 18-24 Population



Tennessee's "best and brightest" in Tennessee. A strengthened scholarship program is a reasonable way to do that. The recommended funding would cover an additional 600 students each year.

We propose that an additional annual sum of \$25 million be provided to address three important priorities.

- Adjust upward the maximum award in the Tennessee Student Assistance Award Program for students attending *public* higher education institutions.
- Increase the annual appropriation for the Tennessee Student Assistance Award Program supplementary awards available for students attending Tennessee *private* postsecondary education institutions.
- Increase the amounts allocated for the Ned McWherter Scholars Program to substantially increase the number of students who are eligible for this program but are unable to participate because of lack of funding.

Cost of Quality Improvement

The costs projected above take into account only inflation, enrollments, and student financial aid; they do not consider research- or teaching-oriented excellence goals.

In order to elevate Tennessee higher education into the nation's topmost ranks, a concerted effort will have to be made to enhance the number of high quality faculty members who conduct research and development efforts, and who strive to be world class teachers. Attracting and retaining such able individuals, and their graduate students, necessitates competing with a nation wide pool for talent. Presently, Tennessee faculty salaries are slightly lower than regional institutions but dramatically below national research institutions. (See Figure 37 for SREB comparisons.) This is a substantial impediment to the state's prevailing in a national competition.

Figure 38 displays faculty salaries for Tennessee institutions relative to the nation's major research universities.

Figure 37

1997-1998 Tennessee Average Faculty Salaries
Compared with Southern Regional Institutions

	Full Professor	SREB Full Professor	Associate Professor	SREB Full Professor	Assistant Professor	SREB Assistant Professor
Tennessee Institutions						
Research						
TBR, University of Memphis	63,000	*68,919	46,900	51,709	39,400	42,886
University of Tennessee, Knoxville	67,400	73,586	51,800	52,408	42,300	44,686
Average, Tennessee Research	65,200		49,350		40,850	
Other Four-Year						
TBR, Austin Peay State University	53,400	57,422	40,000	47,166	34,900	38,997
TBR, East Tenn. State University**	57,900	57,814	47,200	47,333	39,500	39,781
TBR, Middle Tenn. State University	59,600	57,814	45,800	47,333	37,800	39,781
TBR, Tennessee State University	55,900	57,814	48,700	47,333	37,500	39,781
TBR, Tennessee Technological Univ.	58,600	57,422	44,900	47,166	37,400	38,997
University of Tennessee, Chattanooga	55,500	57,422	46,000	47,166	37,100	38,997
Average, Tennessee Other Four-year	56,983		45,433		37,367	
Community College						
TBR, Chattanooga State Technical CC	48,700	50,736	39,700	41,065	33,000	35,999
TBR, Cleveland State CC	47,600	50,736	39,900	41,065	34,100	35,999
TBR, Columbia State CC	47,200	50,736	39,700	41,065	34,900	35,999
TBR, Dyersburg State CC	45,700	50,736	38,900	41,065	33,300	35,999
TBR, Jackson State CC	41,400	50,736	36,800	41,065	33,700	35,999
TBR, Motlow State CC		50,736	42,900	41,065	35,900	35,999
TBR, Northeast State Technical CC		50,736	37,500	41,065	30,300	35,999
TBR, Pellissippi State Technical CC	45,600	50,736	38,700	41,065	32,500	35,999
TBR, Roane State CC	47,300	50,736	38,900	41,065	33,500	35,999
TBR, Shelby State CC	42,900	50,736	37,600	41,065	30,900	35,999
TBR, State Technical Inst. of Memphis	47,500	50,736	38,200	41,065	32,100	35,999
TBR, Volunteer State CC	46,500	50,736	40,700	41,065	31,700	35,999
TBR, Walters State CC	50,400	50,736	40,400	41,065	31,500	35,999
Average, Tennessee Community College	46,436		39,223		32,877	

*Met criteria for classification as a SREB Four-Year 1 Institution in 1996-1997 and 1997-1998 (institutions not moved until year 3).

**SREB usually separates medical faculty salaries. However, these ETSU figures include medical faculty salaries.

Calculated from data collected by the AAUP. SREB weighted average salaries from 1997-1998 Report.

GOVERNOR'S COUNCIL ON HIGHER EDUCATION

Figure 38

1997-1998 Tennessee Average Faculty Salaries
Compared with National Institutions

<u>Other Institutions</u>	<u>Full Professor</u>	<u>Assoc. Professor</u>	<u>Asst. Professor</u>
Harvard	116,800	64,300	60,900
Massachusetts Institute of Technology	104,200	70,300	61,000
Yale	108,400	60,500	49,700
Duke	100,900	65,800	54,300
University of Michigan, Ann Arbor	91,900	65,900	53,000
University of Wisconsin, Madison	73,900	55,500	50,600
University of North Carolina, Chapel Hill	86,000	61,800	49,200
University of Virginia	90,900	61,300	48,900
University of Georgia	76,400	54,200	47,400
University of California, Berkeley	92,700	61,100	52,000
University of California, Los Angeles	92,600	60,700	52,000
Average, Other Institutions	94,064	61,945	52,636
<u>Tennessee Institutions</u>	<u>Full Professor</u>	<u>Assoc. Professor</u>	<u>Asst. Professor</u>
Tennessee Board of Regents, University of Memphis	63,000	46,900	39,400
University of Tennessee, Knoxville	67,400	51,800	42,300
Average, Tennessee Research	65,200	49,350	40,850
<u>Other Four-year</u>	<u>Full Professor</u>	<u>Assoc. Professor</u>	<u>Asst. Professor</u>
TBR, Austin Peay State University	53,400	40,000	34,900
TBR, East Tenn. State University	57,900	47,200	39,500
TBR, Middle Tenn. State University	59,600	45,800	37,800
TBR, Tennessee State University	55,900	48,700	37,500
TBR, Tennessee Technological University	59,600	44,900	37,400
University of Tennessee, Chattanooga	55,500	46,000	37,100
Average, Tennessee Other Four-year	56,983	45,433	37,367
<u>Community Colleges</u>	<u>Full Professor</u>	<u>Assoc. Professor</u>	<u>Asst. Professor</u>
TBR, Chattanooga State Technical CC	48,700	39,700	33,000
TBR, Cleveland State CC	47,600	39,900	34,100
TBR, Columbia State CC	47,200	39,700	34,900
TBR, Dyersburg State CC	45,700	38,900	33,300
TBR, Jackson State CC	41,400	36,800	33,700
TBR, Motlow State CC		42,900	35,900
TBR, Northeast State Technical CC		37,500	30,300
TBR, Pellissippi State Technical CC	45,600	38,700	32,500
TBR, Roane State CC	47,300	38,900	33,500
TBR, Shelby State CC	42,900	37,600	30,900
TBR, State Technical Institute of Memphis	47,500	38,200	32,100
TBR, Volunteer State CC	46,500	40,700	31,700
TBR, Walters State CC	50,400	40,400	31,500
Average, Tennessee Community College	46,436	39,223	32,877

Calculated from data collected by the AAUP.

Data submitted for Tennessee was incomplete; UT Martin and Nashville State Technical Institute data not provided.

Here can be seen that University of Tennessee and University of Memphis salaries are lower by far than institutions with which they must compete for talent. Tennessee research professors are underpaid by as much as \$30,000 annually at the full professor level and \$12,000 annually at the assistant professor level.

Tennessee never can attain higher education prominence under these conditions. As Council member and former Tennessee General Assembly member John Bragg wrote in a February 12, 1999, memorandum to the Council,

It is absolutely essential that we pay our faculties competitive salaries. To do otherwise will resign our colleges and uni-

versities to levels of mediocrity in the 21st Century.

The Governor's Council has no higher priority than recommending that selective salary areas at the state's premier research and teaching institutions be made competitive with national institutions. However, such a program must be approached strategically. Merely to increase salaries without insisting on elevating the quality associated with those higher salaries would result in substantial increases in state costs without a commensurate improvement in the quality of faculty and researchers. For example, increasing all salaries in Tennessee higher education to national norms would require an expenditure level that is probably unattainable.

A critical consideration is to ascertain which areas of research and teaching excellence the state should choose to emphasize. Trying to be in the top ranks nationally in every research and teaching area is to set an unrealistic goal and would be prohibitively expensive. Establishing those program and research areas where Tennessee will choose to focus its additional resources is an important part of the previously specified goal-setting process.

A strategic approach would incorporate these essential components, once priorities for emphasis are established:

- A focused, ambitious campaign to recruit and retain junior faculty (at the assistant and associate professor level) in order to attract the "best and the brightest" of young faculty nationally in those curricular and research areas of greatest importance to the state, and a concomitant increase in entry level pay in order to attract the best of them to Tennessee.
- An aggressive targeting of salary increases for recruiting "targets of opportunity" faculty, those faculty members who are nationally and world renowned—members of exclusive, prestigious national research academies such as the National Academy of Sciences and the National Academy of Engineering.

Tennessee currently has in place a creative concept designed to enhance quality by providing funds for "chairs of excellence." Although the concept is a good one, insufficient attention has been paid in the past to attracting nationally and internationally renowned faculty members to fill these chairs. The chairs of excellence program needs to elevate its sights to provide additional funds only to those faculty members who are truly exceptional and only in those academic areas of highest import. Thirty million dollars per year is allocated to enhance the chairs of excellence. The board of chairs should retain the flexibility to allocate these funds to appropriate chairs. One million dollars per chair is an approximation, not a constrained funding figure.

This strategy: elevating faculty salaries in high-demand fields, enhancing entry level pay for selected younger faculty, and increasing salaries

sufficiently to attract and retain the finest professors and researchers to Tennessee is an essential part of any approach to improving the quality of higher education in the state.

However, elevating faculty salaries, as crucial as such an action will be, is by itself insufficient. Particularly in the sciences, faculty members must be supplied with facilities and equipment necessary for modern research and stipends to support their graduate students. This, too, will require added levels of funding in support of quality.

Although the precise dollar figures are subject to the previously-described goal-setting process, the Council estimates that Tennessee can significantly improve the quality of its higher education system by phasing in a targeted professional enhancement program, including additional funds for salaries, stipends, equipment and facilities, for \$100 million annually by Year Five.

Georgia recently garnered substantial national attention by specifying four years of annual faculty salary increases averaging six percent. Georgia's policy made it clear that not every faculty member would receive this average amount. Some would receive less or nothing. Others would receive more or much more. Georgia's governor made such a pledge, and he and the legislature stayed the course. Georgia's overall salaries are far more nationally competitive as a consequence. Georgia's academic officials implemented the plan in a forceful and courageous manner. The regard in which Georgia's higher education institutions are now being held is starting to reflect these added resources and the manner in which they have been deployed.

The Council proposes the same strategy in Tennessee. Academic officials will have to engage in the difficult and unpleasant task of making judgments, rewarding faculty members who perform or who can perform, and overlooking those who cannot contribute research and teaching to the institution's efforts to achieve national regard.

The \$100 million increment in financial resources can, over time, result in Tennessee faculty salaries and research infrastructure arrangements being as competitive nationally as Georgia's.

Figure 39

Summarizing Total Additional Fifth Year Costs of Excellence

Components	Estimated Annual Fifth Year Cost
Inflation and Natural Enrollment Growth	\$134 million
Enhanced Student Enrollment Rate	\$156 million
Student Financial Aid Augmentation	\$25 million
Faculty and other Quality Enhancements	\$130 million
Approximate Total Additional Costs in Year Five	\$445 million

Likely Sources of Future Revenues

There are three sources that hold the prospect of substantially contributing to the above-listed needed new revenues. These include state revenue contributions, added payments from students in the form of tuition and fees, and cost savings from possible management efficiencies that could be reinvested in excellence.

Future State Revenues

UT Knoxville economist, Professor William Fox, estimates likely state revenues and higher education shares five years into the future as depicted in Figure 40.

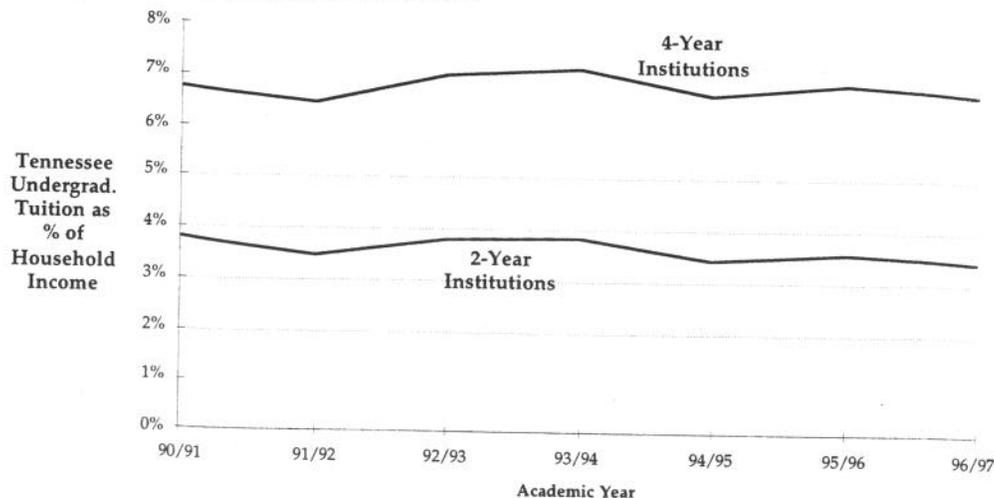
Figure 40

Tennessee State Revenue Projections (in billions)

Year	98-99	99-00	00-01	01-02	02-03	03-04
Revenues	\$7.021	\$7.367	\$7.736	\$8.157	\$8.578	\$9.029
% Change		4.93%	5.01%	5.44%	5.16%	5.26%
Higher Ed	\$0.97	\$1.02	\$1.07	\$1.12	\$1.18	\$1.24

Figure 41

Tennessee Undergraduate Tuition as Percentage of Household Income



Enhanced Student and Parental Contributions

Students and parents could also be expected to contribute to the enhanced quality of Tennessee's higher education system. They stand to benefit most immediately from higher quality higher education. Students will be expected to be better prepared for higher education, come to college having taken more college level courses in high school, and be expected to finish their college degrees in less time. Students and parents need to be prepared to assume an increased cost for the improvements being proposed, as is shown in Figure 41, Figure 42, and Figure 43.

Student tuition and fees could be increased at the same rates as the inflation proposed for state appropriations, 2.26%. This will result in approximately \$50 million in year five in increased revenue to the system.¹ An annual increase of 4% would result in annual revenue increases of \$96 million by Year Five.

In the past, student fees have been elevated by amounts between three and 13 percent. If student payments were elevated by a modest four or five percent, this source of revenue could generate \$70-\$80 million annually. If student fees were increased not only by an inflationary amount but also to be proportionate to growth in Tennessee household income, then even more revenue could be generated from this source. For example, aligning tuition increases with growth in personal income would generate an additional \$145 million per year by year five. This amount would more than compensate for the projected \$105 million revenue gap.

Figure 42

1996-1997 Undergraduate Tuition and Fees—Four-year Institutions

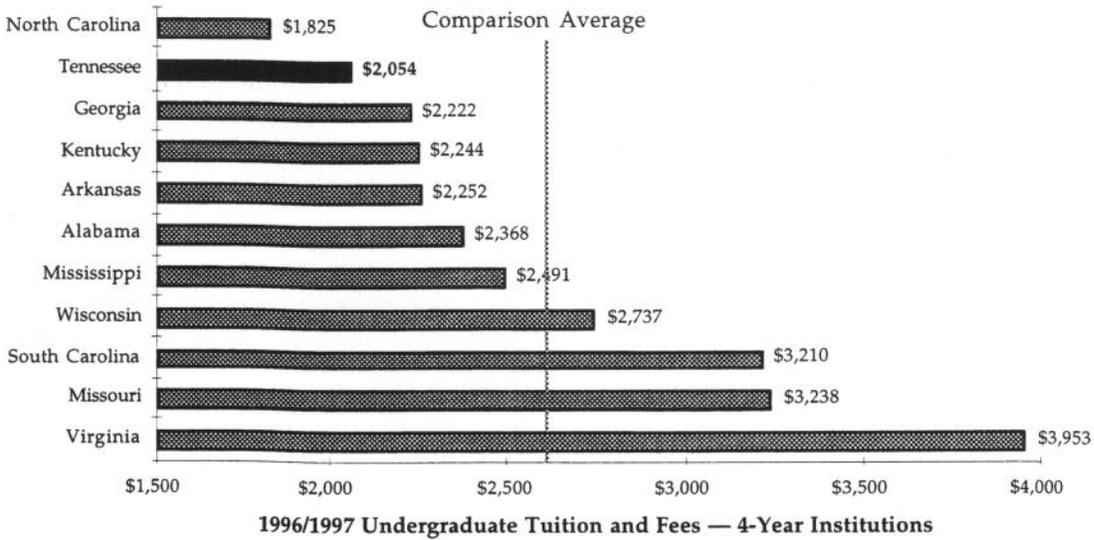
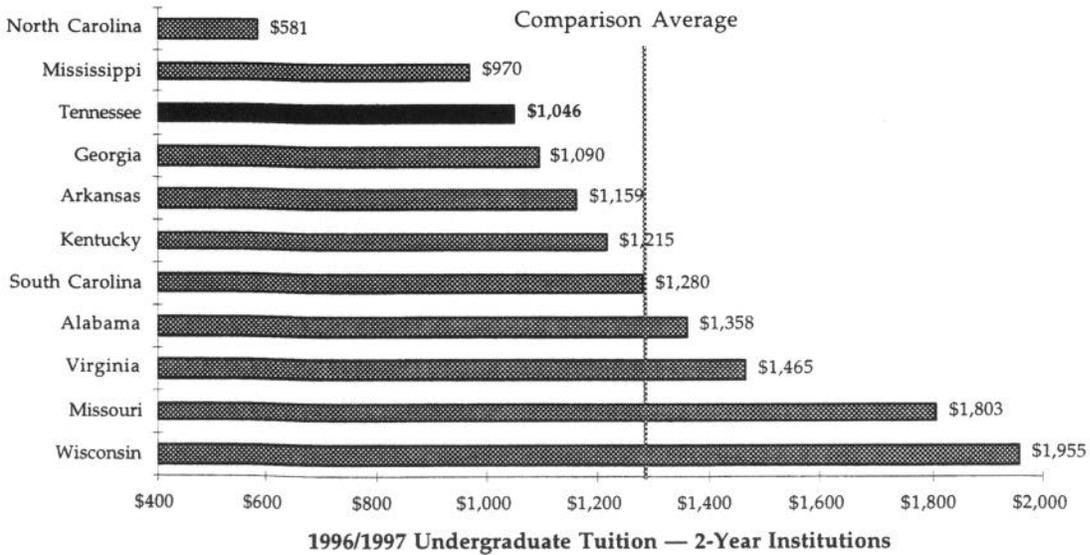


Figure 43

1996-1997 Undergraduate Tuition—Two-year Institutions



GOVERNOR'S COUNCIL ON HIGHER EDUCATION

Operating Efficiencies

The Council has not examined the operating efficiencies of Tennessee's present higher education systems. The present system is underfunded and, hence, the Council does not proclaim that it is hobbled by waste or bloat. However, systems that annually spend total revenues in the \$2 billion range almost assuredly have selected endeavors that can undertake belt tightening. Thus, the Council looks to management efficiencies to contribute \$20 million annually to meet new costs. The cost savings would not be removed from the higher education system, but would be made available for reinvestment in excellence.

The projected shortfall, between what the present higher education budget share, proposed tuition increases, and savings from operating efficiencies will generate and what the excellence improvements are estimated to cost, is an annual amount ranging from \$46 million in Year One to \$105 million in Year Five.

The Council, contending that taxation issues fall outside its purview, takes no position on the sources from which such added higher education revenues should come.

Capital Outlay

The above discussion is absent any consideration of capital outlay, specifically funding for

added facilities. The Council has not explored Tennessee higher education facility needs, and therefore cannot comment upon the topic. However, the Council is mindful of rapid developments in distance learning, Internet instruction, and other technologies. Hence, the Council would caution state policymakers to become increasingly skeptical of proposals for additional physical facilities for Tennessee's higher education.

Before any substantial additional capital projects are undertaken, the State should comprehensively and carefully create a higher education capital projects master plan. Such a plan should take into account the Tennessee Board of Regents and University of Tennessee as well as the facilities of the K-12 system and private higher education institutions.

Closing the Loop Between Resources and Performance

Goals are good, but unless they are connected to consequences they lose their power.

The logic of the Council's strategy is that the Tennessee Higher Education Commission, at least for purposes of evaluation, align institutions and missions so that goals can be achieved, place financial resources where they are needed to perform assigned missions, and design a system of governance so that authority is aligned with responsibility.

Figure 44

Summary of Annual Cost of Excellence in Millions of Dollars

Purposes	Year One	Year Two	Year Three	Year Four	Year Five
Quantitative Approaches to Excellence					
Increased Enrollments	\$28.2	\$57.9	\$89	\$121.9	\$156.3
Student Financial Aid	\$25	\$25	\$25	\$25	\$25
Qualitative Approaches to Excellence					
Chairs of Excellence	\$30	\$30	\$30	\$30	\$30
Research Enhancement	\$20	\$40	\$60	\$80	\$100
Total Increase For Excellence	\$103.2	\$152.9	\$204	\$256.9	\$311.3
Annual Costs of Maintaining Status Quo (Operating current system plus anticipated enrollment increases.)	\$23.5	\$50.6	\$77	\$106.1	\$133.9
Excellence plus Maintaining Status Quo	\$126.7	\$203.5	\$281	\$363	\$445.2
Revenues from 2.26% Annual Tuition and Fee Increases and 1% Operating Efficiencies	\$30	\$40	\$50	\$60	\$70
Added Higher Education State Revenue from Expected Economic Growth (No new taxes)	\$50	\$100	\$150	\$210	\$270
Estimated Net State Additional Cost	\$46.7	\$63.5	\$81	\$93	\$105.2
Estimate Annual Net New Costs (in millions)	\$46.7	\$16.8	\$17.5	\$12	\$12.2

If under this arrangement, progress is not made, if the number of individuals enrolled in college does not increase, if Tennessee rankings are not elevated among research universities, and if productivity is not enhanced, then several consequences are in order.

The proposed governance system permits holding operating segments of the system responsible for performing missions. If all else fails, new governing board members can be appointed with a mandate from the governor, the legislature, and the people to ensure that the system performs better.

E. Step Five: Governing with Confidence and Accountability

From its observations of governance systems in other sectors of society, campus visits to Tennessee colleges, trips to universities in other states, interactions with nationally regarded academic experts, readings of commissioned reports, and public conversations among its own members, the Council concludes that governance is a critical component in the reform of Tennessee public higher education. To undertake the previously described changes and then rely upon current governance arrangements to propel the state into national regard is likely to be more wishful than practical. Thus, it is to the governance structure that the Council turns for the "engine" of reform.

Two dimensions of governance present themselves as challenges to be met: (1) reinforcing or elevating authority among existing or reorganized higher education boards, and (2) constructing procedures by which governing board members can be appointed with enhanced confidence.

Enhanced Tennessee Higher Education Commission Authority

The Council contends that Tennessee would benefit from the services of a statewide higher education board with enhanced authority, powers in excess of those currently allocated to the Tennessee Higher Education Commission. The reinforced Tennessee Higher Education Commission recommended by the Council would have fifteen gubernatorially appointed and legislatively confirmed members serving six-year terms, once renewable.

A reinforced Tennessee Higher Education Commission should have responsibility for functions such as:

- Establishing system wide strategic goals
- Approving goals and performance targets for system operating segments
- Measuring operating segment performance, consistent with goal targets
- Selecting and evaluating its own chief executive officer
- Engaging with operating segments in the construction of unified and system wide annual budget requests for both operating revenues and capital projects
- Representing all operating segments to the governor and legislature
- Allocating state resources to operating segments, consistent with budget deliberation priorities
- Monitoring segment pursuit of mission, ensuring that institutions within segments are targeted on appropriate missions and functions
- Coordinating activities occurring across segments of the public higher education system
- Systematically reviewing, approving and, where appropriate, terminating Tennessee's publicly supported higher education programs

Selecting Capable Governance Leaders

Council deliberations suggest that current procedures for selecting and appointing members to Tennessee's various public higher education governing boards are falling short of generating sufficient public confidence. The Council believes that the legislature and governor should consider new selection methods, procedures that systematically seek and appoint to office the state's highest levels of talent.

Nominating Procedures

It should be understood that candidates for THEC and other Tennessee higher education board appointment should be selected from among the state's most able and highly regarded business, industrial, civic, academic, scientific philanthropic, entertainment, and artistic leaders. Qualities of intelligence, education, character, farsightedness, and public commit-

ment should be taken into account. As mentioned to Council members by the chancellor of the University of North Carolina at Chapel Hill, appointees should be of such character that the least notable item on their résumés is participation on a public governing body.

The Council acknowledges that there are multiple means by which individuals of such capable character can be selected and placed before the governor as nominees. Therefore the Council declines to specify how able candidates should be recruited and leaves this issue to the discretion of the governor. However, the governor should be mindful that elevating Tennessee's public higher education institutions into their rightful place in the 21st Century will require

careful attention to the recruitment and selection of remarkably able persons. Business as usual will not suffice for the future.

Appointment and Confirmation

The Council contends that once highly qualified candidates have been selected by whatever screening process is ultimately utilized, a governor should submit nominees to the legislature for confirmation. It is to be expected that the legislature will take the confirmation and appointment process every bit as seriously as the governor is here admonished to do, and display its concern by holding formal committee hearings for candidates and having a vote on nominees on the floor of each house.

VI

Closing

The Council has deliberated fully and, on occasion, passionately, about needed changes within its midst. The Council was a microcosm of Tennessee's views regarding higher education. Several of our members

desired far stronger changes, and others, far fewer. However, what has emerged is a set of ideas around which there is a consensus. Our hope is that these ideas will find favor with the governor, legislature, and the people of Tennessee.

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A Dissenting View

Robert F. Fogelman

Essentially, we were expected to construct a plan for improving the quality of life for Tennessee citizens through higher education. I believe strongly we failed in that mission.

If Tennessee is to compete effectively with the rest of the nation (and we are ranked consistently in the bottom 10 percent), and provide its citizens with material well being and personal fulfillment, we must have a first-rate education system, particularly higher education. We cannot achieve this with the present system or with council proposed "Band-Aid" fixes to that system.

I strongly believe that Tennessee should wipe the slate clean and eliminate the current higher education governance system. In its place should be a single board. It should be comprised of relatively few and remarkably capable members. It should be appointed by the governor with the concurrence of the legislature. It should have the power to select its own chief executive officer and have the authority to realign current institutions into sensible cate-

gories. It should possess discretion over the total higher education appropriations provided by the legislature.

The perceived political clout of the current higher education system is often mentioned as a reason to use only a "Band-Aid". I think it is time for our elected officials to rise above special and self interests, come to the aid of their state, and create a logical and well-planned higher education system which can benefit generations to come.

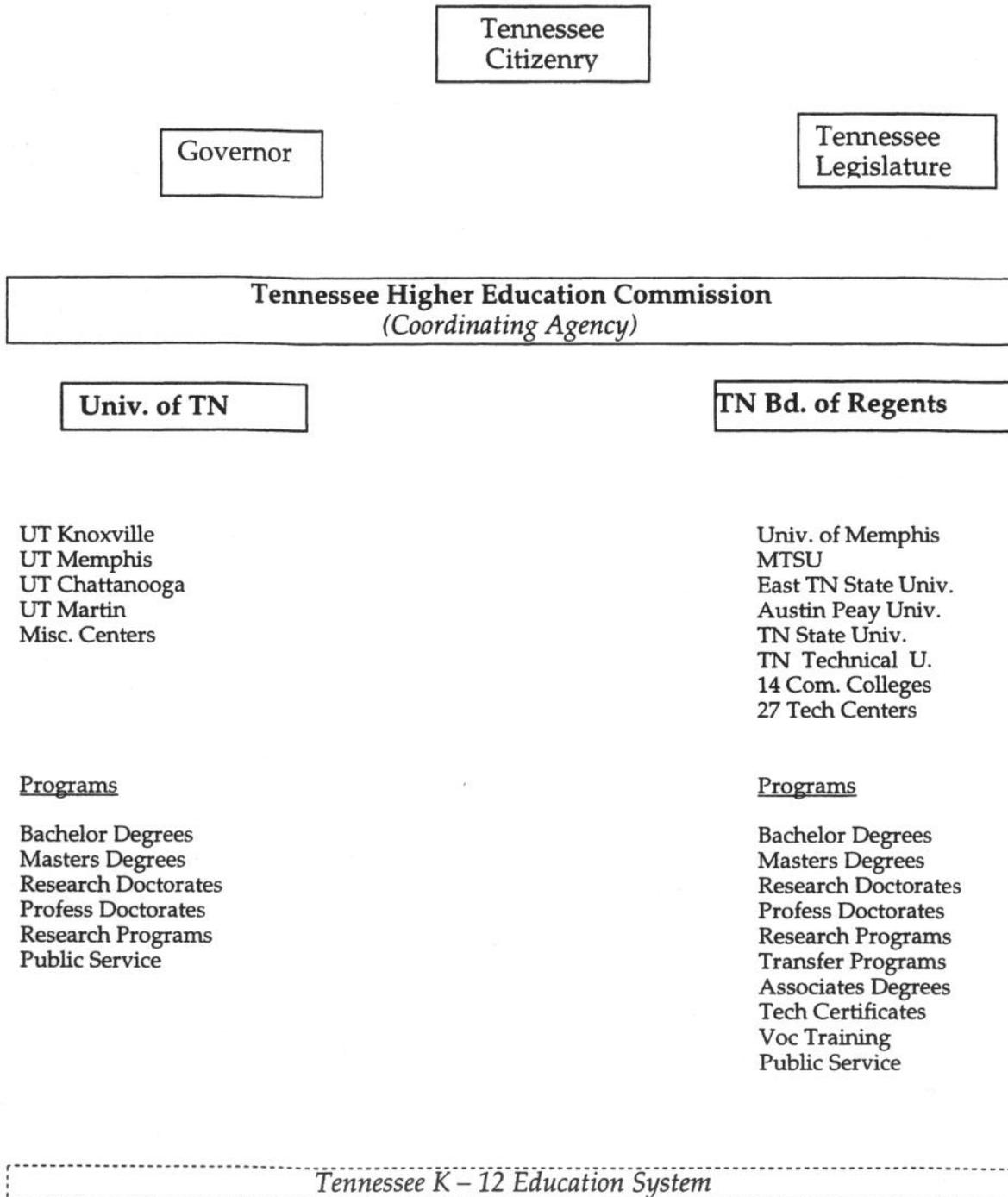
In short, our higher education governance council's current system and the proposed fixes are awkward, dilute authority, diffuse accountability, and invite inappropriate meddling by the legislature and governor.

It does not work now and is unlikely ever to work in the future.

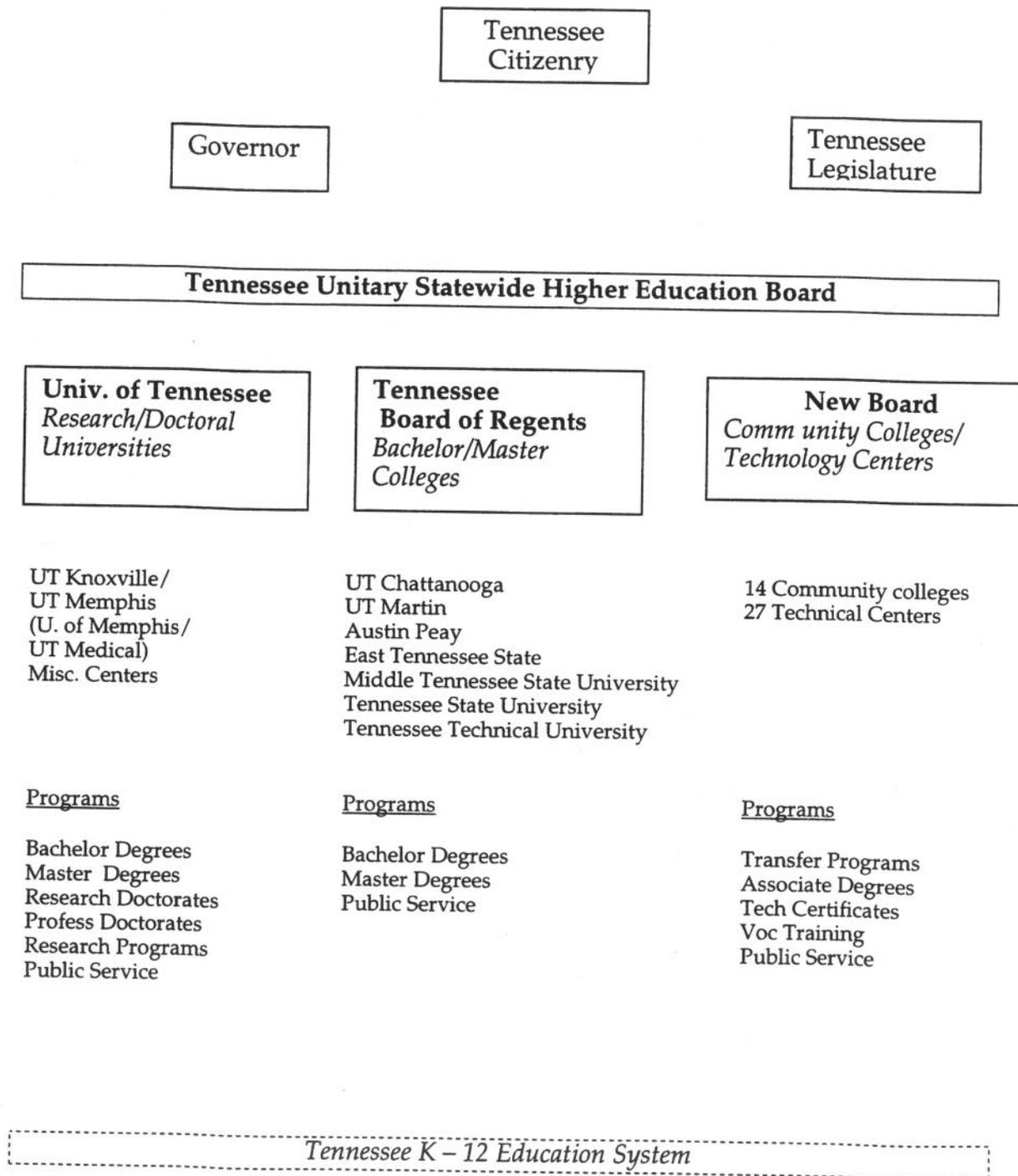
The illustrations on the following pages suggest how this new configuration would appear.

Status Quo

Current Tennessee Higher Education
Governance Arrangements, Institutional Alignments, and Programs



Alternative Tennessee Higher Education
Governance Arrangements, Institutional Alignments, and Programs



Financial Projection Details¹

Quantitative Approaches to Excellence

Increased Enrollments

The body of the text makes the point that Tennessee presently enrolls in postsecondary institutions a relatively low percent (15.1%) of the age 18-34 cohort. This is lower than the southern region and lower than the national rate (19.2 %).

Gerald Hayward, consultant to the Council, operating from a THEC data set calculated that a participation rate of 19.2% of the projected 18-34 age cohort would result in approximately 62,295 more postsecondary enrollees by year ten than are currently engaged in Tennessee. Participation rate is defined as the number of Tennessee residents who attend higher education in both public and private institutions.

Hayward's enrollment calculations are provided

increase in overall enrollments.

Of course, given population increases (the expansion of the number of individuals in the age cohort 18-34), some "natural" enrollment growth is to be expected. Hayward calculates this figure at 2,955 over the next five years.

A remaining number of new enrollees, 27,475, was taken to be an incremental student gain resulting from a .41 percent participation rate increase per year over five years. (2,955 plus 27,465 equals 30,420.)

A further assumption was made that most of these additional students would become affiliated with Tennessee higher education through community colleges or technology centers.

A challenge arises as to what dollar costs to impute to these five year enrollment gains, those associated with both "natural" enrollment

Year	18-34 Cohort	Cohort x.0151	Yr. by Yr.
1999-00	1,316,279	198,758	
2000-01	1,317,781	198,985	227
2001-02	1,322,878	199,755	770
2002-03	1,326,451	200,294	540
2003-04	1,332,378	201,189	895
2004-05	1,335,849	201,713	524
Five Year Total:		2,955	

ed on attached Spreadsheet 1.

In its subcommittee deliberations, the Council decided that it would be unreasonable for Tennessee higher education institutions to swallow such large enrollment increases in a five-year time horizon. Hence, the Council holds that, within ten years, reasonable efforts should be made to enhance participation and achieve a 19.2 percent student engagement target. To that end, in the upcoming five years, a specific effort should be made to enroll an additional approximate 6,000 students each year. By Year Five, this would result in a 30,420-student

increase and those resulting from participation rate gains. Hayward projected the costs of those added enrollees by determining the mean Tennessee per enrolled student appropriation, inflating that figure by 2.26% each year, and then multiplying by the number of additional enrollees each year. This is specified on attached Spreadsheet 2.

¹ All figures in this Appendix were reviewed with representatives of the State of Tennessee Comptroller's Office, and with financial staff of the University of Tennessee, Tennessee Board of Regents, and the Tennessee Higher Education Commission. Their review should not be taken as an endorsement of these figures.

Student Financial Aid

The Council uses a number here of \$25 million over current funding levels in each of the next five years. This stems from a TSAC estimate of \$21 million for additional income eligible student aid, UT and TBR financial staff estimating the cost to attract under-served populations, and a further estimate that \$4 million added to the McWherter program would fund an 600 additional students a year in this category. This \$4 million would provide student scholarships averaging \$6,667, which could be matched at least partially by the institution a student chooses to attend. These estimates do not take into account amounts compensated by federal and institutional student financial support.

Qualitatively Approaches to Excellence

Chairs of Excellence

The Council vote on this was to increase such chairs by approximately 30 each year for each of five years. The assumption is that the state will contribute \$1 million (or an amount determined by the Board of Chairs) per chair and expect higher education institutions to engage in fundraising efforts to match this amount for each chair. The cost to the state is \$30 million per year for each of five years for a total of \$150 million. However, following year five, it is not anticipated that there are recurring costs. The Board of Chairs would retain the discretion to allocate the exact amount of state money per chair, acknowledging the need for supplies and other expenses of the chairholder.

Research Enhancement

The assumption here is that UT and TBR institutions, under THEC urging, should undertake an analysis across operating departments and programs, determine which can achieve excellence most readily, and begin strategically to invest in faculty salary increases to achieve such a goal. The Council anticipates that each higher education system, and the institutions within it, would arrive at priorities regarding selected professorial, associate professor, and assistant

professor salaries. The estimate assigned to this effort at achieving excellence was \$20 million a year, incrementally, until by year five the total annual cost to the state would be \$100 million. These dollar figures were also anticipated to cover incremental cost in elevating doctoral student stipends and paying for some limited amounts of facility and other capital costs, particularly to attract scientists and engineers.

Maintaining the Status Quo

Council estimates rely upon a 2.26% annual projected inflation. This is high, given that inflation for 1998 was 1.6% nationally. (However, this 2.26% inflation rate is the average of Tennessee higher education appropriation increases for the past seven years. Staff from UT and TBR assert that the *status quo* ignores the underfunding of the system.)

Revenue Availability

State Appropriation Estimates

William Fox's estimates are specified in the report. For this Appendix, we assume that higher education will retain its current share of the state's operating budget. Under this assumption, it appears that Tennessee can sustain the status quo and "natural" enrollment growth.

However, quantitative and qualitative excellence initiatives would require added funding. The Council suggests they come from two additional sources.

Tuition and Fee Increases

If tuition and fees were elevated by 2.26 percent annually for each of the next five years, this would result in a revenue increases in excess of \$50 million by year five. This assumes that the base is the current amount of \$445 million.

Year	Percent Increase	Added Revenues
One	2.26	\$10,057
Two	2.26	\$20,341
Three	2.26	\$30,858
Four	2.26	\$41,612
Five	2.26	\$52,610

Operating Efficiencies

The Council undertook no studies of the efficiency of the existing higher education systems. It seemed that the systems, in their entirety, were underfunded. Hence, the Council did not wish to make any case for bloat or waste. However, Council members asserted from their collective experience that virtually any organization that expends in the realm of \$2 billion annually should be able to invoke operating

efficiencies in the range of at least one percent annually. Hence, the Council believes that a one-percent annual operating efficiency target should be established. However, savings resulting from such efficiency efforts should be retained in the system for the pursuit of excellence.

A one percent redirection of funding would amount, on a \$2 billion total base, to \$20 million annually.

Projection Four: Participation Rate Robust Increase; Variable Inflation Rates

Year	Population	Appropriations	THEC TN Enrollment	THEC TN Pub Fnr	THEC Approp/ student	Partic. Rate
1981-1982	1,368,332	\$ 709,198,800	179,355	174,416	\$ 4,066	13.3%
1982-1983	1,362,596	\$ 673,690,600	188,265	183,818	\$ 3,665	14.1%
1983-1984	1,360,055	\$ 758,148,600	194,959	191,392	\$ 3,961	14.7%
1984-1985	1,362,730	\$ 818,127,800	197,929	193,342	\$ 4,232	15.0%
1985-1986	1,368,507	\$ 879,858,800	195,971	190,838	\$ 4,611	14.9%
1986-1987	1,365,048	\$ 902,600,500	198,313	192,259	\$ 4,695	15.0%
1987-1988	1,365,414	\$ 915,680,200	201,076	194,114	\$ 4,717	15.2%
1988-1989	1,349,268	\$ 910,845,000	198,933	193,527	\$ 4,707	15.1%
1989-1990	1,343,771	\$ 967,968,200	199,024	193,410	\$ 5,005	15.1%
1990-1991	1,338,004	\$ 967,968,200	198,910	193,296	\$ 5,005	15.1%
1991-1992	1,327,885	\$ 967,968,200	204,525	198,910	\$ 5,005	15.1%
1992-1993	1,320,849	\$ 967,968,200	210,724	205,110	\$ 5,005	15.5%
1993-1994	1,316,767	\$ 967,968,200	216,716	211,102	\$ 5,005	15.9%
1994-1995	1,320,886	\$ 967,968,200	223,132	217,518	\$ 5,005	16.3%
1995-1996	1,318,653	\$ 967,968,200	229,175	223,561	\$ 5,005	16.7%
1996-1997	1,316,432	\$ 967,968,200	234,413	228,799	\$ 5,005	17.4%
1997-1998	1,317,036	\$ 967,968,200	239,321	233,707	\$ 5,005	17.6%
1998-1999	1,316,279	\$ 967,968,200	245,538	239,923	\$ 5,005	18.0%
1999-2000	1,317,781	\$ 967,968,200	253,183	247,569	\$ 5,005	18.4%
2000-2001	1,322,878	\$ 967,968,200	261,053	255,439	\$ 5,005	18.8%
2001-2002	1,326,451	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2002-2003	1,332,378	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2003-2004	1,335,849	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2004-2005	1,334,578	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2005-2006	1,331,527	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2006-2007	1,335,728	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2007-2008	1,347,351	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2008-2009	1,359,653	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2009-2010	1,371,329	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%
2010-2011	1,371,329	\$ 967,968,200	263,295	257,681	\$ 5,005	19.2%

0.41

Calculation for Enhanced Participation Rates:
 98-99 = 15.1; Goal is 19.2 in 10 years and then flat.
 Formula = (19.2-15.1)/10

PR Stable	Yr.	Total	Incr. Due to PR
\$ 23,545,128	1	\$ 51,741,805	\$ 28,196,677
\$ 50,556,636	2	\$ 108,447,532	\$ 57,890,896
\$ 77,011,392	3	\$ 166,050,077	\$ 89,038,684
\$ 106,121,600	4	\$ 228,065,337	\$ 121,943,737
\$ 133,878,985	5	\$ 290,159,638	\$ 156,280,654

Participation Rate Growth/Yr.
 0.0041

a	b	c	d
Infl. Rate = 1%	Infl. Rate = 1%	Infl. Rate = 2.26%	Infl. Rate = 4%
101%	101%	102.26%	104%
\$ 5,005 \$ 967,968,200	\$ 5,005 \$ 967,968,200	\$ 5,005 \$ 967,968,200	\$ 5,005 \$ 967,968,200
Approp	Approp	Approp	Approp
4,955 \$ 957,721,729	5,055 \$ 977,069,642	5,118 \$ 989,258,828	5,205 \$ 1,006,091,513
\$ 4,905 \$ 975,685,400	\$ 5,105 \$ 1,015,505,230	\$ 5,234 \$ 1,041,000,633	\$ 5,413 \$ 1,076,728,220
4,856 \$ 996,034,540	5,156 \$ 1,057,627,992	5,352 \$ 1,097,706,360	5,630 \$ 1,154,699,115
4,808 \$ 1,014,882,457	5,208 \$ 1,099,411,973	5,473 \$ 1,155,308,905	5,855 \$ 1,235,971,124
4,759 \$ 1,035,269,154	5,260 \$ 1,144,153,175	5,596 \$ 1,217,324,165	6,089 \$ 1,324,475,709
4,712 \$ 1,053,389,662	5,313 \$ 1,187,698,279	5,723 \$ 1,279,418,466	6,333 \$ 1,415,721,802
4,665 \$ 1,067,291,293	5,366 \$ 1,227,682,940	5,852 \$ 1,338,989,351	6,586 \$ 1,506,849,851
4,618 \$ 1,079,284,098	5,419 \$ 1,266,558,377	5,985 \$ 1,398,622,558	6,849 \$ 1,600,740,510
4,572 \$ 1,096,911,019	5,474 \$ 1,313,248,798	6,120 \$ 1,468,272,766	7,123 \$ 1,709,049,736
4,526 \$ 1,120,545,558	5,528 \$ 1,368,646,560	6,258 \$ 1,549,299,769	7,408 \$ 1,834,049,130
4,481 \$ 1,144,607,758	5,584 \$ 1,426,279,552	6,399 \$ 1,634,681,760	7,705 \$ 1,968,050,675
4,436 \$ 1,143,106,566	5,639 \$ 1,453,184,877	6,544 \$ 1,686,296,136	8,013 \$ 2,064,735,647

1999-2004: 5 Year % Change
 1999-2009: 10 Year % Change

21.6%
 46.0%

29.3%
 65.2%

40.7%
 95.6%

Projection Two: Participation Rate Stable; Variable Inflation Rates

Year	18 - 34		CBER Appropriations	THEC TN Enrollment	THEC Pub Enr	Partic Rate	Approp / student	Yr One	Yr Two	Yr Three	Yr Four	Yr Five	Inflation Rates				
	Population	%											a	b	c	d	
1981-1982	1,368,332		\$ 709,198,800	179,355	174,416	13.3%	\$ 4,066	\$ 23,545,128									
1982-1983	1,362,596		\$ 673,690,600	188,265	183,818	14.1%	\$ 3,665	\$ 50,556,636									
1983-1984	1,360,055		\$ 758,148,600	194,939	191,392	14.7%	\$ 3,961	\$ 77,011,392									
1984-1985	1,362,730		\$ 818,127,800	197,929	193,342	15.0%	\$ 4,232	\$ 106,121,600									
1985-1986	1,368,507		\$ 879,858,800	195,971	190,838	14.9%	\$ 4,611	\$ 133,878,985									
1986-1987	1,365,048		\$ 912,600,500	198,313	192,259	15.0%	\$ 4,695										
1987-1988	1,365,414		\$ 915,680,200	201,076	194,114	15.2%	\$ 4,717										
1988-1989	1,351,765		\$ 910,845,000	198,933	193,527	15.1%	\$ 4,707										
1989-1990	1,349,268		\$ 967,968,200	199,024	193,410	15.1%	\$ 5,005										
1990-1991	1,343,771		\$ 967,968,200	198,910	193,296	15.1%	\$ 5,005										
1991-1992	1,338,004		\$ 967,968,200	199,137	193,523	15.1%	\$ 4,955	\$ 957,721,729	\$ 5,055	\$ 977,069,642	\$ 967,968,200	\$ 967,968,200	\$ 5,005	\$ 967,968,200	\$ 5,005	\$ 967,968,200	
1992-1993	1,327,885		\$ 967,968,200	199,907	194,293	15.1%	\$ 4,905	\$ 949,257,859	\$ 5,105	\$ 987,999,125	\$ 987,999,125	\$ 987,999,125	\$ 5,234	\$ 1,012,803,956	\$ 5,413	\$ 1,047,563,821	
1993-1994	1,320,849		\$ 967,968,200	200,447	194,833	15.1%	\$ 4,856	\$ 943,505,618	\$ 5,156	\$ 1,001,850,751	\$ 1,001,850,751	\$ 1,001,850,751	\$ 5,352	\$ 1,039,815,464	\$ 5,630	\$ 1,093,802,533	
1994-1995	1,316,767		\$ 967,968,200	201,343	195,728	15.1%	\$ 4,808	\$ 936,666,321	\$ 5,208	\$ 1,014,681,218	\$ 1,014,681,218	\$ 1,014,681,218	\$ 5,473	\$ 1,066,270,220	\$ 5,855	\$ 1,140,715,870	
1995-1996	1,320,886		\$ 967,968,200	201,867	196,253	15.1%	\$ 4,759	\$ 931,562,522	\$ 5,260	\$ 1,029,539,239	\$ 1,029,539,239	\$ 1,029,539,239	\$ 5,596	\$ 1,095,380,428	\$ 6,089	\$ 1,191,798,217	
1996-1997	1,318,653		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,712	\$ 924,718,372	\$ 5,313	\$ 1,042,621,224	\$ 1,042,621,224	\$ 1,042,621,224	\$ 5,723	\$ 1,123,137,813	\$ 6,333	\$ 1,242,791,729	
1997-1998	1,316,432		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,665	\$ 914,575,241	\$ 5,366	\$ 1,052,016,847	\$ 1,052,016,847	\$ 1,052,016,847	\$ 5,852	\$ 1,147,396,701	\$ 6,586	\$ 1,291,238,460	
1998-1999	1,317,036		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,618	\$ 903,300,299	\$ 5,419	\$ 1,060,038,175	\$ 1,060,038,175	\$ 1,060,038,175	\$ 5,985	\$ 1,170,568,692	\$ 6,849	\$ 1,319,700,090	
1999-2000	1,316,279		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,572	\$ 897,169,714	\$ 5,474	\$ 1,074,113,605	\$ 1,074,113,605	\$ 1,074,113,605	\$ 6,120	\$ 1,200,908,583	\$ 7,123	\$ 1,397,841,426	
2000-2001	1,317,781		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,526	\$ 896,147,900	\$ 5,528	\$ 1,094,564,815	\$ 1,094,564,815	\$ 1,094,564,815	\$ 6,258	\$ 1,239,040,863	\$ 7,408	\$ 1,466,767,028	
2001-2002	1,322,878		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,481	\$ 895,516,583	\$ 5,584	\$ 1,115,890,560	\$ 1,115,890,560	\$ 1,115,890,560	\$ 6,399	\$ 1,278,939,961	\$ 7,705	\$ 1,539,760,677	
2002-2003	1,326,451		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,436	\$ 894,388,627	\$ 5,639	\$ 1,136,999,879	\$ 1,136,999,879	\$ 1,136,999,879	\$ 6,544	\$ 1,319,390,625	\$ 8,013	\$ 1,615,488,998	
2003-2004	1,332,378		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,390	\$ 893,173,400	\$ 5,700	\$ 1,158,199,600	\$ 1,158,199,600	\$ 1,158,199,600	\$ 6,700	\$ 1,369,999,600	\$ 8,500	\$ 1,680,000,000	
2004-2005	1,335,849		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,343	\$ 892,000,000	\$ 5,770	\$ 1,180,000,000	\$ 1,180,000,000	\$ 1,180,000,000	\$ 6,800	\$ 1,420,000,000	\$ 8,800	\$ 1,740,000,000	
2005-2006	1,334,578		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,296	\$ 890,800,000	\$ 5,840	\$ 1,200,000,000	\$ 1,200,000,000	\$ 1,200,000,000	\$ 6,900	\$ 1,480,000,000	\$ 9,100	\$ 1,810,000,000	
2006-2007	1,331,527		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,249	\$ 889,600,000	\$ 5,910	\$ 1,220,000,000	\$ 1,220,000,000	\$ 1,220,000,000	\$ 7,000	\$ 1,540,000,000	\$ 9,400	\$ 1,910,000,000	
2007-2008	1,335,728		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,202	\$ 888,400,000	\$ 5,980	\$ 1,240,000,000	\$ 1,240,000,000	\$ 1,240,000,000	\$ 7,100	\$ 1,610,000,000	\$ 9,700	\$ 2,000,000,000	
2008-2009	1,347,351		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,155	\$ 887,200,000	\$ 6,050	\$ 1,260,000,000	\$ 1,260,000,000	\$ 1,260,000,000	\$ 7,200	\$ 1,690,000,000	\$ 10,000	\$ 2,100,000,000	
2009-2010	1,359,653		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,108	\$ 886,000,000	\$ 6,120	\$ 1,280,000,000	\$ 1,280,000,000	\$ 1,280,000,000	\$ 7,300	\$ 1,780,000,000	\$ 10,300	\$ 2,200,000,000	
2010-2011	1,371,329		\$ 967,968,200	201,675	196,061	15.1%	\$ 4,061	\$ 884,800,000	\$ 6,190	\$ 1,300,000,000	\$ 1,300,000,000	\$ 1,300,000,000	\$ 7,400	\$ 1,870,000,000	\$ 10,600	\$ 2,300,000,000	

1999-2004: 5 Year % Change
1999-2009: 10 Year % Change

13.5% 29.3% 23.5%
6.7% 14.2% 53.0%
-3.4% -6.5%