

University of Tennessee and Tennessee Board of Regents

Task Force Report

Commissioned by

President Jan Simek and Chancellor Charles Manning

November 1, 2009



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Preamble

From 1990 to 2008, the number of students receiving bachelor's, master's, and doctoral degrees from Tennessee's public four-year institutions grew from 16,451 to 24,600, an increase of almost 50 percent (THEC, September 18, 2009). During the same time period, Tennessee public universities expanded their academic offerings to accommodate this growth. In these times of economic insecurity and drastically reduced state funding for public higher education, the leadership of the two systems of public higher education in Tennessee (The University of Tennessee and the Tennessee Board of Regents) joined together to conduct a thorough analysis of academic programming across the state.

In April, 2009, Tennessee Board of Regents (TBR) Chancellor Dr. Charles Manning and Interim University of Tennessee (UT) President Dr. Jan Simek convened a joint task force to review the academic programs offered by all public universities in the state to identify redundancies and unnecessary duplication, assess quality, ensure adequate access and recommend collaboration between and among institutions. The task force was co-chaired by Dr. Bonnie Yegidis, University of Tennessee Vice President for Academic Affairs and Student Success and Dr. Paula Myrick Short, Tennessee Board of Regents Vice Chancellor for Academic Affairs. Members of the task force were:

Dr. Bert Bach, Provost and Vice President for Academic Affairs, East Tennessee State University
Dr. Joe DiPietro, Vice President for Agriculture, University of Tennessee
Dr. Tristan Denley, Provost and VP for Academic Affairs, Austin Peay State University
Dr. Susan Martin, Provost, University of Tennessee, Knoxville
Dr. John Nolt, Faculty Senate President, University of Tennessee, Knoxville
Mr. Bob Hillhouse, Director, University of Tennessee Engineering Services
Dr. Jerald Ogg, Vice Chancellor for Academic Affairs, University of Tennessee, Martin
Dr. Phil Oldham, Vice Chancellor for Academic Affairs, University of Tennessee, Chattanooga
Dr. Cheryl Scheid, Vice Chancellor for Academic Affairs, University of Tennessee Health Science Center

Ms. Wendy Thompson, Vice Chancellor for Access and Diversity, Tennessee Board of Regents

Dr. Ralph Faudree, Provost, University of Memphis

Dr. Ed Stevens, Faculty Regent, TBR and Professor of Biology, University of Memphis

Dr. Katherine High, Chief of Staff, University of Tennessee

The committee relied on several sources of data to guide its work. **Education**

Crossroads, a project funded by the Comptroller of the Treasury, State of Tennessee, and compiled by The University of Tennessee Center for Business and Economic Research (December, 2007), provided data on Tennessee workforce needs and the educational attainment of Tennesseans. This report highlighted several startling statistics which point to the need to increase educational attainment in the state of Tennessee:

- Of the ten Tennessee occupations with the fastest projected growth between 2004-2014, all but two require a bachelor's degree or other post-secondary certificate.
- Only 83.1% of Tennessee's 18-24 year olds have a high school diploma. This is the 3rd worst percentage in the country, ahead of only Mississippi and Nevada.
- In 2004, just 16.7% of 9th graders in Tennessee graduated in a timely fashion from high school, went directly to college, and graduated within 6 years.
- While 36% of white 18 to 24 year old Tennesseans attend college, only 26% of non-white 18 to 24 year olds attend college. In Tennessee, the Hispanic population is growing faster than any other immigrant group, but only 7% of the Tennessee Hispanic population has a bachelor's degree.
- Tennessee's per capita personal income is about 89% of the national average.

In an April 2009 presentation to the Tennessee Higher Education Commission, the National Center for Higher Education Management Systems (NCHEMS) reported that only 23.4% of Tennesseans aged 25 to 64 held a bachelor's degree or higher, which is 42nd in the

nation. Further, in twelve of Tennessee's counties, fewer than 7.1% of the adults had a bachelor's degree.

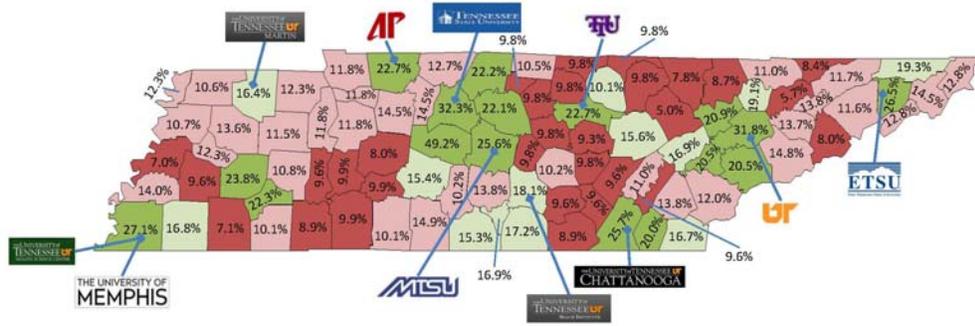
There is no doubt that Tennessee must increase the number of students who enroll in and graduate from college. However, with state resources shrinking, it is incumbent upon the higher education community to provide quality academic programs in the most efficient and effective way possible. This task force report addresses the following:

- The geographic locations of higher education institutions in Tennessee.
- An analysis of the mission of each Tennessee public university.
- An inventory and analysis of undergraduate programs in the state.
- An inventory and analysis of graduate programs in the state.
- Recommendations on opportunities for collaboration between UT and TBR.
- A summary of the review process for determining program quality and productivity.
- Steps for the future.

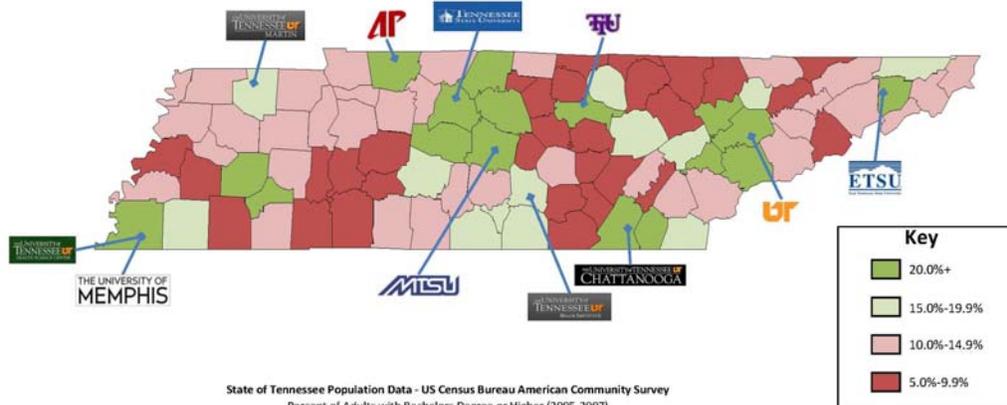
1: Geographic Locations of Higher Education Institutions in Tennessee

Tennessee is served by nine public universities and a comprehensive health science center. Six universities comprise the TBR system; UT is composed of 3 universities and a health science center. The universities are geographically distributed across the state (see Figures 1 and 2 below).

Percent of Adults with Bachelors Degree or Higher



Percent of Adults with Bachelors Degree or Higher



State of Tennessee Population Data - US Census Bureau American Community Survey
Percent of Adults with Bachelors Degree or Higher (2005-2007)

Anderson County	20.9%	Decatur County	9.6%	Henderson County	10.8%	Maury County	15.4%	Sequatchie County	9.6%
Bedford County	13.8%	DeKalb County	9.8%	Henry County	12.3%	McMinn County	13.8%	Sevier County	14.8%
Benton County	11.8%	Dickson County	14.5%	Hickman County	8.0%	McNairy County	10.1%	Shelby County	27.1%
Bledsoe County	9.6%	Dyer County	10.7%	Houston County	11.8%	Meigs County	9.6%	Smith County	9.8%
Blount County	20.5%	Fayette County	16.8%	Humphreys County	11.8%	Monroe County	12.0%	Stewart County	11.8%
Bradley County	20.0%	Fentress County	9.8%	Jackson County	9.8%	Montgomery County	22.7%	Sullivan County	19.3%
Campbell County	8.7%	Franklin County	17.2%	Jefferson County	13.7%	Moore County	16.9%	Sumner County	22.2%
Cannon County	9.8%	Gibson County	13.6%	Johnson County	12.8%	Morgan County	5.0%	Tipton County	14.0%
Carroll County	11.5%	Giles County	14.9%	Knox County	31.8%	Obion County	10.6%	Trousdale County	9.8%
Carter County	14.5%	Grainger County	5.7%	Lake County	12.3%	Overton County	10.1%	Unicoi County	12.8%
Cheatham County	14.5%	Greene County	11.6%	Lauderdale County	7.0%	Perry County	9.9%	Union County	19.1%
Chester County	22.3%	Grundy County	9.6%	Lawrence County	10.1%	Pickett County	9.8%	Van Buren County	9.8%
Claiborne County	11.0%	Hamblen County	13.8%	Lewis County	9.9%	Polk County	16.7%	Warren County	10.2%
Clay County	9.8%	Hamilton County	25.7%	Lincoln County	15.3%	Putnam County	22.7%	Washington County	26.5%
Cocke County	8.0%	Hancock County	8.4%	Loudon County	20.5%	Rhea County	11.0%	Wayne County	9.9%
Coffee County	18.1%	Hardeman County	7.1%	Macon County	10.5%	Roane County	16.9%	Weakley County	16.4%
Crockett County	12.3%	Hardin County	8.9%	Madison County	23.8%	Robertson County	12.7%	White County	9.3%
Cumberland County	15.6%	Hawkins County	11.7%	Marion County	8.9%	Rutherford County	25.6%	Williamson County	49.2%
Davidson County	32.3%	Haywood County	9.6%	Marshall County	10.2%	Scott County	7.8%	Wilson County	22.1%

Figures 1 and 2

These maps depict the location of each of these universities and also show the percentage of Tennesseans holding the baccalaureate degree by county. From these data, it may be seen that the residents of the counties in which the universities are located show the highest rates of completion of the baccalaureate degrees. This is also true for residents of neighboring counties.

Brief History of the University of Tennessee

The oldest institution in the state is the University of Tennessee, created by the Tennessee legislature in 1794, and located in Knoxville. In 1869, UT was designated a land grant institution. In 1879, the Medical Department of The University of Tennessee was established

originally in Nashville. In 1905, the location was moved to Memphis. The Tennessee legislature established a junior college of UT in Martin in 1927, and in 1951 the General Assembly converted it to a four-year degree-granting institution and it became the University of Tennessee Martin Branch. In 1967, the General Assembly changed the name to UT Martin, and the institution became an autonomous campus of The University of Tennessee. On July 1, 1969, The University of Chattanooga, a struggling private institution, merged with The University of Tennessee.

History of the Tennessee Board of Regents System of Higher Education

The State University and Community College System of Tennessee, better known as the Tennessee Board of Regents System (TBR), was created in 1972 by the Tennessee General Assembly. The action of the General Assembly combined into one system six state universities and ten community colleges, which were formerly governed by the Tennessee Board of Education.

In 1983 when the General Assembly transferred the state technical institutes and area vocational schools, now known as Tennessee Technology Centers, from the Board of Education to TBR. Gradually in the decade of the nineties, the technical institutes in Knoxville, Nashville, and Memphis were transformed to technical community colleges. At Memphis, the change also involved a merger between the State Technical Institute at Memphis with Shelby State Community College. The merged institution is now known as Southwest Tennessee Community College. More recently (2009), the three remaining technical community colleges were renamed as community colleges exclusively, which more clearly defines their comprehensive missions to provide pre-baccalaureate education and workforce educational opportunities.

Today the TBR System thus consists of forty-five (45) institutions, which includes six universities, thirteen community colleges, and twenty-six (26) technology centers. The collective outreach of these forty-five diverse institutions makes it possible for delivery of higher education classes in ninety of the state's ninety-five (95) counties, which brings access to college or technical education within driving distance for any citizen of Tennessee. The TBR's on-line educational program, the Regents Online Delivery Program (RODP), is a cooperative enterprise among all TBR institutions. The RODP enrolls more than 13,000 students annually. The TBR System, with a combined enrollment of over 200,000 students, is the sixth largest system of public higher education in the United States.

2. An Analysis of the Mission of Tennessee Public Universities

The state of Tennessee supports two distinct systems of public higher education for its citizens, the University of Tennessee and the Tennessee Board of Regents systems. The two systems share many of the same goals and objectives for providing post-secondary education in Tennessee. Each university has a distinctive mission that is consistent with the economic and socio-cultural needs of the region, the state, and the nation.

Tennessee Board of Regents (TBR)

The Tennessee Board of Regents (TBR) is the larger system of public higher education in the state of Tennessee and among the largest in the nation. It is comprised of six comprehensive universities, thirteen community colleges, and twenty-six technology centers located across the state of Tennessee. The Tennessee Board of Regents universities, community colleges, and technology centers also have joined in a collaborative, strategic planning effort to offer the Regents Online Degree Programs (RODP) and the Regents Online Continuing Education and Workforce Development (ROCE).

Each of these six TBR universities is a comprehensive, regional institution with outstanding academic programs and strong teaching faculty. Each provides a full array of undergraduate programs and select graduate programs tailored to the needs of the region and the state. These will be described as well.

Austin Peay State University (APSU) is has a Carnegie Classification as Master's Medium. It is a comprehensive university committed to raising the educational attainment of the citizenry. Over 9,000 students are enrolled in 50 undergraduate programs and 14 master degree programs that address regional needs and provide opportunities to connect university expertise with private and public resources. Austin Peay State University is recognized as serving the military community through provision of associate, bachelor and master degree programs at Ft. Campbell. Annual research awards to APSU are \$4 million dollars.

East Tennessee State University (ETSU) has a Carnegie Classification as Doctoral/Research University. ETSU is a comprehensive doctoral/research institution with the mission of improving the intellectual, cultural, economic, political, social, and health environment of Northeast Tennessee. Its unique focus supports the health and wellness needs of the people of Southern Appalachia, with a special emphasis on rural populations. Almost 12,000 students are enrolled in 160 undergraduate, master, and advanced graduate areas of study. Seventeen doctorates are offered with seven of those as research doctorates. An extensive array of graduate programs in the health sciences, including medicine, nursing, pharmacy and public and applied health is offered. Research at ETSU is conducted in both biomedical and non-medical arenas geared toward advancing the quality of life in the region, the state and beyond. Annual research awards are almost \$40 million.

Middle Tennessee State University (MTSU) has a Carnegie Classification as Master's Large. MTSU is a regional comprehensive university enrolling more than 23,000 students. Focusing on academic excellence with over 120 undergraduate and master programs, MTSU offers a number of highly focused graduate programs in the recording arts industry, and within the STEM and life sciences disciplines. Five research doctoral programs are also offered. Annual research awards exceed \$36 million. The institution is currently engaged in research in the area of biosensors, math/science education, obesity and physical activity in youth, computational chemistry, and aviation safety.

Tennessee State University (TSU) has a Carnegie Classification as Doctoral/Research University. TSU is an 1890 land grant institution, the state's historically black public university. As a comprehensive urban institution enrolling over 9,000 students, its role is to serve the communities of metropolitan Nashville, middle Tennessee and the state and nation as a whole. TSU offers students a very broad range of undergraduate, master and advanced graduate level within more than 142 areas. Five doctoral degrees are offered with four of those as research doctorates. The focus of the university is on appreciating the goals of a liberal education, cultural diversity and civic and social responsibility. TSU continues to conduct world class research in the following areas: Agriculture and Environmental Sciences, Astronomy, Control Systems, Health and Life Sciences, Robotics Sensors and Wireless Networks and Cyber Security. Annual research awards at TSU exceed \$34 million.

Tennessee Technological University (TTU) has a Carnegie Classification as Master's Large. TTU is the state's only technological university providing leadership in academic programming in engineering, the sciences, and related technologies for the benefit of the citizens of the state. Tennessee Technological University serves more than 10,000 students annually

from across the state and nation, but it retains a special commitment to enrich the lives of the people and communities in the Upper Cumberland region of the state. Its research focus is on applied research in energy, the STEM disciplines and engineering sciences. Students may enroll in over 150 undergraduate and masters programs. Additionally, TTU offers three research doctorates in environmental sciences, engineering and exceptional learning. Annual research awards at TTU exceed \$14 million.

The University of Memphis (UoM) has a Carnegie Classification as Research University High. It is a comprehensive metropolitan, research university with a mission to provide high quality educational experiences while pursuing new knowledge through research, artistic expression, and interdisciplinary and engaged scholarship. UoM is the only institution of higher learning in Tennessee with five Centers of Excellence, state-designated academic centers that receive special funding and attract the country's top scholars. For example, the FedEx Center for Supply Chain Management is the only center in the U.S. devoted to industrial/academic collaboration for research for cycle time issues. UoM has 25 Chairs of Excellence, more than any other university in Tennessee.

The UoM provides a broad array of innovative education programs at the baccalaureate, masters and doctoral levels capitalizing on its urban setting and region to address the challenges of our global society. Over 20,000 students are enrolled in 210 fields of study offered at the undergraduate, masters and advanced graduate specialist degrees including the Juris Doctorate. The University of Memphis offers 22 doctoral programs, with 18 of those as research doctoral programs. A number of its graduate programs are nationally ranked. Annual research awards to UoM are approximately \$45 million. There is a strong commitment to the ongoing development of research in science, technology and health care

Clearly, each of these six institutions provides public access to the comprehensive programs of the universities. These institutions have clear and distinctive missions that address the educational needs of the state of Tennessee. The University of Memphis, East Tennessee State University and Tennessee State University also have extensive research programs consistent with their missions. In addition, Tennessee State University, Tennessee Technological University, and Middle Tennessee State University are also members of Oak Ridge Associated Universities and collaborate with Oak Ridge National Laboratory to build research capacity for the state and nation.

The University of Tennessee (UT)

The University of Tennessee (UT) is a land-grant institution that serves the citizens of the state of Tennessee by providing broad access to, and success in, undergraduate, graduate and professional education; by pursuing research and scholarly achievement and its associated economic development; and ensuring educational outreach and preparedness for the global marketplace. The University achieves its mission and these broad purposes through the goals, objectives and strategic initiatives of each of its seven campuses or institutes. These entities have well articulated mission statements, goals and objectives that reflect their unique character address more specific needs for higher education within their respective communities, regions, and economic sectors. The campuses also serve the educational needs of the state of Tennessee and the nation as a whole. Collectively, the campuses/institutes of The University of Tennessee enroll nearly 48,000 students annually.

The University of Tennessee, Chattanooga (UTC) has a Carnegie Classification Master's Large. UTC is a comprehensive, metropolitan university committed to excellence in teaching, outreach, and research with special focus on serving the educational needs of the

region. UTC has developed very strong partnerships with industry and government in southeast Tennessee. These partnerships are designed to advance the educational societal and economic development of the region, the state and the nation. UTC's economic impact upon the Chattanooga region has been estimated to be \$250 million per year. UTC is home to the SimCenter, a National Center for Computational Engineering. UTC offers a full range of programs at the undergraduate level, and a wide array of master's degree programs, and focused doctoral programs, including a Ph. D. in Computational Engineering. Each of these advanced degrees is tied specifically to the economic needs of the region.

The University of Tennessee, Knoxville (UTK) has a Carnegie Classification Research Very High. UTK is the state's flagship, research institution. Its primary purpose is to move the frontiers of human knowledge and enrich and elevate society. The specific mission of UTK is to provide a high quality educational experience to undergraduate students in a broadly diverse learning environment; to advance learning by engaging in scientific research, humanistic scholarship and artistic creation; to conduct research, teaching, and outreach to improve human and animal medicine and health; to improve the quality of life; increase agricultural productivity; protect the environment; promote the well-being of families and communities; and serve as an engine for economic and cultural development. UTK also provides the academic programs of the Institute of Agriculture (UTIA). UTOA is a separate administrative entity of the University of Tennessee and provides educational outreach, extension and research programs in every county of Tennessee.

Over 27,000 students are enrolled across baccalaureate, masters, advanced graduate degrees and the research doctoral programs of UTK. The University offers over 240 degree programs including 85 masters degree programs and advanced graduate specialist degrees

including the Juris Doctor and the Doctor of Veterinary Medicine. Additionally, 57 research doctoral programs are offered. Annual research expenditures to the UTK are approximately \$160 million a year. UTK is consistently ranked among the top public research universities in the southeast and the nation.

University of Tennessee Health Science Center (UTHSC) has a Carnegie Classification as Research University Very High. It is the flagship health sciences research institution of the state of Tennessee, bringing the benefits of the health sciences to the achievement and maintenance of human health, with a focus on the state's citizens and the region. The mission of the UTHSC is to improve human health through education, research, clinical care and public services. UTHSC is comprised of the Colleges of Medicine, Dentistry, Nursing, Pharmacy and the Allied Health Sciences. Each of the colleges provides graduate and post graduate education within these disciplines. UTHSC prepares most of the physicians, dentists and pharmacists in the state of Tennessee.

The research mission of UTHSC is to conduct a program of research and discovery designed to detect, prevent, and treat human disease, as well as to discover new therapeutic and diagnostic approaches and determine safe and effective treatments and health practices. Annual research expenditures at the UUTHSC are nearly \$60 million.

The University of Tennessee, Martin (UTM) has a Carnegie Classification as Master's Medium. UTM is a comprehensive, regional institution providing primarily baccalaureate level programs to citizens of west Tennessee. UTM offers students both a traditional, on campus collegiate environment and also access statewide to on-line educational programs. The university is dedicated to expanding access to higher education through dual enrollment offerings and by providing access to higher education statewide via UT OnLine, a system-wide distance

learning initiative. The University of Tennessee, Martin provides a degree completion program fully available on line, the Bachelor of Undergraduate Studies. UT OnLine also markets access to dozens of graduate programs of the University of Tennessee.

Other UT Entities. In addition to these five campuses, the University of Tennessee includes the University of Tennessee Space Institute (UTSI), the Institute of Public Service (IPS), and a unique relationship to the Oak Ridge National Laboratory via UT-Battelle, LLC. UT-Battelle was established in 2000 as a private not-for-profit company for the sole purpose of managing and operating the Oak Ridge National Laboratory for the U.S. Department of Energy. Formed as a 50-50 limited liability partnership between the University of Tennessee and Battelle Memorial Institute, UT-Battelle is the legal entity responsible for delivering the Department of Energy's research mission at ORNL.

The UT Space Institute (UTSI) offers graduate programs in engineering, physics, and math, and is a resource for the professional development of engineers and scientists in middle Tennessee. Educational collaborations are in place with Arnold Engineering Development Center (AEDC) and other science and engineering industrial partners. UTSI enrolls graduate students only; its academic programs are a part of the College of Engineering at UTK.

The Institute of Public Service (IPS) does not grant academic degrees per se. Rather, it is a statewide entity designed to promote good government at all levels and to support economic development across the state of Tennessee. The Oak Ridge National Laboratory (ORNL), managed through a partnership of University of Tennessee and Battelle is a state and federally supported research entity that consists of over \$3 billion in research facilities, equipment and expertise located in East Tennessee. ORNL is home to the world's largest supercomputer, the

Spallation Neutron Source, and is poised to address the nation's most challenging science and engineering questions.

Critical Observations

A review of the two systems of public higher education in Tennessee reveals a number of compelling observations:

- Each of the systems provides broad access to post secondary education opportunities in the state of Tennessee. This is a critical need in Tennessee as the state ranks near the bottom nationally on the number of citizens participating in any form of post secondary education. State and federal data consistently show that higher education attainment is positively associated with improved well being of individuals and families and with enhanced economic sufficiency.
- Each of the two systems is comprised of universities and institutes in the University of Tennessee system and universities, community colleges, and technology centers in the Tennessee Board of Regents system that uniquely meet the educational needs of the state of Tennessee.
- Several Tennessee Board of Regents and UT campuses institutions provide access to high quality graduate and professional degrees that are high need across the state of Tennessee, such as nursing, education, science and engineering. Of note are the medical and pharmacy degrees offered at ETSU, UTHSC, and the Juris Doctor degree at University of Memphis and UTK. These institutions provide rich educational and research opportunities to students and the regional communities they serve.
- The University of Tennessee system provides access to the most competitive, highest ranking undergraduate, graduate and professional degree programs across the

state of Tennessee, the region and the nation. In addition the UT system also encompasses a number of unique entities that provide service and expertise to the state and beyond, including the Institute of Agriculture, the Institute of Public Service, and the resources of Oak Ridge National Laboratory. The UT system, comprised of 3 comprehensive university campuses and one academic health science center, provides facilities, resources and expertise that foster innovation, discovery, and economic development within the state. One measure of this is annual research expenditures which totaled more than 375 million for the system last year.

- The Tennessee Board of Regents system is well suited to meet the state goal of graduating more people in Tennessee with college degrees given the diversity of institutions that it encompasses, the broad geographic distribution of these institutions and the well integrated nature of its educational program. Of particular note are 1) the standardized general education curriculum which fosters seamless transfer of students from the community college to the university setting and 2) the Regents Online Degree Program (RODP) which provides statewide access to high quality educational programs for all students enrolled in TBR schools. The TBR system also provides a unique service to local community by providing academic programs that are specifically designed to meet the needs of local business communities.

3. Undergraduate Programs

As of January 2009, there were a total of 484 active undergraduate baccalaureate programs offered within the University of Tennessee and Tennessee Board of Regents systems. Although there is clearly significant duplication of programs among the nine undergraduate campuses, it is important to differentiate “necessary” from “unnecessary” duplication. For

example, many of the liberal arts and science disciplines such as Math, English, Chemistry, and History are essential elements of any comprehensive university and provide fundamental educational competencies for all undergraduate students. The fact that these programs are duplicated at all Tennessee public universities should be expected and should not be a source of concern, unless other program outcomes (e.g., graduation rate) fail to meet reasonable expectations.

On the other hand, duplication of the more specialized, costly academic programs in areas such as Allied Health, Engineering, Architecture, and Agriculture might well be considered “unnecessary” duplication and not a reasonable application of additional public investment, especially during difficult economic times. However, other factors such as the unique geography of Tennessee, local needs, and market demand for graduates within the state must also be considered carefully.

With that in mind, the task force explored to what extent “unnecessary” duplication of undergraduate programs currently exists within the two state university systems in order to form the basis for any recommendations on overall efficiency and effectiveness. A summary of all undergraduate program offerings by all TBR and UT campuses was reviewed by major CIP (Classification of Instructional Program) codes. This coding system, developed by the U.S. Department of Education, provides a taxonomic scheme to support the accurate tracking, assessment, and reporting of fields of study and program activity. By listing our total academic program inventory in this manner it is possible to undertake a limited assessment of program duplication.

This CIP analysis alone, however, fails to tell the whole story and can in fact be misleading. For example, there are 54 separate business programs offered across the nine

campuses. In some cases, such as UT-Chattanooga, the various specialty areas of Accounting, Finance, Marketing, Management, are treated as separate concentrations within the single degree program of Bachelor of Science in business administration. On other campuses, such as East Tennessee State University--all of these Business disciplines are considered separate degree programs and majors. Clearly, the complexity of academic programming is typically customized to fit the unique mission and culture of a given campus, which often complicates efforts for direct comparisons.

Another important consideration to any analysis of program duplication necessarily involves individual program quality and fiscal viability. This concern has been effectively addressed by the campus-based academic program review. The academic program review process involves an external consultant and is required of every active academic program every five years. This review provides the campus administration an excellent opportunity to assess program quality on a regular basis and has been an important factor in the discontinuance of many programs in recent years on each of the campuses in both systems.

Upon careful review of undergraduate program inventory, the task force finds no evidence of unnecessary duplication of programs across the state. In the vast majority of cases, market demands support the current distribution of programs, as demonstrated by consistently healthy enrollment histories. As for the relatively few programs that have been identified as low producing due to insufficient graduation rates over a multiyear period, all campuses already have procedures for evaluating such programs as part of the regular review process and have made decisions to discontinue many of those programs accordingly.

Critical Observations

- There is an ongoing need for the diligent, regular review of undergraduate programs for productivity and quality, including analyses of current market needs and student demand. These program reviews should continue to be utilized as the primary means of effectively regulating program proliferation.
- All campuses should explore opportunities for intercampus partnerships that enhance existing educational programs and also save costs both for the institutions and students. For example, developing and implementing statewide programs in expensive programs such as in engineering or nursing have the potential of realizing cost savings and efficiencies.

4. Graduate Programs

Introduction

In the review of Graduate Programs, the task force sought to answer the following question: Is the available graduate programming in high demand areas structured to enhance research activity, to drive economic development in the state, to ensure quality while keeping costs affordable, and to keep graduates in the state if appropriate?

Agricultural and Environmental Science

The demand for graduates with at least a bachelor's degree in Agricultural and Environmental Sciences is expected to outpace the production of graduates. The agrarian base that Tennessee sustains and the new impetus in areas such as biofuels and bioenergy, wildlife health with its impact on human and domesticated animal health, and the increasing focus on food safety and sustainable or organic farming concomitantly suggest that the need for graduates with upper level degrees will also exceed the supply. Currently, the state of Tennessee is home to 82,000 farms with 11.4 million acres in production providing more than two billion dollars in

farm cash receipts annually. Fourteen million acres of farm and non-farm land generate incomes of \$370 million dollars in timber sales annually. In rank order by the market value of agricultural products sold, cattle, poultry, grains, nursery crops, dairy, cotton, and vegetables lead the list of commodities. Tennessee is also the home of two land grant universities – The University of Tennessee (1862 land grant) and Tennessee State University (1890 land grant).

Historically, the Tennessee Higher Education Commission has cited agricultural programs in the state because of the incidence of marginal and low graduation rates and the high inherent costs for delivery of educational programs in agriculture and possible unnecessary duplication of programs among state-supported institutions in Tennessee” (Final Report of Review Team submitted to THEC, 2002). A review of agricultural programs at Austin Peay State University, Middle Tennessee State University, Tennessee State University, Tennessee Technology University, the University of Tennessee at Knoxville, and the University of Tennessee at Martin was conducted by a team of four agriculture consultants in 2002 at the request of THEC to determine if they should be retained, retained with improvements, or discontinued. The consultants took into account enrollments and graduation rates; manpower needs at the state, regional, and national levels; mission; number of programs relative to other states; and funding support. The conclusions drawn by the consultants with respect to continued existence of the programs in agriculture were:

- All of the programs contribute to the economy by educating a needed workforce and thus should be retained.
- Most of the programs have the capacity to add student enrollment.
- Student credit hours per FTE instruction and per cost of delivery suggest the programs are already very efficient in their delivery.

- Each program has developed unique features that best address their region and draw students from that part of the state which validates the distribution of the programs across Tennessee.

The review conducted in 2002 encompassed undergraduate as well as graduate programs in agriculture. This current report focuses on graduate programs in agriculture and environmental sciences. However, most of the conclusions reached by the earlier review team remain valid today.

Graduate Programs in Psychology

According to the *Occupational Outlook Handbook*, 2008-09 Edition, “a faster-than-average employment growth is expected for psychologists.” Job prospects should be best for graduates who have a doctoral degree from a leading university in an applied specialty such as counseling or health and for those with a specialist or doctoral degree in school psychology. Master’s degree holders in fields other than industrial-organizational psychology will face keen competition.

Consideration of supply and demand for graduate programming in *psychology* should encompass programs that carry various titles in Tennessee public universities. That is, programs in Psychology, Counseling Psychology, Industrial/Organizational Psychology, School Psychology, Counselor Education, Educational Psychology, and Counseling all produce graduates relevant to supplying the demand for graduates in psychology.

TBR and UT system institutions have 29 graduate programs in these fields that supply graduates to serve non-school and school-based populations. There are sixteen Masters programs, three Education Specialist programs, and ten doctoral programs. One of the doctoral programs has not yet reached maturity and is currently under post-approval monitoring. During

the period 2000-2008, four doctoral programs were approved, and three masters programs were terminated. Currently, one masters and one educational specialist program are considered low-producing in light of traditional expectations for production of graduates.

Employment opportunities for doctoral-prepared psychologists and school counseling personnel are projected to increase. Additional possible demand areas will be for individuals educated and trained in the prevention and treatment of unhealthy lifestyles, depression, addiction and stress. Programs for businesses, veterans, and the elderly will be required to meet existing and emerging markets. Psychology programs to meet these and other emerging markets are increasingly requiring doctoral-level education. The nature of graduate psychology programming is expensive because of accreditation-mandated student/faculty ratios, clinical components, training equipment, available site placements, and so forth. Because needs for graduates from these programs exist across the state, centralizing offerings should be considered with care to address concern for student access.

Graduate Programs in Nursing

There are significant workforce needs for nurses and, concomitantly, for teachers who train nurses. Registered nurses, prepared at the baccalaureate level, are projected to experience the largest numeric increase, 587,000 new jobs (from 2006-2016). Those with advanced degrees, such as nurse practitioners, will also be needed in greater numbers (*Occupational Outlook Handbook*, 2008-09). While employment opportunities for nurses will vary by type of training and by geographic area, shortages are expected in all areas. Clinical nurse specialists and nurse practitioners will be in high demand in underserved inner city and in rural areas; Doctoral prepared nurses will be needed in nursing specialties, for executive leadership positions, and as educators.. The American Association of Colleges of Nursing (AACN) in 2004

established the D.N.P. as the highest clinical practice degree for the discipline. By 2015, this degree will be required for individuals to sit for certification as an Advanced Practice Nurse and will replace current nurse practitioner and nursing administration specialties preparation at the master's level. Because of this change in the profession, faculty and resources will necessarily be shifted in order to support the doctoral programs during the phase out of the master's programs. The AACN website (June 2009) lists 91 DNP programs nationally and notes an additional 50 in the planning stages.

While the demand for nurses is increasing, many factors conspire to limit student access to nursing programs, including the cost of these programs (accreditation standards require high faculty/student ratios, sophisticated equipment for training, as well as a variety of clinical training sites), the availability of doctoral prepared faculty, and declining support from the state and from traditional sponsors such as hospitals.

Currently, TBR and UT systems provide seven masters programs (six at universities plus the RODP program), ten graduate certificate programs, and three doctoral programs (two offering the PhD and one the DNP). Given the need, there is no unnecessary duplication and none of the mature Nursing programs in the TBR or UT systems are low-producing. Indeed some attention should be paid to enhancing formula funding and/or student fee structure for these important training programs since there will continue to be shortages of baccalaureate-prepared professionals, as well as for professionals with advanced degrees who can provide leadership and service in health care facilities and who can move into the ranks of the nursing faculty in TN institutions of higher education.

Graduate Programs in Business

Currently, there are 22 Master's programs and three doctoral programs for Business in the state. Annual production of business graduates (from undergraduate and graduate programs) averages ~1200 per year. By 2014, the projected need for business graduates is nearly 10 fold higher than current production rate. Some current graduate programs, including several focused on Economics, have been rated as 'low producing.'

Although existing data do not provide adequate information as to the level of training (i.e. undergraduate business degree, MBA, PhD.) required to meet future workforce needs, current production rates will likely lead to shortages in business positions across the state. Given the widespread need for such majors, it would appear that the existing duplication of business degree programs is necessary in order to generate the numbers of graduates needed and to foster access. Indeed, existing programs should be grown.

Graduate Programs in Engineering

Public offerings for graduate programs in Engineering include 31 master's degree offerings and 19 PhD offerings. These programs produce ~1400 engineering graduates per year (undergrad and graduate combined), a number that far exceeds the projected needs for such graduates. Indeed in his report to THEC in April of 2008, Takeshi Yanagiura projected an annual need for ~650 engineering graduates. This projection is somewhat misleading in that the availability of engineering positions will likely differ widely by focus area (industrial, chemical, electrical, mechanical, computational, computer science, or nuclear), and there is no information as to either the type(s) of training or the level of training (undergraduate, master's or doctorally prepared) that would be appropriate for graduates seeking engineering positions. This analysis also fails to consider the economic spinoffs of engineering programs with strong research operations. However, since engineering programs are expensive to mount and since production

of graduates may exceed the need , some consolidation of engineering programs may be warranted . All undersubscribed Master's and PhD programs should be reviewed carefully, and programs with total enrollments less than 15 should be considered for possible consolidation or discontinuance. Final decisions should factor in local business needs and student access issues as well as the overall research contributions from the program faculty.

Graduate Programs in the Allied Health Sciences/Health Sciences

Market projections indicate shortages in virtually all of the allied health disciplines, and it is expected that these shortages will increase over time. In general, there should be little need to eliminate programs. Physical Therapy, like Nursing, has increased the requirements for practice. There will be a continuing and increasing need for the DPT degree.

Professional Schools

Pharmacy – Several new pharmacy schools have opened this year, including three at private institutions and one at a public institution. These programs are extremely costly and create competition for clinical placements that will further drive up costs as colleges must pay to place students in clinical sites. There are projections that the market will become saturated within 10 years if all of these pharmacy schools continue to produce students at the current rate. While consideration may, and possibly should, be given to reducing the number of public options available for pharmacy students in Tennessee; at a minimum, collaboration between the new program at ETSU and the new UTHSC campus in the east (Knoxville), which is academically very strong, is imperative to avoid the potentially negative consequences of under enrollment and competition for students and placements.

Medicine - Since there are only two public medical schools and a projected shortage for health care professionals in the years ahead, these two entities should be provided with

continuing (and increased) support. The current funding model covers only a fraction of the real costs of medical education (~60% of costs met at ETSU and ~40% of costs met at UTHSC); both entities need additional support to meet the needs of the state long term.

Law - the two publicly funded law schools currently produce 270 graduates per year. Projections for annual job openings in the legal profession indicate that there will be a need for 547 legal professionals per year by 2014. Private entities may fill part of this void but there may be a need to increase the number or size of current offerings.

Larger Strategic Issues

Enhance Research Activity

Universities pursue research activity and contribute to the public good by providing graduate programs that are of high quality, consistent with their approved missions, and responsive to demonstrated need. The inventory of graduate programs that individual institutions offer generally defines the types of research activity that they encourage, reward, and assign priority in resources and faculty expectations. While student engagement in research is an increasingly recognized factor in quality undergraduate education, it should be noted that the mix of graduate programs at individual universities, the standards of quality associated with those programs, and distinctive university missions are primary factors in determining whether research activity at those universities will emphasize basic research, bench research, clinical or translational research, research in the humanities, or applied research. Tennessee derives value from distinctive achievements by its universities in all types of research activity. Investment in graduate programs at each institution should comport with the distinctive research mission of the institution. Such investment should only be undertaken after careful review of the capabilities of

the institution, the cost of the program, and likelihood of that program achieving excellence by a set of external benchmarks.

Drive Economic Development in the State

Graduate programs in Tennessee enhance economic development by:

- meeting workforce needs,
- providing professional programs responsive to market demand,
- providing applied programs responsive to local and regional demand,
- providing clinical or translational research that enhances quality of life,
- providing basic or applied research that is aimed at finding solutions or acquiring knowledge applicable to resolving specific state, regional, national or global needs,
- cultivating innovative solutions or technologies that enhance economic development.

Strong graduate programs are a primary attribute of academic units with large, externally funded research programs that can contribute to economic development by attracting funding into the state and its communities.

Critical Observations

Agriculture

- Careful examination of duplication as well as existence of research infrastructure, faculty base, and facilities should occur prior to implementation of any new graduate programs in agriculture. The demand for the existing graduate programs will strengthen based upon state, regional, and national needs in the areas of biofuels, sustainability, and food production. This should augment enrollment in the master's programs that are currently on the borderline for being under-enrolled.

- There should be increased emphasis placed on recruiting undergraduate students into the STEM disciplines of agricultural sciences and environmental studies to strengthen the pipeline into the graduate programs that will have the greatest demand for graduates statewide and nationally, such as food production and safety, sustainability and biofuels, environmental impact, and the human-agricultural interface.
- Advanced degree programs at UTK and TSU are amply justified given their land grant mission, involvement in research, and the expanse of extension offices throughout the state.
- Serious consideration should be given to expand the on-line offering of graduate degrees which would greatly enhance access to higher education for place bound students desiring advanced degree attainment. This could be facilitated by increased cooperation among campuses offering graduate courses and selective use of extension and research station facilities.

Psychology

- Market demand, concern for student access, and the fact of community need across the state militate against consolidation of existing programming into a few institutions.
- If programs are meeting productivity expectations and are responding to clear market demand, existing programs should continue and the existence of duplication should not lead to the conclusion that the duplication is unnecessary.
- The state should pay close attention to market data and should—given the breadth and number and geographical scope of existing programs—be reluctant to approve new programs unless compelling needs are determined.

- Given transitions in the credential level required for entry into many disciplines, the productivity of master's programs should be monitored regularly.
- While the need for professional degrees is warranted, the state should not approve new research degrees unless clear documentation of need is provided.

Nursing

- It is important to distinguish between duplication and unnecessarily duplicative programs. While there is duplicative graduate programming in Nursing, this is warranted because of needed access to programs and because there are no programs currently low producing when measured against traditional Tennessee standards.
- Graduate Nursing programs should be supported in order to enhance enrollment opportunities.
- Post-approval monitoring for immature programs should continue to assure that they meet expected productivity standards.
- The development of DNP programs should be expedited in Tennessee at universities for which this is consistent with their mission and for which the institution can identify sufficient resources to address qualitative expectations.
- Given the projected shortages of nursing faculty with focused expertise, the state should foster the development of on line options and simplify the process for students to enroll in on line courses. In this way, faculty with particular expertise could be shared more effectively without adding additional cost.

Business

- Faculty advisors should encourage students to major in business at the undergraduate level if they are seeking a business degree. For majors in business administration, a

common transfer path has been developed statewide, facilitating student degree completion.

- Further analysis as to the need for students with MBA degrees and doctoral degrees should be undertaken. Results from this analysis should be used to “right-size” existing graduate level programming in business, adding new programs if warranted.
- Given widespread need, keep all existing programs so long as graduation rates remain at expected levels – low producing master’s programs should continue to be reviewed critically and strengthened (if feasible) and eliminated if problems persist. Low producing doctoral programs should be reviewed even more critically.

Engineering

- It is important to seek additional data to determine the types of engineering degrees that will be needed in the workforce and the level of training that will be required in each focus area; once these data are available, review current programs critically to match numbers of programs to projected needs.
- Since there appear to be more programs than may be required for the market, review all programs with total enrollments of fewer than 15 students.
- Consider limiting graduate engineering programming to those institutions with Carnegie rankings of high research or extremely high research. These programs will produce the strongest students and the research generated will provide additional benefits to the state beyond the number of graduates produced.

Allied Health

- Environmental Health at ETSU as well as Allied Health at ETSU should be reviewed (the latter had no graduates last year although 20 are enrolled). While the number of

Environmental Health graduates is low at ETSU, this is an area of concentration that is mandatory for the College of Public Health's accreditation. The doctoral program is still relatively new so it has not had time to have a full complement of graduates.

- Comparative Medicine at UTK should be reviewed for possible consolidation or discontinuance.
- UTHSC has three graduate Allied Health programs that show low enrollment. The first was renamed Health Outcomes and Policy Research, the second was inactivated briefly due to fiscal problems and is now on track, and the last is still new and growing.
- Some specific information should be gathered regarding the projected need for audiologists and speech pathologists as there are three bachelor level programs and five master's level programs that produce less than 150 graduates collectively. Additionally, there are five doctoral level programs across the state. The PhD Program in Audiology and Speech Pathology at U of M is currently underperforming and may benefit from collaboration with the Knoxville-based program that is now administered by UTHSC.

Research

- Consideration of cost, efficiency, and the degree to which qualitative standards are dependent on a critical mass of students in graduate programs support the state's presumption of reasonable expectations for production of graduates. Doctoral programs should be required to project and sustain production over time of a minimum of three graduates per year (over a five-year period) and masters programs should project and sustain a minimum of five graduates per year (over a five-year

- Encouraging ongoing review of institutional missions will discourage “mission creep” and will provide credible documentation of segmented mission emphases aimed at meeting state, regional, and national needs.
- Public institutions of higher education may find it feasible to pursue the development of joint programs or consortia in which need or costs militate against a single institution meeting enrollment standards, production of graduates standards, or being able to afford costs of mounting or sustaining a program for which quantitative, qualitative, and need/market considerations can be addressed by inter-institutional cooperation.
- The development of distinctively world-class programs that are high priorities for Tennessee and that represent high cost research-based disciplines (e.g., Engineering) should be carefully and thoroughly analyzed in consideration of centralizing future development of those programs among fewer institutions.
- The following qualitative factors should receive weight in consideration of proposals for development of new graduate programming:
 - Consonance with approved institutional missions,
 - Credible plans to pursue specialized accreditation in programs for which that recognition is warranted
 - Sufficiency of resources to develop, offer, and sustain graduate programs

- Clear set of benchmarks, derived from aspirational peers, and clear strategic plan for each program.

5. Opportunities for Collaboration

There are many opportunities for increased collaboration between and among universities in the TBR and UT systems and there exists good will between the faculty and staff of the institutions to foster innovative partnerships that support the goals for higher education in the state of Tennessee. Below are a few examples of collaborations that are either in development or under consideration. Some of these recommendations are drawn from the Tennessee University Faculty Senates' *Position Paper on the Reorganization of Higher Education in Tennessee* (2009).

- Development of undergraduate degree completion programs to reach the vast number of Tennesseans who have some college credits but lack a degree;
- Development of more dual admissions programs between Tennessee community colleges and TBR/UT universities;
- Further development of universal articulation programs across community college, and the four year colleges and universities in Tennessee;
- Development of joint or collaborative degree programs in appropriate disciplines such as in specialized engineering programs across the state;
- Development of shared library and technology resources as appropriate
- Development of joint international education programs within degrees that foster study abroad and exchanges.
- Development of joint UT/TBR online degrees in high-need areas for which access is a priority.

- Development of UT/TBR faculty exchanges among program areas with student cohorts across the state.
- Co-sponsor the “Undergraduate Research on the Hill” annual program at the Tennessee Legislature highlighting student/mentor research.

6. Ensuring Quality and Productivity

TBR Review of Low-Producing Academic Programs as an Example of Ensuring Quality

One activity mandated by the TBR initiative, **Defining Our Future**, was the elimination or consolidation of low-producing academic programs. Colleges and universities constantly adjust their program mix in response to the changing demands of students and employers. Between 1985 and 2001, for example, THEC acted on 837 requests to approve, consolidate, or terminate academic programs. However, times of fiscal constraint compel particular scrutiny of programs to ensure the most effective and efficient use of limited resources. The TBR enacted a "Three Year Review of Low Producing Programs" to ensure that its campuses focused on eliminating unproductive programs and, in turn, focused its efforts to increasing enrollment and productivity of programs institutions felt important to grow and enhance.

Review Process:

On a three-year cycle beginning 2002, TBR campuses receive a list of low-producing academic programs targeted for campus review. For purposes of this review, low producing was based on the average number of program graduates over a five-year period. The minimum number of graduates triggering a low-producing review was low, set at ten for baccalaureate programs, five for masters degree programs, and 3 for doctoral programs. The Office of the Vice Chancellor for Academic Affairs reviews the programs and creates a list of those low producing

for each campus. After the analysis, the Vice Chancellor for Academic Affairs makes one of four recommendations for each program. They are:

- Continuation of the program
- Modification of the program
- Consolidation or merger of the program
- Phasing out the program

All campuses review these programs and the recommendations. Each campus president either agrees with the recommendations or requests a meeting with the Vice Chancellor to present evidence for a different action. After the negotiations, the final recommendations are presented to the Board for Board action. For programs identified for monitoring status, campuses prepare a plan for improvement that must include specific completion, enrollment, and quality goals with annual benchmarks to indicate progress toward those goals. The Board receives annual reports on all of these programs. TBR has completed two three-year review cycles since 2002 with another review cycle underway for Board action in December of 2009. Since 2002, the review cycle has resulted in termination and consolidation of 102 programs at the TBR institutions.

UT Review of Academic Programs

The University of Tennessee system institutions regularly review all academic programs on a five year cycle. Units develop a comprehensive self study which is reviewed by a faculty review team, administrative heads and deans, the chief academic officer, and the chancellor for each campus. Programs that are chronically under subscribed and/or weak by other campus and system metrics are reviewed for possible consolidation, discontinuance or other appropriate administrative action. The University of Tennessee Board of Trustees officially acts on all

recommendations to consolidate or discontinue academic programs at its regularly scheduled June meeting.

In addition to the regular academic review process, the University of Tennessee institutions receive a report annually from the Tennessee Higher Education Commission on low-producing programs. Each program so identified is also scheduled for review by the relevant campus. In 2009, the UT system Office of the Vice President of Academic Affairs developed and distributed a system-wide framework for the discontinuance of academic programs which has been approved by the Board of Trustees. In addition, each of its member campuses has developed a more specific framework for program discontinuance consistent with the system procedure. Thus, all academic programs are regularly monitored for program productivity and other measures of effectiveness, efficiency and quality.

A review of the programs approved and discontinued by UT from 1980 to 2009, shows that a total of 167 existing programs have been discontinued or consolidated through these processes.

Reflections on Challenges Ahead

The analyses provided within this paper paint a very positive portrait of the accomplishments of both systems of public higher education in Tennessee and identify some challenges lying ahead. These challenges may be best addressed by our continued collaborations. These challenges are briefly summarized below:

1. **Transfer and Articulation.** The TBR and UT systems staff and faculty have worked collaboratively over the last couple of years to implement new academic policy ensuring that undergraduate students transferring between the two systems have their general education curriculum fully complete upon transfer. This policy change alone

will ensure a seamless transfer process for students, facilitating their progression in their majors, as well as improving retention and graduation rates for baccalaureate students in the state of Tennessee. In addition, academic leaders from both systems have begun working on universal articulation programs in high transfer demand areas, beginning with the business major, also facilitating student progress and timely graduation. Both of these measures will ensure that students' needs for degree completion are met in a timely and efficient manner, saving costs for the institutions as well as saving time and money for students and their families. Plans are underway to develop articulation pathways for all high demand majors.

2. Dual admission. Campuses from both systems are moving forward with developing increased opportunities for dual admission of students in select community colleges with partner four year institutions. Two model dual admissions programs are being established to demonstrate the effectiveness of these programs. The first is in central Tennessee between Nashville State Community College and both Tennessee State and Middle Tennessee State Universities. The second is in west Tennessee, between Dyersburg State and University of Tennessee Martin. These programs specify a complete curriculum plan for students in selected majors, so that when their programs are complete at the associate level (assuming the requisite grade point average is achieved), students are granted upper division status in the partner university, in their major fields of study. These programs will pave the way for success of participating students and make the best use of teaching and advising resources at both the community colleges and the four year institutions. System and campus leaders will be encouraged to scale these programs up across the state of Tennessee.

3. **Course Redesign.** Campus and system academic leaders in TBR have embraced course redesign as a key initiative in helping students succeed who come to higher education underprepared to do post-secondary work. The redesign of development education using the redesign model of the National Center for Academic Transformation (NCAT) is resulting in students moving successfully in to college level courses much sooner and in greater numbers. Some of the TBR institutions also are using the NCAT course redesign model to address general education courses and that historically have had high failure rates. Through course redesign, there are data to support that students' have higher rates of completion, facilitating their persistence in college.

4. **Retention and Graduation Rates.** Leadership of both systems agrees that retaining and graduating baccalaureate students within six years is key to Tennessee's future. Both systems are developing campus-based programs that will facilitate the retention of freshmen to the sophomore year. For example, the University of Tennessee, Chattanooga has implemented a programs where first year students are called by a resident assistant after missing one class. The phone call alone demonstrates that a member of the community cares about the student's progress in class, as class attendance is critical to success. Other campuses have developed robust First Year Reading Projects, Freshmen Interest Groups, and other programs designed to keep students connected to the faculty, their peers, and the campus as a community. System and campus leadership across the state have also discussed the need to have retention and graduation rates as key accountability measures for institutions, a concept that is developing broad support.

5. Focus on Teaching Quality. UT and TBR collaboratively formed the Tennessee Teaching Quality Initiative (TQI) as a means to address the quality of teachers prepared to enter K-12 schools. TQI has focused on the key knowledge base of teaching so that our preparation programs focus on developing the skills, knowledge, and dispositions that directly relate to student performance. It also is leading the development of a mentoring training model for teachers who will mentor pre-service teachers as well as teachers in their first three years in the classroom. TQI is building a faculty development model so that faculty in arts and sciences who teach pre-service teachers will model effective pedagogy within their university classrooms. Finally, TQI is building a model for teacher recognition that will facilitate the professionalization of teaching. TQI is co-chaired by Dr. Bob Rider, Dean of the College of Education at UT Knoxville and Dr. Hal Knight, Dean of the College of Education at East Tennessee State University.
6. Academic Audit. TBR implemented in 2004 the Academic Audit as a means of institutionalizing a continuous quality assurance model for teaching and learning. Over 200 academic programs in the TBR have participated in the Academic Audit and benefitted from the continuous review of programs related to key quality indicators that relate to student success in the learning environment.
7. Funding Issues. System and campus leaders in Tennessee have begun a discussion about focusing state funding for higher education on key areas of student success such as retention and graduation rates, rather than on enrollment numbers. This communicates to all stakeholders that public higher education is outcomes-oriented and committed to ensuring the success of our students.

Appendix – Definitions

Carnegie Classifications:

Research Universities – Very High Research Activity (Research Very High): These institutions awarded at least 20 doctoral degrees in 2003-2004 and scored very high on either or both an aggregate and/or a per-capita index measuring research and development (R&D) expenditures in science and engineering (S&E), R&D expenditures in non-S&E fields, S&E research staff, and doctoral conferrals in humanities, social sciences, STEM, and other fields. Professional practice degrees such as JD, MD, PharmD, DPT, etc. did not count towards an institution's total doctorates awarded.

Research Universities – High Research Activity (Research High): These institutions awarded at least 20 doctoral degrees in 2003-2004 and scored high (but not very high) on either or both an aggregate and/or a per-capita index measuring research and development (R&D) expenditures in science and engineering (S&E), R&D expenditures in non-S&E fields, S&E research staff, and doctoral conferrals in humanities, social sciences, STEM, and other fields. Professional practice degrees such as JD, MD, PharmD, DPT, etc. did not count towards an institution's total doctorates awarded.

Doctoral/Research Universities (Doctoral/Research): These institutions awarded at least 20 doctoral degrees in 2003-2004 but did not score very high or high on either or both an aggregate and/or a per-capita index measuring research and development (R&D) expenditures in science and engineering (S&E), R&D expenditures in non-S&E fields, S&E research staff, and doctoral conferrals in humanities, social sciences, STEM, and other fields. Professional practice degrees such as JD, MD, PharmD, DPT, etc. did not count towards an institution's total doctorates awarded.

Master's Colleges and Universities Larger Programs (Master's Large): These institutions awarded at least 200 master's degrees in 2003-2004, but fewer than 20 doctorates.

Master's Colleges and Universities Medium Programs (Master's Medium): These institutions awarded between 100 and 199 master's degrees in 2003-2004, but fewer than 20 doctorates.

Master's Colleges and Universities Smaller Programs (Master's Small): These institutions awarded between 50 and 100 master's degrees in 2003-2004, but fewer than 20 doctorates.

Other definitions:

Land grant institution – an institution that has been designated by its state legislature or Congress to receive the benefits of the Morrill Acts of 1862 and 1890. The original mission of these institutions, as set forth in the first Morrill Act, was to teach agriculture, military tactics, and the mechanic arts as well as classical studies so that members of the working classes could obtain a liberal, practical education. (Definition from IPEDS)

Historically Black College or University – any historically black college or university that was established prior to 1964, whose principle mission was, and is, the education of black Americans, and that is accredited by a nationally recognized accrediting agency or association determined by the Secretary of Education to be a reliable authority as to the quality of training offered or is, according to such an agency or association, making reasonable progress toward accreditation. (from www.ed.gov)

Appendix – University of Tennessee Academic Program Consolidations and Terminations

University of Tennessee, Chattanooga

1. Terminate BS with a major in Office Administration (10/83)
2. Terminate Certificate in Office Administration (10/83)
3. Terminate BS with a major in Health & Physical Education (2/84)
4. Terminate BA with a major in Social Work (6/85)
5. Terminate BS with a major in Early Childhood & Elementary Education (6/91)
6. Terminate BA with a major in American Studies (6/96)
7. Consolidate BA with a major in Greek & Latin into BA with a major in Foreign Langs & Lit (6/96)
8. Consolidate BA with a major in Latin into BA with a major in Foreign Langs & Lit (6/96)
9. Consolidate BA with a major in French into BA with a major in Foreign Langs & Lit (6/96)
10. Consolidate BA with a major in Spanish into BA with a major in Foreign Langs & Lit (6/96)
11. Terminate MPT Physical Therapy (6/24/02)
12. Terminate BOT Occupational Therapy (6/28/03)
13. Terminate BS with a major in Medical Technology (6/20/08)
14. Terminate BS with a major in Human Ecology (6/20/08)

University of Tennessee, Knoxville

1. Terminate 2-year Certificate in Office Administration (1/81)
2. Terminate MS with a major in Radiation Biology (6/81)
3. Terminate PhD with a major in Radiation Biology (6/81)
4. Terminate MS with a major in Economics (6/82)
5. Terminate MACT with a major in Economics (6/82)
6. Terminate MACT with a major in History (6/82)
7. Terminate BSHE with a major in Interior Design & Housing (2/83)
8. Terminate MACT with a major in Chemistry (2/83)
9. Terminate MACT with a major in Biology (2/83)
10. Terminate BSBA with a major in Office Administration (2/83)
11. Terminate BSBA with a major in Business Education (2/83)
12. Terminate MS with a major in Distributive Education (6/83)
13. Terminate MA with a major in Art (6/83)
14. Terminate MACT with a major in Physics (6/83)
15. Terminate MACT with a major in Sociology (6/83)
16. Terminate BSBA with a major in Banking (6/83)
17. Terminate BSBA with a major in Insurance (6/83)
18. Terminate BSBA with a major in Real Estate & Urban Development (6/83)
19. Terminate BAHE with major in Interior Design and Housing (2/83)
20. Consolidate BA with a major in Greek into BA with a major in Classics (10/83)
21. Consolidate BA with a major in Latin into BA with a major in Classics (10/83)
22. Terminate MS with a major in Engineering Administration (10/83)
23. Terminate MACT with a major in English (6/84)

24. Terminate MACT with a major in Business Education (6/84)
25. Terminate PhD with a major in Health Education (6/84)
26. Terminate MACT with a major in German (10/84)
27. Terminate Certificate in Asian Studies (10/84)
28. Consolidated MS in Curriculum into MS in Curriculum & Instruction (1/85)
29. Consolidated MS in Elementary Ed into MS in Curriculum & Instruction (1/85)
30. Consolidated MS in English Ed into MS in Curriculum & Instruction (1/85)
31. Consolidated MS in Foreign Language Ed into MS in Curriculum & Instruction (1/85)
32. Consolidated MS in Instructional Media Ed into MS in Curriculum & Instruction (1/85)
33. Consolidated MS in Math Ed into MS in Curriculum & Instruction (1/85)
34. Consolidated MS in Reading Ed into MS in Curriculum & Instruction (1/85)
35. Consolidated MS in Science Ed into MS in Curriculum & Instruction (1/85)
36. Consolidated MS in Social Science Ed into MS in Curriculum & Instruction (1/85)
37. Terminate DBA in Business Administration (6/85)
38. Terminate MA with a major in Mathematics (9/85)
39. Terminate BSHE Coordinated UG program in Dietetics (10/86)
40. Terminate PhD with major in Spanish (10/86)
41. Terminate PhD with major in German Languages & Literature (10/86)
42. Terminate ME with major in Mechanical Engineering (1/87)
43. Terminate ME with major in Aerospace Engineering (1/87)
44. Terminate ME with major in Industrial Engineering (1/87)
45. Terminate BSEd with a major in Elementary Physical Education (K-8) (1/87)
46. Terminate BSEd with a major in Secondary Physical Education (7-12) (1/87)
47. Terminate MA with a major in Speech & Theatre (6/87)
48. Terminate ME with a major in Nuclear Engineering (6/87)
49. Consolidate BSAg with a major in Agricultural Business into BSAg Economics & Business (9/88)
50. Consolidate BSAg with a major in Rural Society into BSAg Economics & Business (9/88)
51. Consolidate MS with a major in Agricultural Education into MS Agric & Extn Educ (9/88)
52. Consolidate MS with a major in Agricultural Extension Education into MS Agric & Extn Educ (9/88)
53. Terminate BSAg with a major in Agricultural Mechanization (9/88)
54. Terminate MS with a major in Adult Education (6/89)
55. Terminate MS with a major in Business Education (6/89)
56. Terminate MS with a major in Industrial Education (6/89)
57. Terminate BSED with a major in Dance (6/89)
58. Terminate ME with a major in Civil Engineering (9/89)
59. Terminate ME with a major in Electrical Engineering (9/89)
60. Terminate MS with a major in Food Science (10/90)
61. Terminate BSEd with a major in Elementary Education (6/91)
62. Terminate MS with a major in Music Education (6/92)
63. Terminate MA with a major in Music (6/93)

64. Terminate MS with a major in Art Education (6/93)
65. Consolidate Human Performance & Sports Studies into Sport Management (6/93)
66. Consolidate Recreation & Leisure Studies into Sport Management (6/93)
67. Terminate MS with a major in Food Service & Food Lodging Administration (6/96)
68. Terminate EdD with a major in Health Education (6/96)
69. Terminate MS with a major in Human Ecology (6/96)
70. Terminate EdD with a major in Human Resource Development (6/96)
71. Terminate MS with a major in Interior Design (6/96)
72. Terminate EdS with a major in Safety Education & Service (6/96)
73. Terminate EdS with a major in Vocational Education & Service (6/96)
74. Consolidate BS with a major in Botany into BS in Biological Sciences (6/97)
75. Consolidate BS with a major in Microbiology into BS in Biological Sciences (6/97)
76. Terminate MS with a major in Interior Design (6/97)
77. Terminate MS with a major in Human Ecology (6/97)
78. Terminate MS with a major in Food Service & Lodging Administration (6/97)
79. Terminate EdD with a major in Health Education (6/97)
80. Terminate EdD with a major in Human Resource Development (6/97)
81. Terminate BS with a major Biochemistry (6/98)
82. Terminate MS with a major in Zoology (6/98)
83. Terminate MS with major in Rehabilitation Counseling (6/98)
84. Terminate Ph.D. with a major in Agriculture Economics (6/01)
85. Terminate BSEd with a major in Business/Marketing Education (6/02)
86. Terminate PhD with a major in Biomedical Sciences (3/03)
87. Terminate BSHE with a major in Business/Marketing Education (3/03)
88. Terminate BSHE with a major in Child Development (6/03)
89. Terminate BSEd with a major in Human Services (6/03)
90. Terminate MS with a major in Botany (6/05)
91. Terminate Ph.D. with a major in Botany (6/05)
92. Terminate BSHE with a major in Community Health Education (6/05)
93. Terminate MS with a major in Health Promotion & Health Education (6/05)
94. Terminate BSBA with a major in Business Studies (6/06)
95. Terminate MS with a major in Planning (6/09)
96. Terminate MS with a major in Safety Education, Instructional Technology, Health & Cultural Studies (6/09)
97. Terminate minor in Dance Education (6/09)

University of Tennessee, Martin

1. Terminate BSN (Bachelor of Science in Nursing) (6/80)
2. Terminate BSBA with a major in Business-Foreign Studies (10/83)
3. Inactivate Master of Accountancy with a major in Accounting (2/84)
4. Terminate BSCJ with a major in Criminal Justice (external) (6/84)
5. Inactivate BSBA with a major in Health Service Management (10/84)
6. Terminate BSBA with a major in Business Education (1/85)
7. Inactivate Masters in Business Administration (6/85)
8. Terminate BS Agriculture with a major in Agriculture Education (6/85)
9. Terminate BSHE with a major in Home Economics Education (6/87)

10. Terminate BSBA with major in Health Services Management (6/89)
11. Terminate BSEd with a major in Early Childhood (6/91)
12. Terminate AAN with a major in Nursing (2/7/90)
13. Inactivate MSED with a major in Educational Psychology & Guidance (6/92)
14. Inactivate MSED with a major in Educational Administration & Supervision (6/92)
15. Consolidate BS with a major in Science-Dental into BS with a major in Health Sciences (6/93)
16. Consolidate BS with a major in Science-Medical into BS with a major in Health Sciences (6/93)
17. Consolidate BS with a major in Science-Pharmacy into BS with a major in Health Sciences (6/93)
18. Terminate BSEd with a major in Secondary Physics (6/94)
19. Terminate BA with a major in Biology (6/28/95)
20. Terminate BSEd with a major in Art Education (6/20/96)
21. Terminate BMMuEd with a major in Music Education (6/96)
22. Consolidate BSET with a major in Civil Engineering Technology into BSE in Engr (7/96)
23. Consolidate BSET with a major in Electrical Engineering Technology into BSE in Engr (7/96)
24. Consolidate BSET with a major in Mechanical Engineering Technology in BSE in Engr (7/96)
25. Terminate BS in Public Administration with a major in Public Administration (6/97)
26. Terminate BSEd with a major in Secondary German (6/98)
27. Terminate BS with a major in Music (6/01)
28. Terminate BA with a major in Economics (3/03)
29. Terminate BS with a major in Economics (3/03)
30. Terminate Master of Accountancy (MAc) (6/06)
31. Terminate BS with a major in Health Sciences (6/09)

University of Tennessee Health Science Center

1. Terminate 1-year Certificate for Nurse Practitioners (10/80)
2. Terminate BS with a major in Radiation Technology (1/81)
3. Terminate Certificate in Microbiology (6/82)
4. Terminate BS in Pharmacy (10/83)
5. Terminate Certificate in Clinical Immunohematology (6/89)
6. Terminate MS with a major in Drug & Material Toxicology (6/89)
7. Terminate PhD with a major in Drug & Material Toxicology (6/89)
8. Inactivate PhD with a major in Health Science Administration (2/94)
9. Terminate BA with a major in Biology (6/95)
10. Terminate MS with a major in Medicinal Chemistry (6/96)
11. Terminate MS with a major in Pharmaceutics (6/96)
12. Consolidate MS with a major in Anatomy into MS in Biomedical Sciences (7/96)
13. Consolidate MS with a major in Biochemistry into MS in Biomedical Sciences (7/96)
14. Consolidate MS with a major in Microbiology & Immunology into MS in Biomedical Sciences (7/96)

15. Consolidate MS with a major in Pathology into MS in Biomedical Sciences (7/96)
16. Consolidate MS with a major in Physiology into MS in Biomedical Sciences (7/96)
17. Inactivate BS in Nursing with a major in Nursing (6/97)
18. Terminate BS in Public Administration with a major in Public Administration (6/97)
19. Consolidate MS in Orthodontics into Master of Dental Science (10/97)
20. Consolidate MS in Pediatric Dentistry into Master of Dental Science (10/97)
21. Terminate BSPT Physical Therapy (10/97)
22. Terminate BS with a major in Physical Therapy (6/98)
23. Terminate MPT in Physical Therapy (6/01)
24. Terminate BOT with Occupational Therapy (10/10/03)
25. Transition BS with a major in Health Informatics to MS with a major in Health Informatics (6/09)

**UNIVERSITY OF TENNESSEE
ACADEMIC PROGRAM SUMMARY**

CAMPUS	# of Programs Terminated/Consolidated 1980-2009
UTC	14
UTK	97
UTM	31
UTHSC	25
Total	167

An example of action taken in the 2002 initiation of the three-year review process follows.

TENNESSEE BOARD OF REGENTS
REVIEW OF LOW-PRODUCING ACADEMIC PROGRAMS

RECOMMENDED ACTIONS
December 2002

Institution	Number of Programs Reviewed	Recommend Continuation	Rec. TBR Monitor	Recommend Modification	Recommend Merger or Consolidation	Rec. Phase-out
Universities						
APSU	11 (100%)	5 (45%)	0	2 (18%)	1 (9%)	3(27%)
ETSU	17 (100%)	8 (47%)	0	3 (18%)	2 (12%)	4(24%)
MTSU	15 (100%)	4 (27%)	4 (27%)	0	1(7%)	6(40%)
TSU	16 (100%)	6 (38%)	5 (31%)	2 (13%)	1 (6%)	2(13%)
TTU	14 (100%)	5 (36%)	4 (29%)	1 (7%)	3 (21%)	1(7%)
UoM	30 (100%)	12 (40%)	10(33%)	0	4 (13%)	4(13%)
University subtotal:	103(100%)	40 (39%)	23(22%)	8 (8%)	12 (12%)	20(19%)
Community Colleges:						
Chattanooga	10 (100%)	5 (50%)	0	1 (10%)	3 (30%)	1 (10%)
Cleveland	4 (100%)	0	0	0	1 (25%)	3 (75%)
Columbia	7 (100%)	2 (29%)	0	2 (29%)	0	3 (43%)
Dyersburg	2 (100%)	1 (50%)	0	0	0	1 (50%)
Jackson	6 (100%)	3 (50%)	0	2 (33%)	0	1 (17%)
Motlow	4 (100%)	0	0	0	0	4(100%)
Nashville	6 (100%)	1 (17%)	0	1 (17%)	4 (67%)	0
Northeast	2 (100%)	1 (50%)	0	1 (50%)	0	0
Pellissippi	6 (100%)	4 (67%)	0	0	0	2 (33%)
Roane	7 (100%)	4 (57%)	0	0	0	3 (43%)
Southwest	11 (100%)	1 (9%)	0	1 (9%)	3 (27%)	6 (55%)
Volunteer*	0	0	0	0	0	0
Walters	5 (100%)	2 (40%)	0	0	1 (20%)	2 (40%)
Community College subtotal:	70(100%)	24 (34%)	0	8 (11%)	12 (17%)	26(37%)
TOTAL	173(100%)	64 (37%)	15 (9%)	16 (9%)	28 (16%)	46(29%)

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