Postsecondary Education in Kentucky

An Assessment

A Report to the Task Force on Postsecondary Education

March 1997

POSTSECONDARY EDUCATION IN KENTUCKY

AN ASSESSMENT

A REPORT TO THE TASK FORCE ON POSTSECONDARY EDUCATION

MARCH 1997

" THE ABILITY OF STATES AND NATIONS TO CULTIVATE AN APPETITE AND AN APPRECIATION FOR KNOWLEDGE WILL BE KEY TO THEIR PROSPERITY."

Exploring the Frontier of the Future
Kentucky Long-Term Policy Research Center
(December 1996)

"HIGHER EDUCATION IS IN DEEP CRISIS."

Peter Drucker, *Forbes* (March 1997)

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MEMBERS OF THE TASK FORCE ON POSTSECONDARY EDUCATION,
MEMBERS OF THE GENERAL ASSEMBLY, AND
CITIZENS OF THE COMMONWEALTH OF KENTUCKY

Fellow Kentuckians:

As chair of the Task Force on Postsecondary Education, I am providing this report, *Postsecondary Education in Kentucky - An Assessment*, to Task Force members, members of the General Assembly and the citizens of the Commonwealth. This document is a summary of information gathered by the Task Force, which has studied the status of Kentucky's postsecondary education system for many months.

Acknowledging the critical importance of postsecondary education to Kentucky, the 1996 General Assembly adopted Senate Concurrent Resolution 93, which created the Task Force on Postsecondary Education. The 18 members, representing both the executive and legislative branches of state government, began meeting monthly in July 1996 and quickly embraced the following goal:

> *TO ASSURE THAT KENTUCKY'S POSTSECONDARY EDUCATION AND TECHNICAL EDUCATION SYSTEM IS POSITIONED TO PROVIDE THE HUMAN CAPITAL NEEDED TO ALLOW THE COMMONWEALTH TO BE A LEADER IN THE GLOBAL ECONOMY OF THE 21ST CENTURY.*

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Since July, a great deal of effort has been given to reviewing previous studies and to seeking input from consumers and providers of postsecondary education. The Commission on Higher Education Institutional Efficiency and Cooperation was created by executive order to include university presidents and other postsecondary education stakeholders in the review. In August 1996, approximately 275 citizens from across Kentucky were invited to organize into 10 advisory groups. These advisory groups included business leaders, university presidents, private school presidents, university and community college students and faculty, as well as members of various boards and councils, vocational/technical programs, proprietary schools, and other special interest groups. All of these groups were charged with developing position papers to identify critical issues and make recommendations to the Task Force.

Additionally, the Task Force utilized consultants, including the National Center for Higher Education Management Systems (NCHEMS), and the Education Commission of the States (ECS). NCHEMS assisted the Task Force by analyzing the issues and problems and took a lead role in assembling this document.

Specific recommendations for change are not provided, although a strong case is made for the need to reform Kentucky's postsecondary education system. This assessment outlines the importance of Kentucky's postsecondary education system to its future, the barriers to achieving an efficient and coordinated system, and the goals for creating a comprehensive postsecondary education system.

I encourage you to read this document carefully and consider its information as we begin to discuss the appropriate solutions for the reform of our postsecondary education system in the Commonwealth.

Sincerely,

Paul E. Patton

Governor Paul E. Patton
Chair, Task Force on Postsecondary Education

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EXECUTIVE SUMMARY

Kentucky must significantly improve the postsecondary knowledge and skills of its population and its research competitiveness if the Commonwealth hopes to compete in the global economy and raise the quality of life of its citizens. The international and national economies are currently undergoing rapid transformation. These changes result from the growth of technology, the development of new products and expanding markets and the inevitable dislocations associated with the establishment of a new economic order.

Kentucky's traditional economic sectors are declining and are being replaced by high-tech manufacturing and by the provision of services. As a result of this structural economic shift, the need for a skilled workforce has become even more important for the Commonwealth's competitive position. Moreover, an analysis of Kentucky's competitor states suggests the need for a more responsive and flexible system of postsecondary education "in sync" with the emerging economic realities of the 21st century.

EDUCATIONAL ATTAINMENT AND ECONOMIC PROGRESS

Kentucky continues to lag the nation and competitor states in educational attainment at all levels. High school graduation rates remain among the lowest in the nation. Only 13% of the state's population completed a baccalaureate degree compared to the national level of 20%. Kentucky also continues to lag the nation and competitor states in per capita personal income, the most common measure of a state's economic well being.

The linkage between educational attainment and economic progress has been well documented. In the 1997 *Kentucky Annual Economic Report*, produced by the University of Kentucky's Center for Business and Economic Research, it was concluded that 57% of the differential between per capita personal income in Kentucky and other states can be accounted for solely by the Commonwealth's low level of educational attainment, especially at the postsecondary level.

Although Kentucky has increased access to and participation in postsecondary education in recent years, the state has not realized significant gains in educational attainment. Factors contributing to the state's lack of success include inefficiency across the system and a structure which fosters competition rather than cooperation. Effective statewide leadership

and coordination is needed for all of the postsecondary resources in the Commonwealth. There is no statewide strategic vision to drive the postsecondary education system as a critical economic engine for the state and its regions.

The low research funding and doctoral degree production also impedes the system from achieving excellence. Research and development is vital to the growth of regional and state economies. Kentucky, however, is last (15) among its competitor states in research and development funding per capita.

KEY FINDINGS

Kentucky's current "system" of postsecondary education presents a number of barriers to the achievement of an enhanced standard of living and enhanced economic opportunities for the citizens of the Commonwealth.

The following have been identified as barriers to progress:

- **Kentucky lacks a structure to link all of its postsecondary education resources with a long-range strategy to enhance the economic competitiveness and quality of life of its citizens;**

- **The current funding mechanisms for postsecondary education serve as disincentives for program efficiency and institutional cooperation;**

- **Postsecondary education offers virtually no incentives for the attainment of quality and the pursuit of excellence;**

- **Kentucky seriously lags the nation and competitor states in research and development activity; and,**

- **The current system of postsecondary education has no comprehensive strategy to maximize the use of existing and emerging technologies.**

Quality and efficiency in postsecondary education are critical issues for the future economic development of Kentucky and the quality of life of its citizens. Without ***strategic investment*** in postsecondary education and critical linkages to a statewide mission, the Commonwealth will not reach its full potential, and citizens will not be able to compete in the global economy of the 21st century. This report establishes the need for Kentucky to change its path, and to maximize all of its postsecondary education resources. Kentucky's ability to improve its standard of living and quality of life depends on a commitment to excellence.

CHAPTER 1: EDUCATIONAL ATTAINMENT, ECONOMIC OPPORTUNITY AND KENTUCKY'S FUTURE

INTRODUCTION

A common perception, both nationally and in Kentucky, is that the Commonwealth is a low- income state with a low educational attainment. This chapter verifies Kentucky's perceived low standing among competitor states and makes the case that these two indicators – the state's low educational attainment and low per capita income – are correlated.

ECONOMIC OPPORTUNITY— TODAY AND TOMORROW

A QUICK HISTORY

The most common measure for standard of living and economic opportunity is per capita personal income — the total personal income (earnings, dividends, interest, rent, and transfer payments) received by Kentuckians divided by the population of the state. Per capita personal income (PCPI) is a fundamental measure of a state's economic well-being.

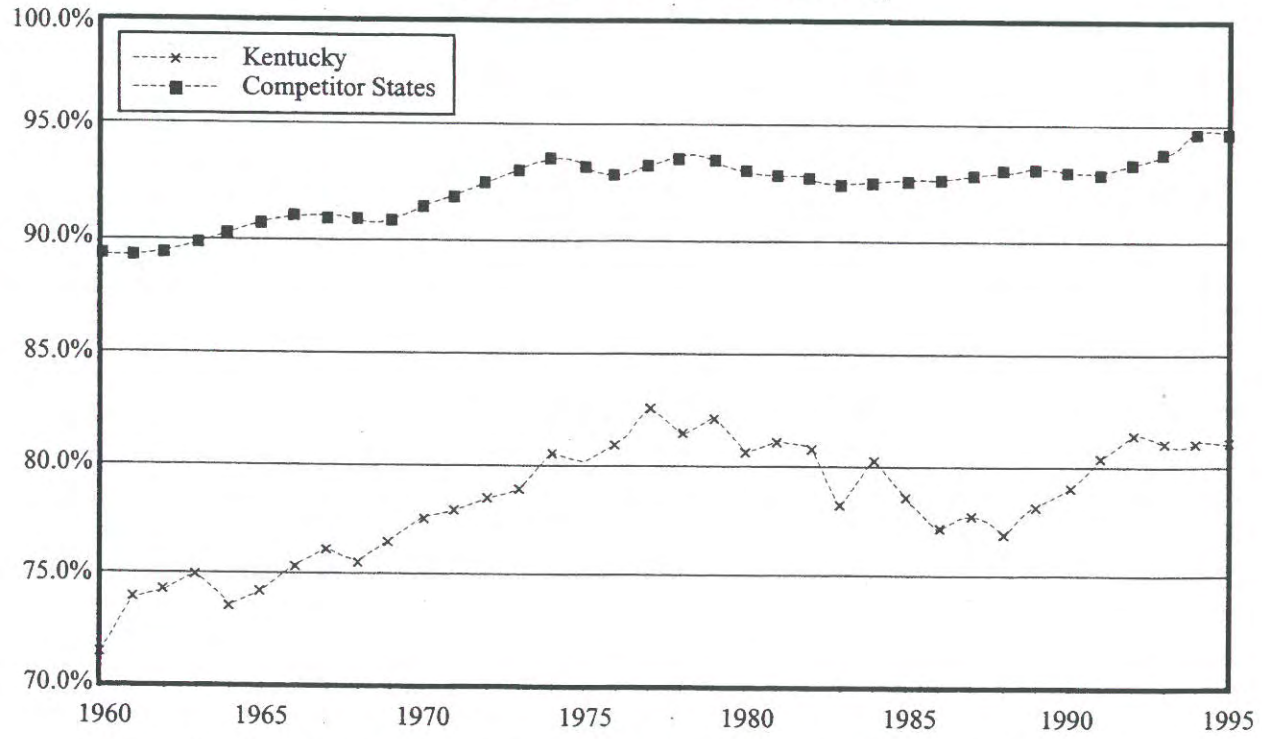
In 1960, Kentucky's per capita personal income was approximately 73% of the U.S. average. Today, Kentucky's per capita personal income is 81% of the U.S. average. By contrast, Kentucky's 14 competitor states (those states which compete with Kentucky for jobs and capital formation) average 95% of the national per capita personal income. (The competitor states, which will be referred to throughout this report, include Alabama, Florida, Georgia, Illinois, Indiana, Louisiana, Mississippi, Missouri, North Carolina, Ohio, South Carolina, Tennessee, Virginia and West Virginia.)

WITHOUT A CHANGE IN PUBLIC POLICY DIRECTION, KENTUCKY'S ECONOMIC FUTURE AND STANDARD OF LIVING WILL NOT IMPROVE RELATIVE TO THE REST OF THE COUNTRY.

Figure 1 shows per capita personal income for Kentucky and competitor states as a percentage of the U.S. average. Kentucky's per capita personal income rose from 1960 to the late 1970s and declined throughout most of the 1980s, reaching a low point of 77% of the national average in 1988. The "bump" in per capita personal income during the late 1970s can be attributed primarily to the coal boom. The "dip" in per capita personal income in the 1980s can be attributed to the coal decline and the national economic recession of 1980-82. This recession had a dramatic impact on the Kentucky economy due to the loss of manufacturing jobs. The increase beginning in the late 1980s is due in part to the effects of Toyota and the state's aggressive economic development initiatives. Competitor states, however, achieved a higher relative per capita personal income than Kentucky over this same period.

The Bureau of Economic Analysis (BEA) projects that Kentucky's per capita personal income will be approximately 83% of the U.S. average by the year 2015 and that the gap between Kentucky and its competitor states will remain constant. Kentucky is projected to remain a low-income state.

Figure 1
Per Capita Personal Income for Kentucky and Competitor States as a Percent of U.S. Average



Competitor states are those indentified in the 1995 Barents Group report "Comparative Analysis of Kentucky's Tax Structure." They are: AL, FL, GA, IL, IN, LA, MS, MO, NC, OH, SC, TN, VA, and WV.

The gap between Kentucky and its competitor states is not projected to change without a change in public policy direction (Figure 2).

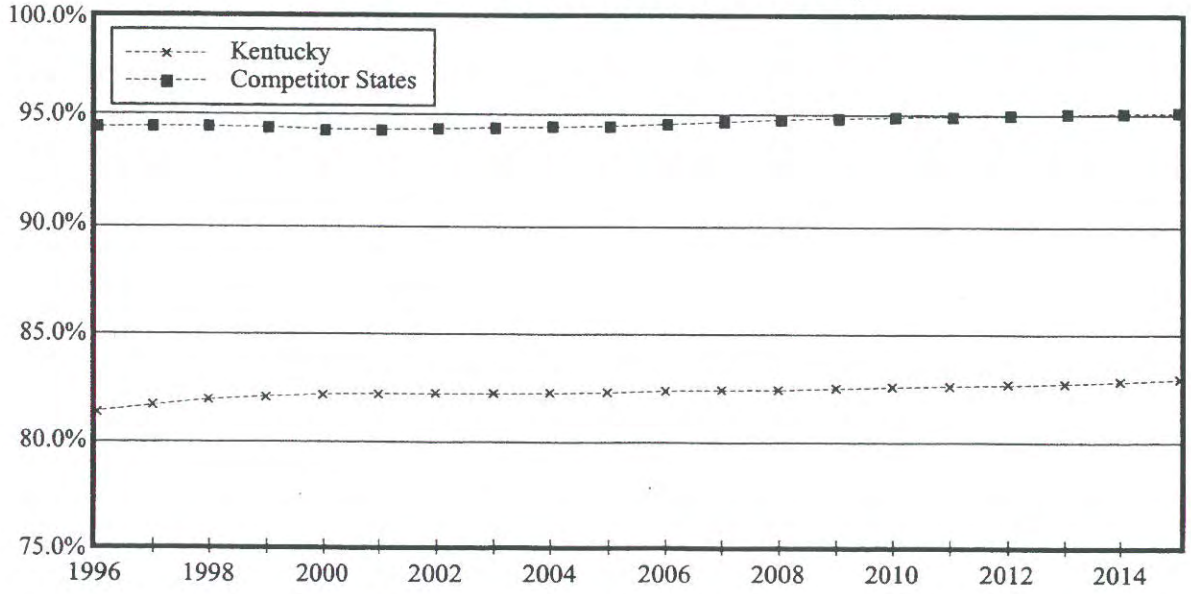
POSTSECONDARY EDUCATION REFORM AND IMPROVED ECONOMIC OPPORTUNITIES

The *Kentucky Annual Economic Report* (1997) notes that workers with high levels of education will earn more in the labor market and thus increase their states' per capita personal income. The same study, which compares the variation in income across the states for 1995, reaches the conclusion that lack of education – primarily the state's low percentage of college graduates – is responsible for the income difference between Kentucky and all other states. According to the study, 57% of the difference between Kentucky's per capita personal income and the average of the other states' per capita personal income can be attributed to educational differences (Figure 3).

LOW EDUCATION ATTAINMENT ACCOUNTS FOR UP TO 57% OF THE DIFFERENCE IN PER CAPITA INCOME BETWEEN KENTUCKY AND ALL OTHER STATES.

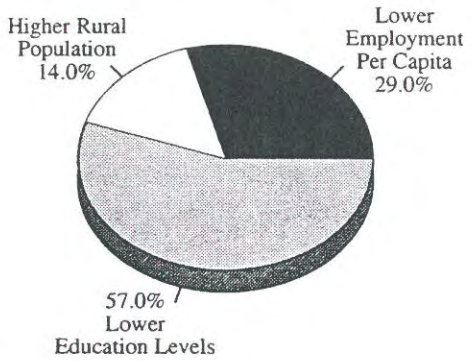
Other factors identified by the report as contributing to Kentucky's low income in-

Figure 2
Forecast of Per Capita Personal Income for Kentucky and Competitor States as a Percent of U.S. Average



Competitor states are those indentified in the 1995 Barents Group report "Comparative Analysis of Kentucky's Tax Structure." They are: AL, FL, GA, IL, IN, LA, MS, MO, NC, OH, SC, TN, VA, and WV.

Figure 3
Explaining Difference Between Kentucky and U.S. Per Capita Income, 1995



Source: 1997 Kentucky Annual Economic Report GOPM-519.prs

clude the large percentage of Kentucky's population living in rural areas (14%) and lower employment opportunities (29%). The higher rural population represents a "quality of life" choice that is important to Kentuckians. Still, as much as 86% of the state's lower standard of living may be affected by lower educational levels since one could argue that a more educated workforce is necessary for Kentucky to compete for new jobs. Many factors affect economic development and increased per capita personal income, such as infrastructure and an efficient government. However, as this study demonstrates, education is the key element. Kentucky will not close the gap between its per capita personal income and the national average without significant increases in the educational attainment of its citizens.

RESEARCH CLEARLY INDICATES THAT THE MAJOR SHARE OF THE DIFFERENCE BETWEEN ECONOMIC OPPORTUNITY AND STANDARD OF LIVING IN KENTUCKY AND THAT OF THE NATION IS THE STATE'S LOW LEVEL OF EDUCATIONAL ATTAINMENT.

INVESTING IN HUMAN CAPITAL — EDUCATION PAYS

EDUCATIONAL ATTAINMENT AND EARNINGS

Research indicates that education benefits both the individual and society. Many of the benefits are quantifiable, such as additional lifetime earnings resulting in additional tax payments to the government. Other educational benefits are much more difficult to quantify, such as personal satisfaction from individual accomplishment cultural enrichments, political participation, quality of life and contributions to society.

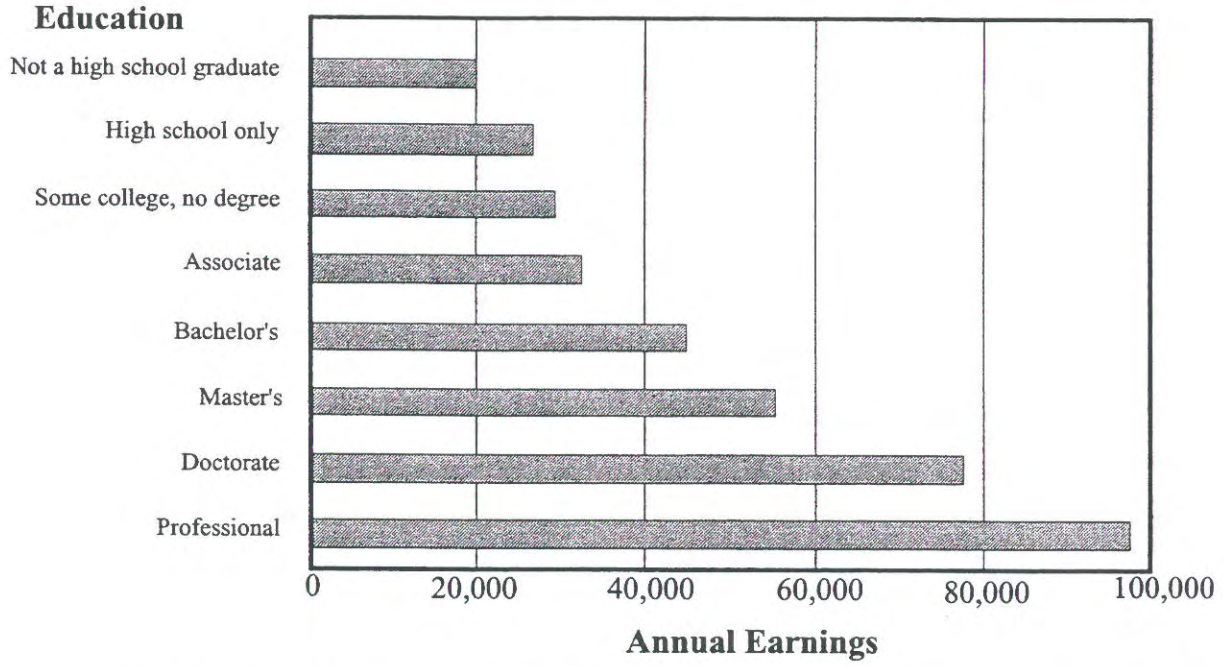
A 1993 University of Kentucky publication, *Economic Impact of Public Higher Education in Kentucky* (two studies), analyzed the economic impacts of higher education and calculated that for 1991-92, Kentucky's public colleges and universities added $8.52 billion to the present value of Kentucky's human capital wealth. (This figure represents the present value of the increases in lifetime earnings that the students enrolled in 1991-92 gained by adding one more year to their educational experience.) From 1989 to 1993, the annual "value added" from education totaled $32.7 billion.

In comparison, state support for higher education during these four fiscal years totaled $2.54 billion. The return in the form of increased human capital wealth to the state was 12.9 times the state's investment. Thus, state expenditures in support of Kentucky's public institutions of higher learning have had substantial multiplier effects, making for higher levels of income and employment than would otherwise exist in the Kentucky economy.

A 1996 study by the Workforce Development Cabinet, *Kentucky Occupational Outlook to 2005*, underscores this point. The types of jobs in the future workplace will be determined by factors such as the marketplace, but "education will continue to be the most critical to one's success in the workplace of the future." Traditionally, education pays off in higher earnings. In fact, the value of education has increased over the past 20 years. As the study notes, ***"education pays the rest of your life."*** Not every person who holds an advanced degree reports high income and many people who have left school early have high incomes today. But the study notes the "clear relationship" between the amount of schooling and subsequent earnings (Figure 4).

In 1980, Kentucky males between the ages of 25-55 who dropped out of high school earned about 17% less than those who completed high school, according to a

Figure 4
Educational Attainment and Earnings



Source: U.S. Department of Commerce, Bureau of the Census, mean annual earnings for full-time workers age 18 and over by highest level of education, 1994

GOPM-528.prs

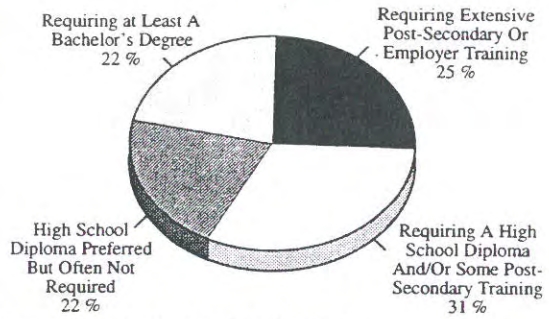
1996 study by the Kentucky Long-Term Policy Research Center, *The Earnings of Drop-outs and High School Enrollments: Evidence from the Coal Boom and Bust.* Those who completed college earned about 32% more than high school graduates. **By 1990, those males who completed college earned nearly 60% more than those who completed high school.** Thus, Kentucky seems to have exhibited many of the same patterns of earnings as the United States as a whole.

EDUCATIONAL ATTAINMENT AND FUTURE JOB GROWTH

The previously referenced Workforce Development Cabinet study also looked at the levels of education and training generally required to gain employment in various occupational fields today and requirements for the future. The four broad educational requirements used to organize the occupations are as follows: bachelor's degree or more; extensive postsecondary (less than a bachelor's degree) and/or employer training; high school diploma and/or some postsecondary training; and high school diploma preferred, but often not required.

The Kentucky economy is expected to grow 17% and create more than 300,000 new jobs from 1994 through 2005. The changing nature of the workplace indicates that many of these new jobs will require some form of postsecondary education. **The professional, paraprofessional and technical occupations will produce the most new jobs of all occupational sectors.** New service jobs will rank second among all occupational sectors. Within these two major occupational sectors, health care and computer-related occupations will grow very rapidly through 2005. Figure 5 indicates that employment will grow in occupations requiring all levels of education and training: 25% for occupations requiring extensive postsecondary or employer training; 31% requiring a high school diploma and/or some postsecondary training; and 22% requiring at least a bachelor's degree.

Figure 5
Percent of Total Kentucky Job Growth by Education or Training 1994-2005



Source: Kentucky Workforce Development Cabinet, Department for Employment Services, Research and Statistics Branch

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An analysis of the projected growth and the education and training required for the fastest growing occupations indicates that nearly 80% of the new jobs will require some form of postsecondary training. Those low-skill occupations which do not require a high school diploma or additional education or training beyond high school will continue to decline in the total share of employment.

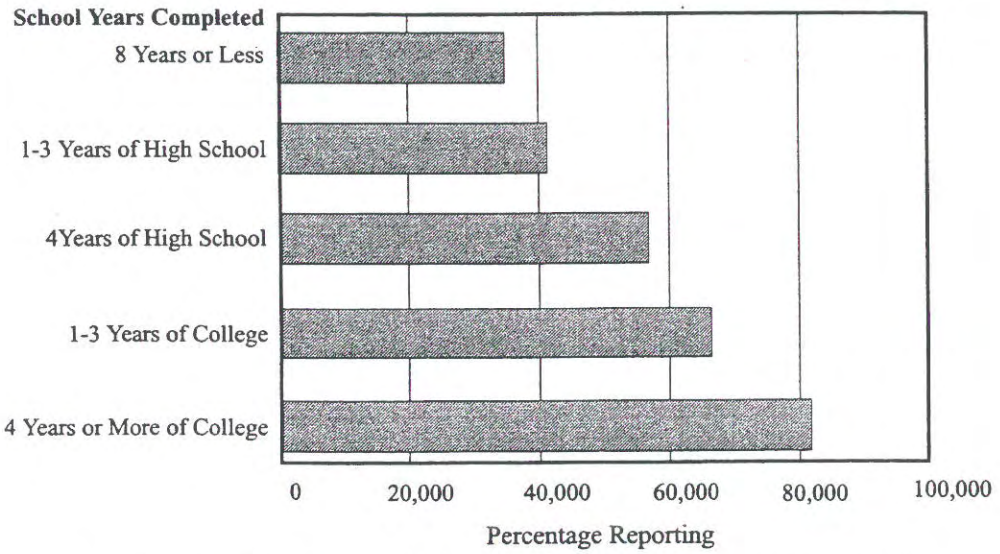
While the educational requirements for many of the low-skilled jobs will remain unchanged, those jobs will be less and less available in the future. Occupations undergoing the greatest decline in Kentucky today are those which require little or no advanced education beyond high school; for example, sewing machine operators, bank tellers and farm workers. It is estimated that Kentucky will lose more than 8,000 jobs by 2005 in those three occupational categories alone. Automation and technology changes account for much of the declining employment. Moreover, farming, like mining, has undergone vast changes and uses fewer workers to generate greater production.

All of the workers in these declining occupations that require little training and education will be at a significant disadvantage as their jobs disappear and are replaced with higher skill opportunities. Kentucky is already experiencing a significant loss of low-skill jobs with the recent departure of several garment production plants. Without participation in postsecondary training and education, these workers and others face dim prospects today and in the future.

EDUCATIONAL ATTAINMENT AND A BETTER LIFE

As the workplace continues to undergo great change, more and more of Kentucky's workers will be at a disadvantage because of the low educational attainment of the current population. According to a 1997 Workforce Development Cabinet study, *Adult Literacy in Kentucky: Adult Education Changing Lives,* **between 40-44% of the**

Figure 6
Voting Participation in the U.S. by Level of Education Attainment
Percent Reporting They Voted in 1992 Presidential Election



Source: U.S. Bureau of the Census, statistical Abstract of the U.S. 1996 (116th edition) Washington, DC,1996

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current population does not have the skills to fully participate in the increasingly technological workforce. Tomorrow's, and increasingly today's, jobs will demand high skills and new and expanded educational requirements. Without access to and participation in postsecondary education, Kentucky's citizens will be further disadvantaged in the workplace of the future.

In addition to the economic benefits of education, evidence suggests that there are numerous non-quantifiable benefits that accrue to both the individual and to society as a result of additional education. The unique role of postsecondary education in developing well-rounded citizens cannot be overlooked.

Kentucky's citizens of tomorrow must be prepared to function in a global economy, to think critically, and to function productively in group decision making and consensus building. A broad educational experience provides citizens with transferable skills, which are critical for adjusting to the multiple careers individuals can expect to have during the course of a lifetime of work.

A broad general education also provides the foundation for a civic consciousness and an awareness of individual responsibility to others and to the community. Voter participation is one key measure of civic participation. Figure 6 demonstrates that there is a clear relationship between voter participation and educational attainment. This data was taken from the 1996 U.S. Census and shows the percentage of adults nationally who voted in the 1992 Presidential Election and their respective educational levels. This analysis establishes important linkages between education levels and various citizenship benefits. This is just one measure for some of the non-quantifiable benefits that are derived from education (U.S. Department of Commerce, Bureau of the Census).

CONCLUSION

Kentucky's economy has grown in recent years, but is still a relatively low income state compared to competitor states and the entire nation.

For Kentucky to achieve its full potential in terms of enhanced economic opportunity and an improved standard of living for its citizens, a firm commitment to education is a necessity. The reform of elementary and secondary education has been a priority in Kentucky for the last seven years. However, an improved postsecondary education system is also critical to the long-term future of this state. Evidence indicates that enhanced investment in postsecondary education is worth it – worth it to both the individual and the state at large.

Chapter 2 examines the current status of educational attainment and the postsecondary education system in Kentucky.

CHAPTER 2: A POSTSECONDARY EDUCATION SYSTEM UNPREPARED FOR THE NEXT CENTURY

INTRODUCTION

By almost any national measure, Kentucky lags other states in the educational level of its citizens; in many instances, it is significantly behind. The rapidly changing economy intensifies the negative impact. Although Kentucky has made progress in many areas of postsecondary education, the Commonwealth's educational level remains depressed. Kentucky's investment in postsecondary education has failed to lift the Commonwealth from beneath its competitor states in terms of educational attainment, and subsequently, per capita income. This chapter will discuss the following issues:

Educational Attainment. Kentucky still lags the nation and competitor states in educational attainment even as college-going rates have increased. Among competitor states, Kentucky's high school dropout rate is high and postsecondary degree production is low, especially in areas critical to the economy.

Educational Efficiency. The state's postsecondary providers continue to have numerous "low performance" (see page 25) and duplicative programs. No coordination exists to link the state's critical mass of postsecondary institutions to a statewide mission, to the regional economies or to prevent unnecessary duplication

Research Competitiveness. Kentucky lags the nation and competitor states in its research capacity as measured both by the ability to attract external funding and in recognition of the state's doctoral programs. Kentucky does not have a nationally-recognized research institution with a mission of excellence and promoting economic development.

These issues and Kentucky's continued low standing among its competitor states raises the question: ***"Is Kentucky's postsecondary education system prepared to meet the demands of its citizens in the next century?"*** An examination of the existing institutions, policies and organizational structure results in a definitive, *No.*

THE STATE'S POSTSECONDARY EDUCATION RESOURCES

Kentucky's postsecondary education system is broader than the system traditionally defined as "higher education." The state's capacity to raise the standard of living and enhance the well-being of citizens must include all postsecondary education resources. The current system includes:

- **Adult Basic Education and Literacy Programs**
  These include job-specific and workplace skills instruction; literacy and basic education; adult secondary education and GED preparation; the external diploma; English as a second language; and family literacy. These programs are coordinated by the Workforce Development Cabinet, which uses the services of more than 100 providers, including local school districts, literacy councils, technical schools and community colleges.

- **The Kentucky TECH System**
  This system offers diplomas, certificates and customized training through an array of technology centers and secondary programs under the authority of the State Board for Adult and Technical Education and the Workforce Development Cabinet. This system originally provided instruction in traditional manual arts, such as carpentry and welding, and now provides technical courses of study in health, business, and electronics of up to two years.

- **The University of Kentucky Community College System**
  This system consists of 14 community colleges which deliver programs for associate degrees, offer technical courses and provide a feeder system for four-year institutions. These colleges are all attached to the University of Kentucky. The community colleges were originally established to provide a course of study for the first two years of a baccalaureate degree. The colleges, however, now have multiple technical programs providing courses of study designed to prepare students to enter the workforce.

- **State-supported Universities**
  These eight institutions include two research and doctoral-granting universities and six undergraduate (associate and baccalaureate) and master's degree granting institutions. In addition to their primary focus, these institutions now include remedial and community college programs. These institutions have governing boards and are statutorily coordinated by the Council on Higher Education.

- **Independent Colleges and Universities**
  These are private, non-state supported institutions, which typically place a high priority on the liberal arts as well as preparing students in professional

and technical fields. There are 20 accredited independent institutions.

- **Proprietary Schools**
  These are private, for-profit institutions designed to prepare persons in specific career areas, including preparation for state and federal licensure requirements. There are currently 98 proprietary entities licensed in Kentucky.

- **Council on Higher Education (CHE)**
  The Council provides leadership to advance and maintain a postsecondary higher education system in the Commonwealth. Its duties include setting tuition rates, approving degree programs, and setting admission standards for the colleges and universities. Its responsibilities do not include oversight of the Kentucky TECH system.

CRITICAL ISSUES — FAILING GRADES

Kentucky's postsecondary education system has expanded over time. The community college system was established by the General Assembly in 1962. The regional institutions were elevated to university status by the General Assembly in 1966. In 1968, Northern Kentucky University became a four-year institution. The University of Louisville was accepted as a state-supported university in 1970. In 1982, the state's universities were given increased fiscal autonomy. The Kentucky TECH system was assigned to the Workforce Development Cabinet when that cabinet was created in 1990.

Despite the expansion of the postsecondary education system, Kentucky has not achieved passing grades on several indicators which are critical to enhanced economic and social well-being.

EDUCATIONAL ATTAINMENT — KENTUCKY FALLS BEHIND

Kentucky postsecondary education faces a challenge to improve the knowledge and skills of the state's population. Kentucky must face the reality that it continues to have a significant proportion of its population with low levels of educational attainment. ***However, simply increasing the knowledge and skills of the younger population will not be sufficient to meet the state's needs.***

The previously cited 1997 literacy report estimates that 40% to 44% of the state's adult population has "modest, minimal or no functional literacy skills." It is particularly the adult population, which today does not "fully participate" in the Kentucky economy, that will be key to increasing the state's economic competitiveness and per capita income in the future.

KENTUCKY FALLING BEHIND . . .

40% - 44% OF KENTUCKY'S ADULT POPULATION HAS "QUITE MODEST, MINIMAL OR NO FUNCTIONAL LITERACY SKILLS."

Additionally, Kentucky's population is aging and most adults now currently working will remain in the workforce well into the 21st century. Because of its expected growth, this adult population will continue to be a critical source of the Commonwealth's workforce. According to U.S. Census Bureau figures, the percentage of the population ages 15 to 64 is expected to comprise up to 65% of the population by 2020. Kentucky cannot afford to ignore the needs of its growing undereducated adult population.

DROPPING OUT

One probable explanation for Kentucky's lagging educational attainment, especially among the adult population, is the state's high school dropout rates. Youth who drop out of high school continue to show up in the proportion of the population with less than a high school education. Although complete data on county dropout rates is not available, one important federal statistic highlights the problem. ***According to U.S. Census figures, Kentucky ranks at the very bottom — in a near tie with Mississippi — among competitor states for the percent of its population with less than a high school degree*** (Figure 7). In order to compete effectively, Kentucky must elevate the existing undereducated adult population to at least the high school diploma level.

While Kentucky's effort to reform elementary and secondary education is intended to raise academic expectations of students and lower the state's high school dropout rate, Kentucky still faces the challenge of raising the educational level of the adults in the workforce today. ***It can be anticipated that an increasing number of the adults who lack a secondary education credential will find it necessary to return to***

KENTUCKY FALLING BEHIND . . .

ONLY 13% OF THE STATE'S ADULT POPULATION HAS COMPLETED A BACCALAUREATE DEGREE COMPARED TO THE NATIONAL LEVEL OF 20%.

KENTUCKY RANKS HIGH AMONG COMPETITOR STATES IN POSTSECONDARY ENROLLMENT, BUT NEAR THE BOTTOM FOR STUDENT COMPLETION.

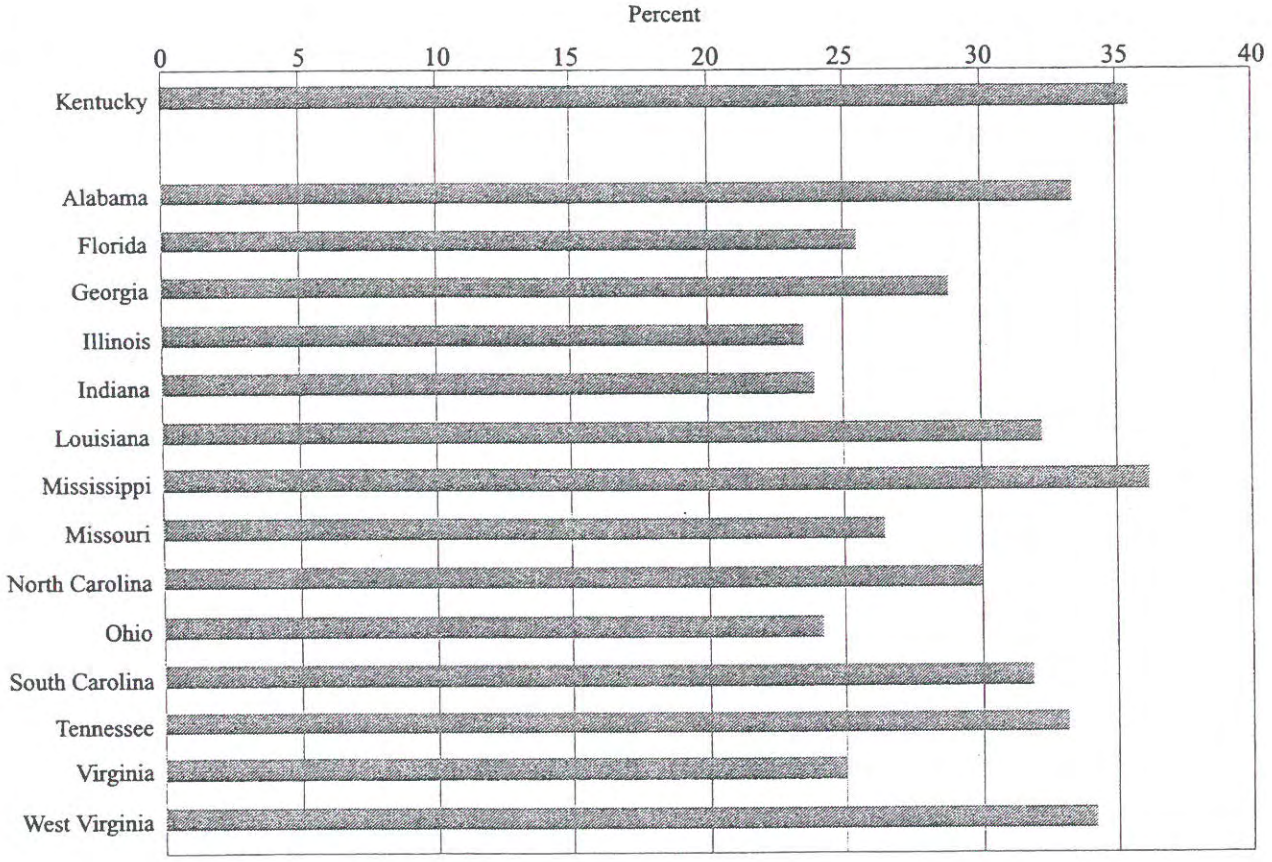
obtain a GED and additional postsecondary training and education.

INCREASING PARTICIPATION

Kentucky has made significant gains in college-going rates over the past decade. ***The college participation rate in Kentucky increased from more than 25% in 1985 to 37.8% in 1994.*** The greatest improvements occurred in southeast and south-central Kentucky. The percent of college enrollment — an indication of adult participation — also increased during that same period. It peaked in 1991, perhaps reflecting the higher enrollments that usually occur during periods of economic downturn.

Since the peak year of 1991, enrollment has continued a slight, steady decline. Overall enrollment in Kentucky's state-supported institutions and the Kentucky TECH system is currently decreasing. Kentucky

Figure 7
Educational Attainment of Adult Population, 1990
Less than High School



Source: U.S. Census Bureau

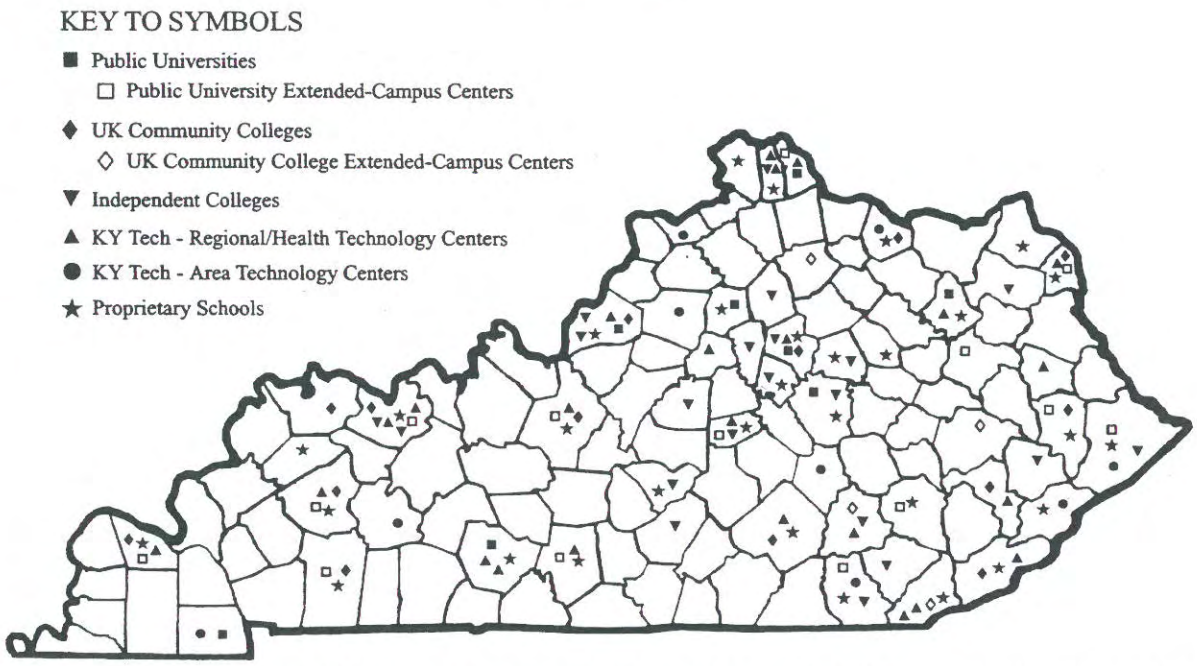
TECH is experiencing a decline in full-time enrollment, but an increase in part-time enrollment and in programs for upgrading skills, apprenticeship, continuing education and special training for incumbent workers. Although the number of students pursuing graduate, post-doctoral and first-professional degrees is increasing, as is the enrollment of African-Americans, women and adult (over age 25) students, these increases do not negate the overall steady decline in postsecondary participation in Kentucky.

PARTICIPATION AND PROXIMITY

While geographic accessibility of postsecondary education in Kentucky is highly concentrated, Figure 8 indicates that major gaps still exist in certain areas. The Commonwealth's rural configuration (particularly when the major urban areas are excluded), presents a geographic barrier to postsecondary education in selected areas and at certain educational levels.

Patterns of high participation in postsecondary education match almost

Figure 8
Post Secondary Education In Kentucky
By County



Note 1: For proprietary schools, one symbol ★ may represent more than one institution within a county (particularly in counties with a greater population density).

Note 2: A ◇ was used to designate the Lees Collage Campus of Hazard Community College.

Note 3: There are 32 Area Technology Centers that serve both full-time postsecondary and secondary students and do not offer postsecondary programs.

county-by-county to the location of public and independent institutions (Figure 9). This trend would suggest that access, as well as high school completion, plays an important role in the lagging educational attainment and postsecondary participation in the state.

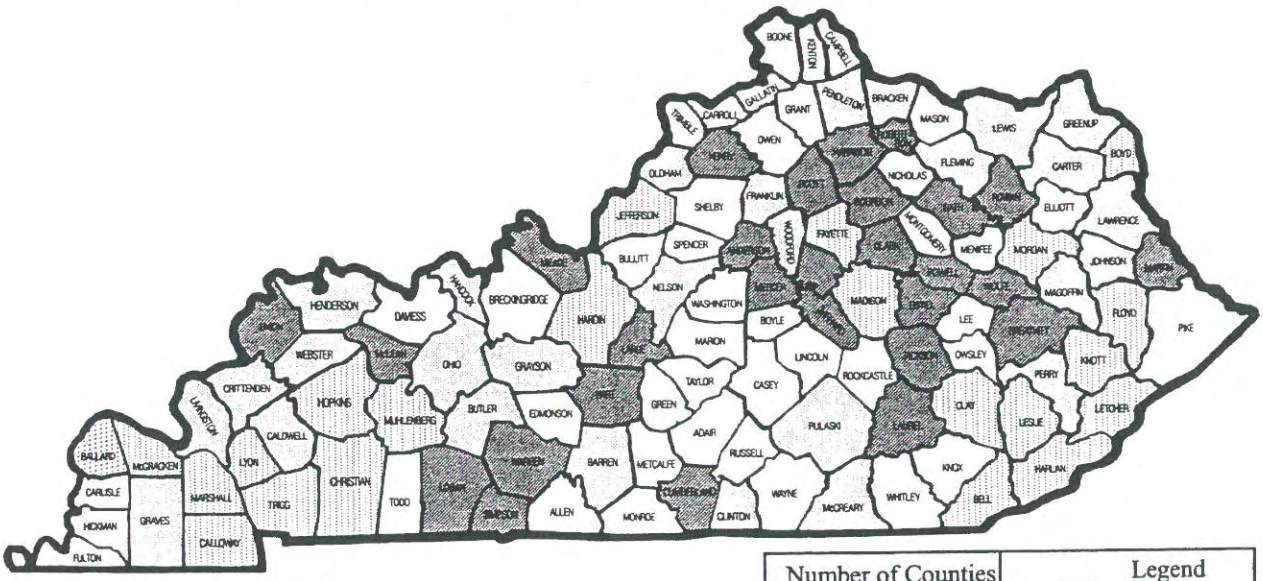
LOW PERSISTENCE AND GRADUATION

Despite Kentucky's gains in college participation over the past decade, the Commonwealth's postsecondary education system does a poor job in getting students through the system to a credential in a reasonable time period. The two common measures for this are persistence rates and graduation rates. A persistence rate measures the percentage of first-time, full-time degree-seeking freshman who either graduate, transfer to another state-supported institution or are still enrolled at the original institution at the end of a six-year period.

The latest data for Kentucky is for students who were first-time, full-time freshmen in 1989. ***The persistence rate for these students over a six-year period was 63.3%.*** While exactly comparable data are not available, national data demonstrate that Kentucky lags seriously behind other states.

Figure 9

Higher Education Participation Rates, Fall 1994
Participation in All Public Institutions



First-time, Full-time Freshman, Fall 1994 as Percent of High School Graduates, Spring 1994

Source: Commonwealth of Kentucky, Council on Higher Education and Kentucky Department of Education

Number of Counties	Legend
22.5% - 27	63-87%
23.3% - 28	52-62%
23.3% - 28	41-51%
30.8% - 37	18-40%

KENTUCKY FALLING BEHIND . . .

KENTUCKY IS LAST (15TH) AMONG COMPETITOR STATES IN THE NUMBER OF BACCALAUREATE DEGREES GRANTED IN COMPUTER SCIENCE, ENGINEERING AND SCIENCE PER 1,000 HIGH SCHOOL GRADUATES.

KENTUCKY IS 14TH IN THE NUMBER OF ASSOCIATE DEGREES GRANTED AMONG COMPETITOR STATES.

Data from a national sample of first-time, full-time freshman in the same cohort (1989) from the National Center for Education Statistics (NCES) shows a persistence rate for five years of 77%. In other words, despite the shorter period – five years compared to Kentucky's six-year tracing period – ***the persistence rate for the national sample was 14 percentage points higher than for Kentucky's students.***

Graduation rates show the percentage of first-time, full-time degree-seeking freshmen who graduate within a specified period of time appropriate to the degree the students are seeking: three years for associate degree students, six years for a student seeking a baccalaureate degree, and three years from the year of transfer for a student who transfers with an associate degree and is seeking a baccalaureate degree. Again, Kentucky lags seriously behind other states in these categories. ***Only 36.8% of the first-time, full-time degree-seeking freshman in 1989 graduated from Kentucky's four-year institutions within six years.*** Again, exactly comparable national data is not available. But the NCES data from a national sample for the same cohort for a shorter period – five years – was 52%. In other words, a higher percentage of students graduated in the national sample in a shorter period than graduated in Kentucky in a longer time period.

The situation for students in the UK Community Colleges is more complicated, but still should be of concern. A critical mission of a community college is to serve students who seek short-term retraining or specific knowledge and skills, but who do not seek a degree. Therefore, it is inappropriate to calculate persistence and graduation rates to include these students. Nevertheless, it is appropriate to calculate these rates for those students who **do** express an interest in earning a degree. The data for the UK Community Colleges for degree-seeking students shows a persistence rate of 46.4% of the first-time, full-time degree-seeking freshmen. ***In other words, 46.4% of these freshmen had either graduated or transferred and were still enrolled three years later.*** Students who transferred were the largest group of persisters.

Figure 10

Estimated Degree Production Required for Kentucky to Reach National Averages

The estimates contained in this table were derived using both the number of young adults (17-29 year old) in the population and the number of high school graduates.

Type of Degree	Derived National Level	Current Kentucky Level	Difference	Percentage Increase Necessary for Kentucky to Reach National Levels
Certificates	9331	5681	3650	64%
Associate's	8456	6431	2025	31%
Bachelor's	17554	14584	2970	20%
Master's	5972	4222	1750	41%
Doctoral	672	397	275	69%

Source: NCHEMS, November 4, 1996

The graduation rate for UK Community Colleges for the 1990 first-time, full-time degree-seeking freshman was 13.8% within three years. While this may appear to be a low figure, it is comparable to other community colleges in the nation and reflects the mission of these institutions. Of more concern should be the low percentage of degree-seeking students who transfer from the UK Community Colleges to a university and receive a degree within three years. ***Of these associate degree students who transferred from one institution to another in Kentucky, only 1.9% earned a degree within three years and 41.6% were still enrolled after three years.***

This data suggests that a significant number of Kentucky students get into the system, but have difficulty in getting through the system to the credential they are seeking. Many factors may contribute to this situation. Some of the most frequent include: (1) The financial burdens students face in trying to pursue their education while trying to earn a living and, in many cases, to support a family; (2) difficulties student encounter in matching course schedules and academic calendars with work and family obligations; and (3) inadequate advising and counseling. Whatever the causes may be, Kentucky faces a severe problem that must be overcome if its degree production is to reach the levels of competitor states.

LOW DEGREE PRODUCTION

Although the total number of degrees conferred annually by the state's public colleges and universities increased by 21% between 1984 and 1994, Kentucky continues to fall behind the national average in terms of the number of degrees granted at every level. ***Figure 10 indicates that Kentucky would need***

to increase degree productivity at the certificate level by 64% and at the doctoral level by 69% to reach national average levels.

Kentucky is especially deficient in degree production in those areas critical to economic development. Although Kentucky is a leader in graduating students in the health arena, the number of engineering, science and business graduates is low. In fact, Kentucky is last (15th) among competitor states in the number of baccalaureate degrees granted in computer science, engineering and science per 1,000 high school graduates. With the economic changes in the country, these areas are essential to altering the state's economic future. Kentucky is also next to last (14th) in the number of associate degrees granted among competitor states, indicating a lower supply of highly-skilled technical workers who will be critical to the emerging economy.

If Kentucky is to compete effectively in the 21st century, the system must broaden its focus to include the growing portion of the population for whom access is limited. Kentucky's postsecondary education system has traditionally focused on high school graduates. But many factors, including the high dropout rate, the changing economy and the growing numbers of nontraditional students, demand change.

MASTER'S DEGREES: A LOOK AT INEFFICIENCY

THE AVAILABILITY OF MASTER'S PROGRAMS PROVIDES ONE EXAMPLE OF THE PROBLEMS OF "LOW PERFORMANCE" PROGRAMS. IN THE 1995-96 SCHOOL YEAR, 4,187 MASTER'S DEGREES WERE GRANTED IN KENTUCKY'S EIGHT PUBLIC UNIVERSITIES; 129 DIFFERENT KINDS OF MASTER'S WERE OFFERED. THIS IS AN AVERAGE OF 32.5 DEGREES ISSUED FOR EACH OF THE 129 DISCIPLINES. SINCE MANY INSTITUTIONS OFFERED THE SAME PROGRAM, THERE WERE ACTUALLY 286 MASTER'S COURSES OFFERED STATEWIDE. THIS IS AN AVERAGE OF 14.6 DEGREES PER PROGRAM.

IF FIVE IS CONSIDERED TO BE THE NUMBER OF MASTER'S DEGREES PRODUCED IN AN EFFICIENT PROGRAM, THEN AN ANALYSIS OF THE KENTUCKY OFFERINGS SHOW: 33% OF THE DISCIPLINES GRADUATED LESS THAN FIVE STUDENTS STATEWIDE. ON AN INSTITUTIONAL BASIS, 41% OF THE 286 INDIVIDUAL PROGRAMS OFFERED GRANTED LESS THAN FIVE MASTER'S DEGREES.

Kentucky's postsecondary education system also must ensure that students who leave college do so with a degree, or credential, in their hands. Degree productivity has increased by 44% for nontraditional students. But even with this encouraging trend, the low degree production at all levels of the system results in a workforce deficit in the next century.

EDUCATIONAL EFFICIENCY – LOW PERFORMANCE PROGRAMS AND HIGH DUPLICATION

Kentucky's postsecondary education resources are widely dispersed in mostly small, uncoordinated facilities. The result is a high degree of duplication, "low performance" programs and a lack of coordination for efficiency for students and improvement of regional economies.

LOW PERFORMANCE PROGRAMS

Current state policies provide few clear directions for the universities — and the system as a whole — to achieve efficiencies, eliminate low-performance programs, or develop joint or cooperative programs. The 1993 Higher Education Review Commission (HERC) attempted to address this problem by identifying "low performance" programs — programs that graduate comparatively few students each year. Using this approach, associate and baccalaureate degree programs averaging fewer than 10 graduates per year over a five-year period were determined to be "low performance" programs. At the master's level, degree programs averaging fewer than five graduates per year over a five-year period were determined to be "low performance" programs. At the doctoral level, degree programs averaging fewer than three graduates per year over a five-year period were determined to be "low performance."

A 1996 Council on Higher Education review of degree programs statewide indicates that almost one-half, or 45%, are "low performance" programs. Figure 11 provides summary data on low performance programs for the state's universities and community colleges. ***Of the 1,142 degree programs offered across the state, 511 are "low performance."*** For the individual universities, a range from 43% to 75% of all degree programs are "low performance." Similarly, "low-performance" programs at indi-

Figure 11

Kentucky 1995-96 Degree Production Low Performance Programs

Associate - Community College System*	38%
Associate - Universities*	60%
Baccalaureate*	45%
Masters**	41%
Doctoral***	33%

*Low Performance - fewer than 10 degrees in 1995-96
**Low Performance - fewer than 5 degrees in 1995-96
***Low Performance - fewer than 3 degrees in 1995-96

vidual community colleges range from 14% to 60%.

In some cases, "low performance" programs may be justified; for example, to provide access to special populations or to meet state needs. But "low performance" programs can also be an indication of the failure of institutions to set priorities and eliminate programs. That several universities offer the same degree program and none of them graduate more than five to 10 students each year raises a basic question about the adequacy of state leadership by the Council on Higher Education and the incentives in the financing policies. *Why are institutions not held accountable for eliminating unnecessary programs? Why are there not strong incentives for two or more universities to work together to share resources and deliver programs jointly or cooperatively?* Despite the efforts of the HERC, the numbers suggest that Kentucky still has a major problem.

There are also numerous examples of programs on two or more campuses that graduate fewer than 10 students statewide. For example, one major is offered on five campuses and had a total of nine graduates in 1996.

Figure 12 shows the number of "low performance" programs distributed at universities across the state. An example from the chart is indicative of the problem. Why are five universities offering the same six academic programs at the baccalaureate level, but each of these programs averaged less than 10 graduates in 1995-96?

Figure 12

Low Performance Degree Programs
1995-96

BACHELOR'S (Averaging Less than 10 Degrees Per Program)	
Number of Degree Programs	**At Number of Universities**
6	7
3	6
6	5
3	4
4	3
14	2
45	1

MASTER'S (Averaging Less than 5 Degrees Per Program)	
Number of Degree Programs	**At Number of Universities**
2	7
1	6
5	5
1	4
4	3
7	2
32	1

Note: These figures are calculated by taking the number of degrees conferred in 1995-96 and dividing by the number of programs offered.

Figure 13

CIP Codes Shared by Kentucky Tech and UK Community College System
(P = Number of Programs)

CIP	KY TECH TITLE	P	COMMUNITY COLLEGE TITLE	P	TOTAL
15.0401	Biomedical Equipment Technician*	2	Biomedical Engineering-Related Techno/Technician	1	3
15.0403	Electromechanical Techno/Technician*	1	Electromechanical Techno/Technician	4	5
20.0202	Child Develop. Services**	3	Child Care Provider/Assistant	3	6
48.0102	Architectural Drafting**	1	Architectural Drafting	1	2
50.0402	Visual Communications*	1	Graphic Design, Commercial Art & Illustration	2	3
51.0907	Radiological Tech*	6	Medical Radiological Techno/Technician	5	11
51.0908	Respiratory Care Technician*	9	Respiratory Therapy Tech.	5	14
52.0302	Accounting Assistant*	8	Accounting Technician	4	12
	TOTAL	**31**		**25**	**56**

* Indicates articulated/joint program with another educational institution.
** Indicates that articulation agreements are pending.

While the Council on Higher Education publishes the data, it has not effectively addressed the duplicative offerings of "low performance" programs. There are prime examples of how current policies encourage institutions to add new programs without first examining old programs — or how current policies allow one institution to add new programs without seriously considering that an alternative might be to offer the program cooperatively within another university using technology, shared faculty or other more cost-effective means.

Program productivity is less easily documented for the Kentucky TECH system. Although data indicates high placement rates for Kentucky TECH students, the data sets available largely identify total dollars spent and number of graduates, which is of little value in comparing the state's other institutions as it is not gathered in similar units of measurement. Much of the course activity is contractual with business and industry and may range from a few hours to several days. These activities, while important, do not generate certificates or diplomas. The nature of the work of the Kentucky TECH programs makes it difficult to quantify using any measure comparable to other postsecondary institutions or to technical programs from other states.

HIGH DUPLICATION AT THE LOWER DIVISION

Program duplication has long been an issue in postsecondary education. The problem seems to be most acute between the Kentucky TECH system and the community colleges. These institutions offer duplicate programs, sometimes on adjoining campuses. The community colleges produce more vocational/technical degrees than associate degrees. Figure 13, from the Legislative Research Commission's Workforce Training Report (November, 1995), shows the Classification of Instructional Programs (CIP) codes, which is a common system used in postsecondary education. This data demonstrates the high duplication. Among eight program codes shared by the two systems, there are 56 total program offerings.

Figure 14

CIP Codes Shared by Kentucky TECH and the Universities
(P = Number of Programs)

CIP	KY TECH TITLE	P	UNIVERSITY TITLE	P	TOTAL
01.0601	Horticulture	1	Horticulture Services Operation & Mgmt, Gen	1	2
15.0403	Electromechanical Techno/Technician*	1	Eelectromechanical Techno/ Technician	1	2
15.0603	Manufacturing Systems Technology	1	Industrial/Manufacturing Techno/Technician	1	2
20.0202	Child Develop. Services**	3	Child Care Provider/Assistant	2	5
20.0401	Food Services Technology	6	Institutional Food Workers & Administrators	2	8
48.0101	Computer Asst. Drafting**	12	Drafting, Gen.	4	16
48.0102	Architectural Drafter**	1	Architectural Drafting	1	2
48.0508	Welding	16	Welder/Welding Technologist	1	17
51.0801	Medical Assisting**	6	Medical Asst.	1	7
51.0904	Paramedic*	1	Emergency Medical Techno/ Technician	1	2
51.0907	Radiological Tech*	6	Medical Radiological Techno/ Technician	3	9
51.0908	Respiratory Care Technician*	9	Respiratory Therapy Technician	2	11
52.0401	Office Technology*	16	Admin Asst/Secretarial Science, Gen.	3	19
	TOTAL	**79**		**23**	**102**

* Indicates articulated/joint program with another educational institution.
** Indicates that articulation agreements are pending.

Historically, linking the postsecondary technical school programs and course offerings with other higher education initiatives in the state has been difficult. Figure 14, also from the LRC's Workforce Training Report, indicates course duplication across the entire system which may have resulted from this lack of coordination. As noted in the chart, 13 identical CIP codes are shared across the systems, representing 102 total program offerings. The postsecondary community has demonstrated little interest or willingness to coordinate program and course offerings. The Kentucky TECH system has tried with little success to address this problem through an articulation process developed to assist student transition from the technical schools to other postsecondary institutions. The goal is to ease transition for students, eliminate course duplication, increase transferability of course credits and maximize utilization of funding, facilities, equipment, and personnel. But this process has been exceedingly cumbersome and time consuming.

Efforts to enhance transferability have been arduous, requiring detailed reviews of course curricula, textbooks and instructional programming by staff and faculty from each institution involved. Obstacles to more timely and productive agreements include dissension over course content, differences in staff credentials and autonomy across the education system. The magnitude of the problem can perhaps be best explained by example. ***In several cases, Kentucky TECH articulation agreements have been established with out-of-state institutions with few or no problems, while simultaneously rejected by in-state colleges and universities.*** West Kentucky TECH has reached articulation agreements with Southern Illinois University which have not been established with Paducah or Hopkinsville Community Colleges. The Cumberland Valley Health Technology Center has an agreement with Lincoln Memorial University in Tennessee for acceptance of a 32-credit-hour block for graduates of the TECH programs. No such agreement has been possible with any of the state's community colleges. Although two private colleges in Kentucky, Union and Cumberland, did accept articulation agreements with Cumberland Valley.

As another example, statewide system-to-system articulation agreement meetings were initiated in the fall of 1994 with representatives of the Kentucky Department of Education, Department for Technical Education, community colleges and regional universities to establish a statewide agreement in early childhood education, electronics and computer-related courses. Many regional and statewide meetings occurred for each program area. Faculty from all involved institutions spent hours reviewing lesson plans, textbooks, exams and instructional methodology. Finally, after two years, an agreement was implemented on July 1, 1996. ***It should be noted, however, that there is no mechanism for system-wide negotiation either among the regionals or the community colleges.*** Each individual

institution must be involved in the negotiations and must agree to the articulation. Such an arduous task seriously impedes the efficiency of postsecondary education.

Those who suffer most from the lack of coordination among Kentucky's postsecondary institutions are students and employers. Students need the services and coordination to raise their standing of living and obtain essential skills. Employers need the workforce necessary for survival in an increasingly aggressive economy. The duplication and lack of coordination results in the following:

- **Regional economic development initiatives are undermined because business leaders considering Kentucky are faced with a series of squabbling, uncoordinated interests rather than a coherent workforce strategy.**
- **Students who could benefit from a combination of technology and academic skills, services of both Kentucky TECH and the community colleges, are caught between the systems.**
- **Neither the community colleges nor Kentucky TECH have a clearly defined mission to serve the undereducated adult population — especially those who need joint basic skills remediation and vocational training.**
- **Students in one system are denied access to technology and support services readily available in another. For example, one Kentucky TECH branch is not connected to the Internet because of insufficient phone lines. Next door, on the same campus, the regional university has a T-1 line with immediate and direct access but this service is inaccessible to Kentucky TECH.**

The providers say that the horror stories we hear from students and business are overstated and that a seamless system may jeopardize accreditation. If students, traditional or nontraditional, have difficulty accessing the system through multiple points, then the system has failed.

DUPLICATION AND A LACK OF COORDINATION AT THE UPPER DIVISION

While there is little coordination among community colleges and the Kentucky TECH system to coordinate adult education and workforce needs, there is an equally serious problem of program duplication and off-campus centers in the upper division graduate and baccalaureate programs in the state's postsecondary education system.

Despite the policies of the Council on Higher Education for extended campus coordinating regions, there has been a proliferation of off-campus sites and centers. At least 90 of Kentucky's 120 counties have an extended campus presence from at least one of the 8 regional universities. These extended campus coordinating regions have worked well in the past. However, they are becom-

ing increasingly inefficient as the institutions stumble over each other in attempts to reap rewards of a funding formula for serving new communities and generating new credit hours. The controversy over the proposed siting of an extended campus for engineering is only a symptom of problems likely to develop in every metropolitan area of the state.

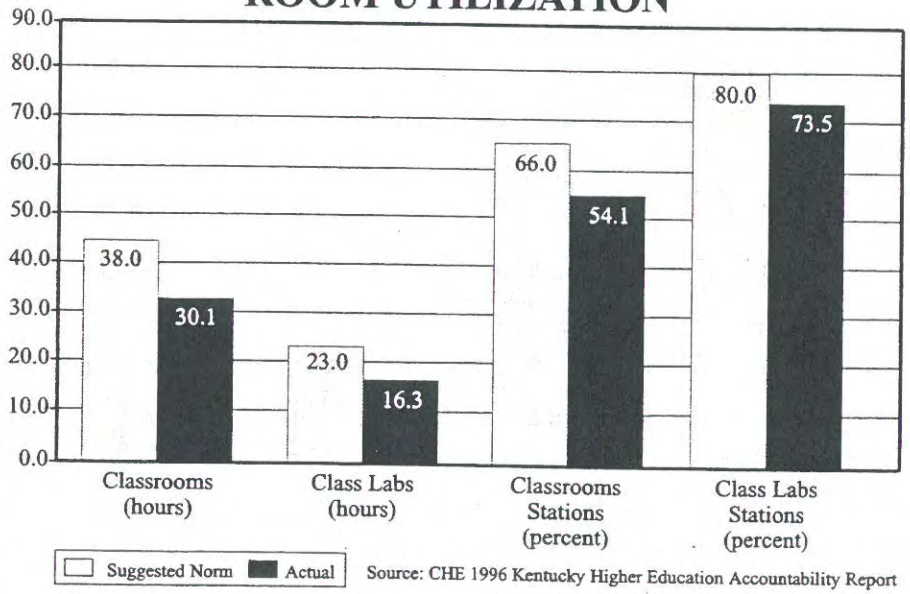
Place-bound students and their communities are increasing demands for access to upper division programs that are important to their future economic development. Communities that do not have four-year institutions will continue to demand that access. The challenge for Kentucky is to find ways to meet these needs through the use of technology and other means to prevent the proliferation of new facilities, new programs and, potentially, new campuses.

Ironically, the University of Kentucky, through its community college system, is often pitted against regional universities in efforts to offer lower division courses across the state. Though there are demonstrated needs for both lower and upper division courses, one would not expect the state's leading research university to be a major competitor for the delivery of lower division courses, but rather to deliver specialized upper division and graduate programs to support its statewide mission.

POOR UTILIZATION OF ON-CAMPUS FACILITIES AND OTHER INEFFICIENCIES

Use of physical resources is yet another example of the inefficiency with which the system is plagued. Kentucky's classrooms are largely underutilized. Campus space utilization rates are below the comparative norms used by the Council on Higher Education in its *Kentucky Higher Education Accountability Report* (1996). Physical resources are underutilized even as demands for additional and expanded campuses are voiced. System wide, institutions averaged 30.1 hours of weekly classroom use compared to a suggested norm of 38.0 hours weekly (Figure 15).

Figure 15
ROOM UTILIZATION



Source: CHE 1996 Kentucky Higher Education Accountability Report

The list of inefficiencies to coherent, coordinated services among the various postsecondary institutions is lengthy. Kentucky TECH functions on a clock-hour system that is difficult to coordinate with the credit hour system of the colleges and universities. Different calendars make class schedules and other details extremely problematic to coordinate. Kentucky TECH is treated for the purposes of personnel, purchasing and budget not unlike a unit of the Transportation Cabinet. The personnel system provides limited flexibility for responding to changing workforce and student needs. Separate and conflicting admissions, student records, attendance and student aid eligibility policies create substantial bureaucratic barriers for students.

REGIONAL ECONOMIES AND PICKET FENCES

Kentucky's postsecondary capacity to respond to regional and statewide economic needs is seriously hampered by bureaucratic barriers, duplication, conflict and poor coordination. The lack of a common economic development purpose among all institutions of postsecondary education hinders development of a well-educated workforce and research-driven economy.

The state's capacity to address this economic development priority is splintered among several uncoordinated, and competing duplicative entities. These separate institutions share many common goals but have developed independently. In many cases, they are divided by long-standing rivalries. In virtually every region, units of each systems are often located in close proximity, sometimes even on the same campus. A set of "picket-fence" relationships among each entity and its state-level sponsor (UK, Workforce Development Cabinet and the Council on Higher Education) simply reinforces the divisions at the local level. Kentucky TECH administrators are constrained by complicated state regulations governing every dimension of their work from personnel assignments to printing requests. Community college administrators face a constantly shifting set of policies and priorities — often perceived as responding to changing political realities more than to the needs of the state's regions.

KENTUCKY FALLING BEHIND . . .

32ND IN THE NATION IN 1993 IN PRODUCTION OF DOCTORAL SCIENTISTS.

39TH IN THE PRODUCTION OF DOCTORAL ENGINEERS.

RESEARCH COMPETITIVENESS — QUESTIONABLE AT BEST

Research and development is also vital to the growth of regional and state-

wide economies. A look at the state's doctoral programs, its research and development initiatives, and funding for research within the state identifies an issue of major concern regarding Kentucky's research competitiveness.

Kentucky does not have a nationally recognized doctoral degree-granting institution. Neither the University of Kentucky (UK) or the University of Louisville (UL) have programs which consistently rank at or near the top in national rankings. Of 40 doctoral programs for which the National Research Council publishes national rankings, UK had six in the top half and UL had one. UK offers 29 of the 40 programs reviewed. ***The highest ranking given to a UK program was 31 of 127 for the Arts and Sciences Pharmacology program.*** UL offers 11 of the 40 programs. The highest ranking given to a UL program was 76 of 194 for the Biochemistry/Molecular Biology program.

Kentucky does not have a world-class research institution with a primary focus on graduate education. There is evidence to support the contention that the existence of such institutions are "spurs" to economic development. World-class research institutions attract business and industry and become a breeding ground for entrepreneurial talent.

The University of Kentucky is the major flagship institution of the Commonwealth from three perspectives: 1) graduate education; 2) professional education; and 3) community college education. There has been some debate within the education community about whether UK's research focus is dispersed due to its maintenance of the community college system.

In contrast to virtually every other major research university in the country, ***Kentucky's major research university's mission is dispersed across far broader categories: remedial education, lower division courses, workforce training, and graduate education. No other major research university among Kentucky's competitor states has such a breadth of mission.***

Other research universities that at one time had two-year campuses have since focused their emphasis at the branch campus level. These universities have extended their upper division courses and graduate programs across the state and delegated other systems to clearly focus on lower division and workforce programs. The Kentucky pattern contrasts sharply with the trend across the country to focus leadership around distinct missions, i.e., major research universities in contrast to remedial and workforce development systems. In states where there has been an effort to link research universities with other institutions, their respective missions have been homogenized their resources scattered. The results then can be that these states have neither an outstanding research university nor an effective system for workforce development.

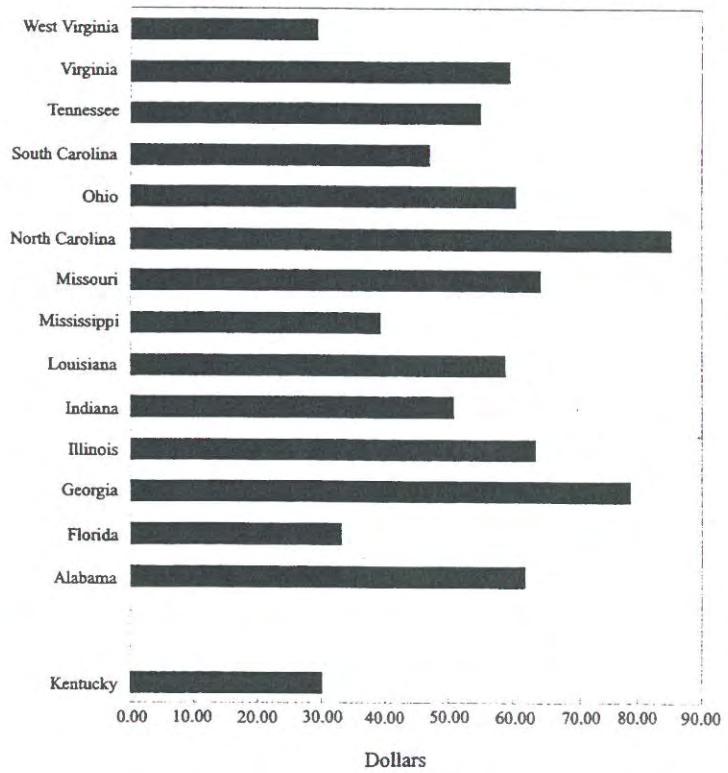
Kentucky's Postsecondary education is not nationally competitive in terms of research quality. In 1994, Kentucky ranked 35th in the nation in terms of academic research and development funds. ***Kentucky is last (15) among its competitor states in research and development funding per capita.*** Kentucky universities are not competing effectively with other states and universities for federal research funding (Figure 16).

Figure 16 illustrates that research and development expenditures per capita among those competitor states with one or more focused research universities such as North Carolina, Georgia and Indiana, are able to attract two to five times the federal funding of Kentucky. Research and development funding provides communities with a competitive position for additional spin-offs which strengthen the statewide economy.

In fact, Kentucky universities devoted more of their institutional budgets — funds derived from general state appropriations and tuition — for research and development than most of the competitor states, suggesting that the universities must divert funding that would be devoted to instruction in an effort to maintain their research missions. Not surprisingly, research rankings indicate that Kentucky's doctoral programs are not highly regarded.

Figure 16

Total Research & Development Expenditures Per Capita 1994



CONCLUSION

The Commonwealth has an undereducated citizenry and a postsecondary education system marked by fragmentation and conflict. Enrollments are static at a time when postsecondary education is critical to the development of a vital economy and an improved quality of life. The next chapter examines the barriers within Kentucky's postsecondary education system which currently prevent the Commonwealth from raising its level of excellence.

CHAPTER 3: BARRIERS TO EXCELLENCE

INTRODUCTION

Why has Kentucky failed to reach its postsecondary education goals and, subsequently, failed to raise the educational attainment and economic competitiveness of its citizens? Many barriers in the state's postsecondary education system itself contribute to Kentucky's failing grades. The most significant barrier is the lack of an effective statewide structure to coordinate all of the state's postsecondary education resources and provide a strategic vision. Additional barriers include limited access, financial limitations and organizational structure.

BARRIER I — A LACK OF LEADERSHIP

Kentucky lacks an effective structure for statewide policy leadership in postsecondary education to achieve common goals and coordinate the efforts of its diverse educational institutions. The General Assembly created the Council on Higher Education (CHE) in 1934. ***Over the years, the authority of the Council has been increased or decreased following political battles over who should control the future of postsecondary education in Kentucky.***

The Council has fallen far short of its potential. Kentucky, like many states, must confront the reality that systems designed to meet the needs of this century will not be adequate to meet the challenges of the next. Today, the Council is not perceived as having the credibility needed to lead and coordinate the postsecondary education system into the 21st century. Council membership and staff are not viewed as the Commonwealth's principal spokespersons nor as advocates for the public interest in postsecondary education.

Recent history provides examples, such as the controversy between Murray State University and the University of Kentucky over the delivery of engineering curriculum through the Paducah Community College. This decision, like many others,

should have been made in a logical way by the Council. Instead these decisions are made by governors, legislatures or institutions based on political considerations. Many people believe, as reflected in the results of recent focus groups organized by the Task Force on Postsecondary Education, that Kentucky needs a credible coordinating body. Even several past chairs of the Council frankly admit its shortcomings.

Examples of the Council's shortcomings include:

- **The Council is not sought as the principal source of advice on strategic budget issues and other matters affecting the future of the state's postsecondary education system;**
- **The Council funding formula was ignored as a tool for distributing scarce state resources from 1992-1994;**
- **The Council is perceived as unable to deflect regionalism and other dimensions of Kentucky's political culture;**
- **The Council is characterized more by "political accommodation" than by policy leadership on education issues; and,**
- **The Council is widely perceived as ineffective in handling controversial issues, such as curbing unnecessary program duplication and handling the political consequences.**

The Council also has no leadership role or coordinating authority for community colleges and technical education. The University of Kentucky insists that the Council consider the community colleges as a single system for the purposes of funding decisions and accountability. The Council's authority does not extend to the Kentucky TECH system. As a consequence, the Council is not able to take a broad perspective encompassing all postsecondary education resources in the state. These gaps include key functions such as program approval and postsecondary data collection.

As discussed above, the Council is not an effective leadership entity for postsecondary education in Kentucky. Through recent history, the University of Kentucky, with its prestige and statewide political networks, and the regional universities, with their ties to key legislators, have been able to ignore or negate the Council policies that ran counter to their interests. At the same time, the history of the institutional governing boards in Kentucky has been one of strong ties to regional political interests. These local boards have demonstrated uneven success in setting clear directions for and overseeing institutional performance. Even with the Higher Education Nominating Committee and the governor's commitment to make strong board appointments, Kentucky still does not have effective structures and policies to hold governing boards publicly accountable for responsiveness to state needs.

BARRIER II — NO LINKAGE TO A STATEWIDE STRATEGIC MISSION

The state's postsecondary institutions are not linked to the state's strategic goals. Today, institutions have no incentive to look beyond their individual campuses as they establish policy goals. For example, one institutional board member noted that he could never recall during board deliberations discussing the relevance of campus programs to the economic development needs of the state.

The Council on Higher Education has a strategic plan. However, this plan is not developed with input from the governor and legislative leaders. Instead, it is negotiated with the institutions; therefore, institutional priorities, and not state priorities, emerge. The Council's strategic plan also is for a short term of five years and does not reflect a public agenda for postsecondary education linked to a long-term vision for the state. A strategic vision for the institutions must be developed to ensure their policy directives and funding decisions link them as full partners in the achievement of state goals.

BARRIER III — A LACK OF STRATEGIC FINANCIAL PLANNING

The allocation of resources drives postsecondary education decisions. In 1982, a "formula" was developed to ensure fair and equitable allocation of funds among the higher education institutions. It was anticipated that a "formula" would decrease the political infighting and turf battles that had existed among these institutions. (The Kentucky TECH system is not funded according to the formula. Appropriations for this system are provided through the state general fund for the Workforce Development Cabinet.)

This funding formula model consisted of two components: (1) an analysis of the funding needs of higher education in Kentucky compared to funding levels in surrounding states; and (2) a distribution policy to determine the allocation of funds among the institutions. The first component of the formula identified the funding needs of higher education for the governor and General Assembly. The level of appropriations to higher education never achieved these funding needs as identified by the "formula." The formula distribution policy instead was used to allocate appropriated funds among the institutions.

The formula served higher education well during much of the 1980s. This was a period of enrollment growth and the formula was primarily enrollment driven. That is, as campus enrollments grew, the formula provided for an increased need for appropriations based upon increased student credit hour production. An underlying principle of the formula was the con-

cept of "common funding for common activities." Each instructional activity on the campuses generated similar funding, i.e., a student credit hour of introductory English was valued the same at one institution as at another institution. The formula provided for a three-year average of student credit hour production to determine campus funding needs. Hence, as campus enrollments grew, the formula provided a buffer for the state.

While the universities have accepted the formula as a means for allocating state resources, problems with the formula and the broader higher education funding environment have emerged, for example:

- **Institutions have discovered that they may seek additional appropriations, or "add-ons," outside the formula. Institutions may identify programs and activities and seek political support to fund these activities even when they are not funded as part of the formula. Once a campus has a program or activity funded as an "add-on" outside the formula, this additional funding becomes part of the institution's recurring base. As a result, institutions have had strong incentives to seek appropriations that are not part of the formula calculation.**

- **The formula rewards growth. However, an enrollment-driven formula in a period of changing demographics rewards the wrong types of behavior. The formula provides funding incentives to enroll students who, in many cases, should not be enrolled in the four-year institutions, i.e., many of the institutions receive additional funding for the provision of remedial education in English and mathematics. Therefore, the formula suggests to the college campuses that quality is much less important than quantity of courses.**

- **The formula encourages competition among the institutions for the same pool of students. Again, the changing demographics of the 1990s has meant that institutions were often competing with each other for the same students. Students who might be better served by enrolling in the community college system (or the Kentucky TECH system) are often encouraged to attend the four-year institutions.**

- **The formula offers no direct incentives for collaboration and coordination. In fact, collaborative and cooperative efforts can be stifled because of concerns by the campuses as to which will receive rewards for the production of student credit hours.**

- **The formula has lost credibility with both the executive branch and the General Assembly. In recent years,**

budget requests recommended by the Council on Higher Education were often viewed as being unrealistic and, in some budget years, the formula would call for nearly all the increase in state revenues to be appropriated to higher education. As a result of this loss of confidence, the formula was totally disregarded by policy makers in both the executive and legislative branches in both the 1992 and 1994 biennial budgets.

- **The formula does not provide sufficient incentives for enhanced national competitiveness of research and graduate programs, nor differentiated missions at the regional institutions or shared program delivery among institutions.**

While some might suggest that the formula has served Kentucky well, the formula must be modified to create incentives for change. The current formula is a barrier to the postsecondary education system's ability to accomplish its goals. A revised funding approach must be undertaken that provides strong financial incentives for institutions to eliminate unnecessary programs, to take other actions to improve productivity, and to generate resources for new initiatives. A new formula directly linked to a statewide public agenda is necessary.

BARRIER IV — A LACK OF STRATEGIC PLANNING FOR TECHNOLOGY

Technological access is key to reaching remote areas of the Commonwealth and place-bound individuals or employed workers wishing to participate in postsecondary programs. The increasing numbers of nontraditional learners offer new access challenges. These students, often returning adults, have jobs and careers as well as family who depend on them. They must juggle schedules and finances to go to college. Few programs exist within the state that are planned specifically for "just in time" learning or for the student who can pursue a degree only within alternative time and place options.

Kentucky has an enviable emerging capability through the statewide communications "backbone" and the availability of interactive classrooms. However, these systems are already approaching maximum utilization and ***no statewide commitment exists to strategically plan for the deployment of technology.*** Decisions about technology are left to the individual campus leadership or the Workforce Development Cabinet.

Degrees of technological advancement vary from campus to campus, especially at the collegiate level. Postsecondary technical and community college campuses also fail to maximize scarce resources in this

area. Each institution approaches decisions regarding technology independently without any commitment to statewide standards or architecture. Examples of cooperation in academic program development and implementation exist, but they are too few and rely too much on local initiative.

In its final report delivered in October, 1996, the Commission on Higher Education Institutional Efficiency and Cooperation recommended that Kentucky's postsecondary institutions explore the use and potential effectiveness of new technologies. The Commission found that technology was a greatly underutilized resource in the state and should be used to:

- **improve distance learning delivery;**
- **strengthen interinstitutional communication;**
- **improve management practices; and**
- **enhance academic programs and provide access to higher education across the state.**

Among the Commission's top recommendations was the creation of a "virtual" university in the Commonwealth. This Commonwealth Open University would represent a collaborative effort among the postsecondary institutions to use various interactive learning technologies to provide maximum access to citizens and improve instructional efficiency.

A postsecondary education system that is not technologically proficient is a system with limited ability in many ways. This situation will become exacerbated in the future as the world and more of its functions become technologically based. The lack of a comprehensive, strategic approach to the use and sharing of technology across the postsecondary system creates barriers of access for students, prevents greater cooperative programming among institutions and results in a lack of exposure for students to the latest in technological advancements.

BARRIER V— FINANCIAL BARRIERS FOR STUDENTS

As residents of a relatively poor state, Kentucky students often do not have access to the funds necessary to attend postsec-ondary education. At several state institutions, more than 50% of the students are eligible for needs-based financial aid programs. Adult students also face the additional ancillary costs of child care, transportation, and simultaneous employment. The following list identifies a few of the current barriers in Kentucky's student financial aid system today:

- **Future needs for student aid are not linked to current planning by the Council on Higher Education;**

- **Nontraditional, middle-income and place-bound students still have difficulty accessing the necessary aid to attend postsecondary institutions;**

- **Student financial aid policies provide assistance for access, but few incentives for students to advance through the system, achieving degrees efficiently and expeditiously; and,**

- **The agency responsible for student aid is limited in its ability to compete nationally for loans because as a state agency it is hampered by governmental requirements.**

The Kentucky Higher Education Assistance Authority (KHEAA) made grant awards to about 25,000 students in the 1995-96 school year; however, there were over 14,000 eligible students who did not receive a grant award due to insufficient funding for student financial aid. Although Kentucky appropriated approximately $27 million for grant awards in the 1995-96 school year, approximately 16 million in need went unmet for eligible students under the current student financial aid grant program.

PREPARATION FOR THE 21ST CENTURY — NEW REALITIES

The foregoing discussion on the barriers to achieving excellence in Kentucky's postsecondary education system is based largely on demands as they currently exist today. But the situation may become even more serious given the national and international trends. Demands from students, business and government are having increased effect on postsecondary institutions around the world. Dynamic changes are occurring in other states and major industrialized nations that are not reflected in Kentucky's current system. These factors indicate that Kentucky's postsecondary education system is not only ineffective in dealing with the demands of today, but is also ill-prepared for the realities of the next century.

DEMANDS FROM STUDENTS, EMPLOYERS AND GOVERNMENT

The world's major industrialized countries are facing unprecedented demand for postsecondary education. This growing demand, driven by societal and economic changes, are making traditional approaches to projecting demand for postsecondary education obsolete.

As demand increases, the very nature of the demand is also changing in fundamental ways. Students are demanding:

- **Increased curricular relevance to employment in the changing economy;**

- **Greater responsiveness to circumstances of geography, time, and requirements of work and family;**

- **Increased articulation, transferability and recognition of learning gained through employment or other nontraditional means;**

- **Contained student costs and increased availability of student financial assistance; and,**

- **Credentials that will enhance mobility, status and economic security in a global economy.**

These national trends were reflected in student testimony to the Task Force. In addition to new student demands, postsecondary education is being pressured by employer demands for:

- **Increased ability to think critically;**

- **Higher levels of knowledge and skill;**

- **Increased ability to function in a global economy;**

- **Increased emphasis on workplace skills; and,**

- **Increased responsiveness to changing practices in production and management.**

In his presentation to the Task Force, Lee Todd, Jr., president of Data Beam Corporation, said students are not being trained for modern jobs. He said the increase in the knowledge-based industries will continue to drive the increasing educational demands of students.

Students and employers are being joined by governmental officials in raising new expectations for postsecondary education. Government is demanding:

- **Increased responsiveness to public priorities; and,**

- **Increased productivity and cost-containment.**

THE IMPACT OF TECHNOLOGY

Technology is fundamentally changing postsecondary education. The reliance of the global market on technology is forcing an escalation of technological instruction. For example, Purdue University now offers an accredited masters degree in business administration on the Internet. Geographic boundaries or "service areas" are becoming meaningless in establishing policies to target resources and for accountability. Technology is fostering a shift from an emphasis on teaching to an emphasis on learning and from a "provider-driven" to a "client/learner-driven" system.

Changing demands and the impact of technology are forcing nations to fundamentally rethink the postsecondary education delivery system. Policies designed for the past simply cannot change fast enough to keep pace with escalating demands. Flex-

ibility and responsiveness are the keys to a postsecondary education system which effectively serves students, employers and the public.

A CUSTOMER-DRIVEN FUNDING PROCESS

Many presentations to the Postsecondary Education Task Force identified increased funding as a major need for the system. The current formula for funding the four-year institutions and the community colleges is primarily enrollment driven. The postsecondary education technical schools are funded as part of state government. Because the budget is a major policy tool for allocating limited state resources, it is imperative that resources allocated to postsecondary education are expended efficiently and linked to statewide strategic priorities.

The "needs" component of the Council on Higher Education funding formula model has generated budget requests that have historically been viewed as not affordable. As a result, the formula was not used by the governor and General Assembly from 1992-94. ***The failure of the formula to clearly identify "need", coupled with state budget cuts in the early 1990s, resulted in a postsecondary education system that is most often described as "underfunded."***

Because the model typically generated what policy makers considered as unrealistic funding requests, the Council on Higher Education "recalibrated" the "need" component of the formula to decrease the system-wide funding requirements. As a result, the Council's 1996-98 biennial budget funding recommendation requested an annual system-wide increase of approximately 7%.

A preliminary estimate of potential "need" for 1998-2000 is a system-wide increase of approximately $100 million in state appropriations. This amount would bring postsecondary education funding up to the average funding level in benchmark/surrounding states. Since Kentucky is a low income state with a low level of educational attainment, the case can be made that a greater than average investment in postsecondary education is needed for the Commonwealth to "catch up" with competitor states as quickly as possible.

An alternative methodology may be developed to estimate the funding needs of higher education. Government appropriations per Full-Time Equivalent (FTE) may be calculated for each institution in Kentucky and compared to appropriations per FTE in benchmark/surrounding states. For example, data from the Southern Region Education Board (SREB) was used to compare institutions. SREB was created in 1948 as the nation's first interstate compact for education. SREB's 15 member states include: Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South

Carolina, Tennessee, Virginia and West Virginia.

A comparison of appropriations for the 1995-96 fiscal year per FTE in Kentucky with the median of appropriations per FTE for the 14 SREB states would suggest that Kentucky's higher education system is underfunded by approximately $77 million. (This assumes that appropriations will not be "taken" away from those institutions for which appropriations per FTE are currently above the median.) Again, this would provide Kentucky with funding equal to an average funding level of other states.

Kentucky's postsecondary education system, however, must be better than average. An additional $318 million in higher education funding would be needed to raise funding in Kentucky to the highest appropriation per FTE from among the 14 SREB states. Although each state is different - with different goals, priorities and problems – a reasonable estimate of increased funding needs per year in Kentucky would range from nearly a $100 million to up to $300 million.

Kentucky has made significant investments in its postsecondary education system. The Commonwealth, however, has not realized a return on that investment through the improved educational attainment of its citizens. Clearly, additional funding is not the only requirement for an improved postsecondary education system. *New funding, as well as existing resources, must be strategically invested for system improvements.*

CONCLUSION

A review of the barriers in Kentucky's postsecondary education system which prevent excellence and the new demands of the 21st century leads to the following conclusions:

- **The system lacks strategic vision and focus on future economic growth;**
- **The system lacks effective coordination of postsecondary education;**
- **The system lacks incentives for change, efficiency, and quality;**
- **The system lacks national recognition for research and graduate programs; and**
- **The system lacks coordinated focus on the use of technology required to deliver programs.**

The next chapter examines strategic goals for moving the Commonwealth beyond these barriers to excellence in postsecondary education and onto a clear path toward increased economic opportunity and productivity.

CHAPTER 4: REFORM GOALS FOR KENTUCKY'S POSTSECONDARY EDUCATION SYSTEM

INTRODUCTION

For the past two decades, elected officials and industry and education leaders have expressed concern regarding the structure, efficiency, and capability of Kentucky's postsecondary education system. The creation of the Task Force on Postsecondary Education has provided the vehicle to collect and interpret these concerns. This chapter focuses on five major goals which must be addressed if Kentucky is to raise the educational attainment of its citizens and thereby achieve a standard of living equivalent to the rest of the nation.

POSTSECONDARY EDUCATION GOALS

The five goals of postsecondary education reform are as follows:

GOAL 1
TO ENSURE THE POSTSECONDARY EDUCATION SYSTEM IN KENTUCKY IS EFFECTIVELY LINKED TO STATEWIDE PRIORITIES AND AN ECONOMIC GROWTH VISION FOR THE 21ST CENTURY.

The Council on Higher Education and other various institutions have failed to recognize the necessary linkages between postsecondary education and the long-term economic growth of the state. The business community has indicated a need for a postsecondary education system which is a full partner in the accomplishment of statewide economic goals and priorities. This goal formally recognizes this critical linkage and suggests system changes must be undertaken to ensure its accomplishment.

A major weakness in the current structure of postsecondary education is that the Council on Higher Education has no "political constituency." Some say it can never have a political constituency. It will never have an alumni network. It will never field a basketball team. It will never be an economic engine in a community. The fact is, the Council on Higher Education's political constituency should be the governor and the General Assembly. The Council should be the organization which ensures

that the higher education public policy of the people of Kentucky, as adopted by the General Assembly with the leadership of the governor, is implemented.

A review of the statutes creating the Council on Higher Education and granting it power reveals that the Council has broad legislative authority. But many contend that the Council has not executed the mission assigned to it by the General Assembly.

Kentucky's system of postsecondary education should provide citizens the educational opportunities they desire and should provide business with the workforce it needs to be productive and profitable in a competitive world economy. The system should also provide educational opportunities that are varied, economical, and accessible. It should accommodate traditional and nontraditional students. Furthermore, it should provide continuing education for workplace changes and remedial education for people who, for whatever reason, do not have the skills and education necessary to compete in the workforce. And finally, the system should train craftsmen, technicians, professionals, and provide general education linked to knowledge and skills required in the 21st century.

While citizens deserve to pursue the occupation of their choice, they need to know the relative economic opportunities which different occupations afford. Moreover, they need to understand changing demands for that occupation, not just today, but also in the future. In fact, the accelerating rate of change in the skills needed in the future economy makes the value of a general education more important and makes opportunities for continuing education for the nontraditional student imperative.

GOAL 2

TO ENSURE THE POSTSECONDARY EDUCATION SYSTEM IS EFFECTIVELY COORDINATED AND PROVIDES A SEAMLESS EDUCATIONAL PROCESS FOR THE CITIZENS OF THE COMMONWEALTH.

Coordination within a system of postsecondary education is more than approving programs and adjusting mission statements from time to time. An effective, coordinated, seamless system of postsecondary education must include all providers and involve a dynamic process for the encouragement of considered, cooperative and "market oriented" change. It should also include accountability reviews and continued reflection on the needs and priorities of current and future generations. At the same time, an effectively coordinated system must recognize and act to avoid unnecessary duplication and low productivity. It should also encourage efficiency while being alert to the need to educate the "whole" person for effective citizenship and a high quality of life. A review of current system coordination indicates a lack of ef-

fectiveness which must be addressed through postsecondary education reform.

GOAL 3

TO ENSURE A FINANCING STRUCTURE FOR THE POSTSECONDARY EDUCATION SYSTEM WHICH ENCOURAGES INNOVATION, EFFICIENCY AND SYSTEM EXCELLENCE.

Enhanced innovation, efficiency and excellence can be effectively achieved by reform of the postsecondary financing system. Bureaucratic processes designed to improve efficiency, no matter how sophisticated, are doomed to failure unless *basic* managerial and operational behavior patterns are changed. Postsecondary education needs a system of "financial motivations" to encourage the Council and the institutions to change current practices for greater efficiency and to ensure desired outcomes. The needed financial incentives should place less emphasis on student numbers, which drive duplication and competition, and place greater emphasis on innovation, quality and efficiency.

Increased funding alone will not ensure an exemplary postsecondary education system. ***New funds must be directed toward achieving strategic goals.*** For example, a new formula should include such statewide priorities as:

- **Building focused, internationally-competitive, and highly ranked research into the system;**
- **Developing regional priorities and nationally competitive applied research programs;**
- **Supporting investments in technology and other capital-related items in order to improve student learning and extend access to postsecondary education throughout the Commonwealth; and**
- **Supporting regional collaboration and integration of all postsecondary education programs, with a special emphasis on the community colleges and technical schools.**

Goal 4

TO ENSURE THE EMERGENCE OF NATIONALLY RECOGNIZED RESEARCH AND GRADUATE PROGRAMS WHICH WILL SERVE AS INCUBATORS OF ECONOMIC GROWTH.

In an increasingly complex and technology-based world, successful corporations and businesses require innovative ideas to compete. Across the nation, there are numerous examples of the strong relationship between research, ideas and industry success. Such examples include Route 128 in Boston; the Research Triangle in North Carolina; Austin, Texas; and the Silicon Valley in Northern California. For Ken-

tucky to achieve a higher standard of living, it is critical that the Commonwealth be empowered to compete for new generation businesses, corporate headquarters and product-development facilities. Fortunately, in the emerging high-tech world, the location of new generation corporate enterprises is no longer "place bound" and limited to certain regions of the United States.

Kentucky can be competitive in the new economy, but only if it has the intellectual and research infrastructure to support such an economy. The location of the Toyota manufacturing plant provides evidence that Kentucky can compete with appropriate investment in ideas, people and research. The enhancement of Kentucky's research and graduate programs will make the state competitive in the new economy and help propel Kentucky corporations and businesses to a new echelon among competitors. A first-class research university will be a magnet for economic development and should be a goal of postsecondary reform efforts.

GOAL 5

TO ENSURE THE USE OF STATE-OF-THE-ART TECHNOLOGY TO GUARANTEE MAXIMUM SYSTEM ACCESS AND DELIVERY COORDINATION FOR A SEAMLESS SYSTEM OF DELIVERY.

Current and emerging technologies provide exciting opportunities to concurrently enhance system access and foster more efficient program delivery. Historically, access in postsecondary education has been defined as an educational institution in every region of the state. Access has been considered a function of travel time and physical proximity. That perspective of access is changing dramatically due to the emergence of new "technology-based" delivery systems, such as distance learning.

The concept of access is also undergoing dramatic change in terms of who is to be provided access. Research indicates that Kentucky must prepare for a system of continuous education and re-education of the workforce. Some futurists suggest that Kentucky citizens will change jobs (and perhaps, occupations) five or more times during their careers. Such change will require "access" in new venues to accommodate citizens who are site bound because of economic and personal considerations. Given new technologies, physical and geographical access will become less important as the state attempts to meet the diverse educational needs of its citizens.

Kentucky must move quickly to adopt available and developing technologies to enhance access to postsecondary education. Fortunately, such a system change yields other significant benefits, including greater coordination of program delivery. A new wave of postsecondary education involves the "virtual university" concept whereby traditional academic courses and technical training may be elec-

tronically delivered throughout the state, the nation and the world. A new approach such as this will require the coordination of system providers in terms of content, finance and outcomes. If Kentucky citizens are to be prepared for the work world of the future, new, technology-based access to professional development and retraining programs must be provided.

CONCLUSION

Significant barriers to economic progress, including a failure to link postsecondary education to a statewide strategic vision, low educational attainment and degree production, low research and graduate education capacity and inefficient program delivery — discussed in Chapter 2 and 3 — may be overcome if the Commonwealth commits to reform of its postsecondary education system. Though postsecondary education reform will not be a guarantee in lifting Kentucky, its economy and its citizens to national economic standards, the Commonwealth will surely never reach these goals without it.

CONCLUSION: ELEVATE, ENHANCE AND ENGAGE KENTUCKY IN POSTSECONDARY EDUCATION

THE NEED FOR CHANGE

Education has emerged as the principal path to a higher standard of living and an improved quality of life in the 21st century. A 1996 report from the Kentucky Long-Term Policy Research Center, *Exploring the Frontier of the Future,* notes that "... the ability of states and nations to cultivate an appetite and an appreciation for knowledge will be key to their prosperity."

For many Kentuckians, however, the path to higher education and improved prosperity is inaccessible because of educational, organizational, financial or geographical barriers. Although Kentucky has made considerable progress in recent years to address these issues, disturbing trends continue:

- **Nearly 44% of the population lacks the knowledge and skills to fully participate in the Commonwealth's economy;**
- **Kentucky's proportion of the popultion with less than a high school degree is greater than all competitor states except Mississippi; and,**
- **Kentucky still ranks 48th in the nation in the percent of its population with a bachelor's degree and only 27% of its community college graduates proceed to four-year degree programs.**

Why has the postsecondary education system failed to produce better outcomes for Kentucky and its citizens? As this report indicates, it is not through a lack of investment, but rather a lack of ***strategic investment.*** Kentucky certainly has a large quantity of postsecondary resources, but these resources are not well matched with the needs of the Commonwealth's citizens or its economy. Kentucky also has invested considerable funds in its postsecondary education system, but the potential need is estimated to be from nearly $100 million to up to $300 million.

Can Kentucky meet this need in an era of shrinking available resources? Today, resources available for the postsecondary education system are spread among an array of institutions with singular missions. No coordinated vision exists to drive postsecondary education as a critical economic engine. Future investments must be strategically made so that Kentucky can reap the benefits of a well-educated and well-prepared citizenry.

Inefficiencies in the current system have a direct relationship to the lack of leadership in the postsecondary education system. Today, no authority exists to coordinate all of the postsecondary education resources in the Commonwealth. Kentucky's postsecondary education system is not positioned to respond to the needs of the economy and its regions. The system is inefficient and unresponsive. In many cases, the system is not accessible and there remain many serious questions about quality.

Kentucky must make a quantum leap in the postsecondary knowledge and skills of its population and the competitiveness of its graduate education and research programs. If it does not, the Commonwealth will make little progress in improving the quality of life and standard of living for its citizens and will instead fall further behind its competitor states and the entire nation.

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The following is a partial list of references used in the preparation of this report. Not included in this list are the many reports and comments received from the Task Force advisory groups and other sources.

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Errata

Page 10, 2nd column, 1st paragraph under Investing in Human Capital, line 8, insert comma after accomplishment, ...

Page 14, 2nd column, 2nd line of Conclusion; a dash should be inserted in low income (low-income)

Page 16, 2nd column, under State-supported Universities; line 4 should read masters'-degree granting institutions.

Page 18, 1st column, last sentence should read U.S. Census Bureau figures, Kentucky ...

Page 23, 2nd column, line 6 should read students encounter ...

Page 25, 2nd column, 3rd line from the bottom should read 34% to 75% of all degree ... not 43% to 75% ...

Page 32, 1st column, line 6 should read credit-hour system ...

Page 33, 1st column, 1st full paragraph, line 4 should read (UK) nor the University of Louisville (UL) ...

Page 33, 2nd column, second to the last sentence should read missions have been homogenized and ...

Page 34, 1st column, should be postsecondary not Postsecondary.

Page 40, 2nd column, 2nd paragraph, delete dash in postsecondary.

Page 41, 1st column, 1st full paragraph, line 10, insert $ before 16 million.

Page 44, 2nd paragraph, last full line, delete "a" before $100 million.

Page 49, 2nd column, line 5, last word should be Chapters

The letter incorrectly reproduced the spelling of Representative Charles Walton's name. We apologize.