CHARTING THE FUTURE *2007 - 2012*

A **Master Plan** for West Virginia **Higher Education**

West Virginia **Higher Education Policy Commission** 2007 - 2012

TABLE OF CONTENTS

I.	Introduction	1
II.	Planning Areas	6
	1. Economic Growth	7
	2. Access	12
	3. Cost and Affordability	16
	4. Learning and Accountability	20
	5. Innovation	26
III.	Conclusion	29
IV.	References	31

CHARTING THE FUTURE *2007 - 2012*

A Master Plan for West Virginia Higher Education

West Virginia Higher Education Policy Commission
1018 Kanawha Blvd. East
Charleston, West Virginia 25301-2025

I. INTRODUCTION

The Higher Education Policy Commission and the state's colleges and universities embrace a long-term vision that is economically sound, culturally vibrant, and environmentally healthy—with opportunity for all citizens.

Vision

The West Virginia Higher Education Policy Commission (HEPC) has statutory responsibility for developing a six-year strategic plan for higher education in cooperation with the state's colleges and universities, policy makers, and other key constituencies. This master plan aims to coordinate the efforts of the various institutions of higher education in the state, while recognizing that each institution plays a unique role within the larger system. *Charting the Future* provides an overarching vision for the state's system of higher education; this vision is implemented through the compact reporting process which asks each college and university to set goals specific to its mission and to account for achieving those goals.

West Virginia's master plan for higher education from 2007 to 2012 sets a public agenda for how best to serve the needs of our citizens. It envisions a vital role for higher education in improving the economic opportunities and overall quality of life for our state. Higher education has long been the pathway to upward mobility in America, and the West Virginia Higher Education Policy Commission takes responsibility for opening that pathway to all West Virginians. Accordingly, this plan addresses key issues in providing a quality post-secondary education for our population—issues such as access, student preparation, program offerings, cost, and learning accountability. In addressing these issues, West Virginia's institutions of higher education strive to adapt to a new environment of stagnant funding while embracing public accountability and access for low-income students.

The current economic climate requires that we make higher education a partner in prosperity for West Virginia. Post-secondary education is critical to both the economic futures of our individual citizens and the health of the state's economy as a whole. We focus throughout this plan on ways to partner with public and private entities to develop job opportunities, stimulate innovation, and foster economic growth so that we can employ our graduates within the state.

Economic growth is important, and higher education already contributes to the state in myriad ways beyond the economic, creating a network of public service and civic engagement initiatives to improve the quality of life for all West Virginians. Students, faculty, staff, and graduates work with local communities in areas of health, business, education, and the arts. This plan aims to enhance the shared sense of higher education's value to the state and to the people of West Virginia. Fundamentally, we see higher education as a public good and seek to enhance its contributions by setting challenging and measurable goals for access and learning combined with a pragmatic approach to funding and economic engagement.

Charting the Future presents an opportunity to link the transforming capacity of our colleges and universities to West Virginia's aspirations for quality of life and economic growth. The Higher Education Policy Commission and the state's colleges and universities embrace a long-term vision that is economically sound, culturally vibrant, and environmentally healthy—with opportunity for all citizens.

The National Challenge

In developing innovative strategies for reaching economic, civic, and cultural goals, this plan responds to an urgent call from national bodies to restructure and reorganize state systems of higher education. Policy organizations, from the U.S. Department of Education to the National Conference on State Legislatures, have sounded an alarm regarding higher

education; they exhort states to do a better job educating citizens to compete in today's knowledge-intensive, global economy. One report, *A Test of Leadership: Charting the Future of U.S. Higher Education*, produced under the auspices of the Secretary of Education, warns that many countries have surpassed the United States in the number of citizens they are educating to advanced levels. *A Test of Leadership* calls on America's system of higher education to make up this difference by preparing all students for post-secondary education; providing better information on educational opportunities; containing costs; improving retention and graduation rates; and strengthening the reading, writing, and thinking skills expected of graduates. The Secretary's report also emphasizes the importance of graduating more students with degrees in science, technology, engineering, and math (STEM fields) and focusing on international programs and foreign languages.

The Regional Picture

On a regional level, the Southern Regional Education Board (SREB), has made a series of recommendations that echo those of the Department of Education. In *Holding Colleges and Universities Accountable for Meeting State Needs*, SREB recommends that states set public agendas that adopt goals such as producing more highly qualified teachers, healthcare workers, scientists, and engineers; ensuring that education remains affordable; engaging in research that supports each state's economy; and improving graduation rates. West Virginia's plan heeds national and regional calls for reform in higher education while attending to the state's local needs.

West Virginia's Legislative Mandate

Mandated by the state legislature, this six-year plan for higher education incorporates the best practices recommended by national and regional policy organizations while addressing local needs. It intends to make our system of education and economy competitive on regional, national, and international levels and builds on national and regional recommendations to set overarching goals such as:

- providing access to post-secondary education for all qualified students,
- enhancing quality of educational programs,
- preparing students for success at the college level,
- containing costs and maintaining affordability of higher education, and
- increasing participation opportunities for working adults.

Specific goals include:

- increasing graduation rates and lowering time to completion,
- producing more graduate-degree holders, and
- intensifying research initiatives.

In terms of curriculum goals, we plan to strengthen knowledge-intensive fields in

- science, health, and technology;
- international programs and foreign languages; and
- advanced modes of reading comprehension, written communication, critical thinking, and problem-solving.

Responding to local conditions, we recognize the benefit of educating students to work in areas of projected state economic growth such as tourism and hospitality, health care, and other services. All of these recommendations work toward larger economic, social, and cultural transformations effected by a vital system of higher education.

This plan responds to an urgent call from national bodies to restructure and reorganize state systems of higher education to compete in today's knowledge-intensive, global economy.

Strengths and Accomplishments

We begin with West Virginia's great resources, including a strong work ethic, vital sense of community, and magnificent natural environment. We also proudly recognize that higher education has made significant and measurable progress over the last ten years in improving rates of participation and success. For example,

- Between 1997 and 2004, college-going rates of high school graduates increased by over ten percent.
- The number of students receiving financial aid has also increased dramatically, from about 13,000 in 2001-02 to 26,000 in 2005-06.
- Research funding brought in from external sources has also increased—from about $98.5 million to $171.6 million between 2001 and 2005.

Though we have made great progress, we cannot be complacent if we want to extend access and opportunity for all West Virginians and meet the challenges of the global and local environments.

Challenges

West Virginia faces particular demographic challenges in educating its citizenry to compete in the global economy while also meeting local needs. West Virginia University's Bureau of Business and Economic Research predicts slow economic growth over the next five years, at rates well below the national average. Other demographic challenges include low rates of participation in higher education, low workforce participation rates, and low percentage of adults with higher education degrees. Although West Virginia has improved its college-going rates for high school graduates, the state still ranks last nationally in the percentage of adult population with a bachelor's degree. The state average of 16.9 percent of adults with a higher education degree is substantially below the SREB average of 23.8 percent and the national average of 27.2 percent. West Virginia also has the lowest civilian labor force participation rate in the nation. West Virginia must grapple with these population and education trends in charting the future for higher education.

Access

We intend to raise higher education participation rates by improving preparation and access for traditional students while also providing lifetime and workplace learning opportunities for working adults. Our citizens span a wide range of ages and possess various levels of educational and work experience. To reach a broad swath of our population, located across a largely rural state, we need to cultivate accessible lifetime- and workplace-learning degree and certification programs that are delivered, in part, through distance education. Development of appropriate programs and delivery systems is key.

West Virginia's higher education has made significant and measurable progress over the last ten years in improving rates of participation and success.

Cost and Funding

We are mindful that the cost of higher education is significant for West Virginia's students and their families, given the state's low rates of average household income. This plan addresses the need to maintain and expand state financial aid programs and to constrain tuition and fee costs. West Virginia's system of higher education does, of course, face significant financial constraints. We rank 49th in the nation in state appropriations for operating costs, and we've seen a decrease in state support of almost 12 percent from 1999-2006. We also rank 15th among the sixteen SREB states in state funding per full-time equivalent student (FTE). Despite funding cutbacks, West Virginia's colleges and universities have worked hard to keep higher education affordable. Although tuition and fees have increased in recent years, West Virginia still ranks 11th among the SREB sixteen in cost (i.e., higher education in ten states costs more). Nonetheless, the state's institutions of higher education remain committed to improving economic efficiency through focusing institutional missions and enhancing accountability.

Partnerships

In order to foster economic development, maximize use of resources, and make our graduates competitive in a knowledge-intensive global economy, this plan emphasizes the importance of partnerships, entrepreneurship, and research. West Virginia's colleges and universities have been developing partnerships with public agencies and private enterprises for job training, job creation, and public service. Such partnerships advance research and facilitate entrepreneurship in order to add value to learning opportunities, generate revenue, and grow the economy. With state funds for education declining, we must cultivate employment- and revenue-generating relationships to help meet delivery costs. Therefore, the repetition throughout the plan of these keywords—research, partnerships, and entrepreneurship—is strategic.

West Virginia's colleges and universities cultivate partnerships with public agencies and private enterprises for job training, job creation, and public service.

Planning Areas

We look to capitalize on existing strengths and better position West Virginia as a globally competitive, economically prosperous, and dynamic state. This document reflects our belief that higher education plays an instrumental part in the cultural and economic health of our communities. *Charting the Future*'s major planning areas of 1) economic growth, 2) access, 3) cost and affordability, 4) learning and accountability, and 5) innovation respond to a set of implied questions that reflect our goals for serving West Virginia through higher education. We articulate those questions here:

1. **Economic growth:** How can West Virginia's higher education system contribute to the state's economic vitality? Can we prepare more West Virginians for successful work and create more work opportunities for our citizens?
2. **Access:** How do we make post-secondary education accessible for all West Virginians and give students the skills and information they need to succeed in college and other post-secondary education programs? How can we provide a range of educational opportunities for citizens located across the state and at various stages of their adult and working lives?
3. **Cost and Affordability:** In an era of tight budgets and skyrocketing costs, how can we ensure that higher education is affordable for West Virginians?
4. **Learning and Accountability:** How do we ensure that West Virginians are getting a high quality education that will prepare them for successful working lives with the minimum cost? How can our higher education institutions maximize the benefit of limited resources?
5. **Innovation:** How can we devise innovative programs, partnerships, research initiatives, curricula, and pedagogy to best achieve goals related to access, quality, target fields, cost efficiency, and economic development? How do we encourage higher levels of knowledge creation and put entrepreneurship, research, and partnerships at the service of our overarching goals?

II. PLANNING AREAS

1. ECONOMIC GROWTH

How can West Virginia's higher education system contribute to the state's economic vitality? Can we prepare more West Virginians for successful work and create more work opportunities for our citizens?

The Global-Local Economic Connection

In today's world, local economic conditions are inseparable from the global picture. National bodies such as the National Conference of State Legislatures, the U.S. Department of Education, and the National Academies call on states to prepare citizens to compete in the current knowledge-intensive, global economy. In addition, the state's higher education system must be actively involved in creating high skill/wage jobs and, further, in creating a positive economic climate. Accordingly, *Charting the Future's* section on economic growth emphasizes 1) preparing students for a knowledge-intensive, global economy; 2) developing partnerships with public and private employers for training and employment; and 3) encouraging entrepreneurship that will lead to job creation. In sum, we are aiming for an economy that is private sector-driven, globally competitive, and founded on high skill/wage jobs.

In light of the increased economic importance of global awareness, we reiterate here the importance of strengthening and expanding opportunities in international studies and foreign languages through study abroad and the curricular expansion made possible by the West Virginia Consortium for Faculty and Course Development in International Studies (FACDIS) and other statewide initiatives.

Serving Citizens, Strengthening the State

Higher education contributes to the state's economic vitality on several levels:

Individual—By educating citizens, we raise the income levels of West Virginians. According to the 2000 Census, the annual median income for college graduates ages 21-64 is 36% higher than that of high school graduates. Higher income levels, in turn, lead to a stronger state economy.

Job Creation—West Virginia's colleges and universities partner with public and private employers to develop internships, on-the-job training, and continuing education programs that contribute to job growth and economic expansion. New technology-based businesses are born from intellectual property creation and research. In turn, these businesses hire skilled college graduates.

Climate—Colleges and universities serve as magnets for growth and enterprise. We attract students from other states, who add to the economic base of our communities. Businesses are attracted to regions with an educated population and with the cultural, educational, and entrepreneurial opportunities afforded by institutions of higher education. In this sense, educational institutions serve as an economic resource for the state.

The state's higher education system must be actively involved in creating high skill/wage jobs and a positive economic climate.

National Recommendations for Higher Education

As West Virginia continues to strive toward greater participation in the national and global economies, the state's system of higher education is mindful of national recommendations for higher education from the National Conference of State Legislatures, the U.S. Department of Education, the Campaign for America's Future, and the National Academies (a consortium of national organizations of science, engineering, and medicine). Specifically, these recommendations include:

- graduating more students in STEM (science, technology, engineering, and math) fields;
- developing and supporting curricula that focus on international education, foreign languages, and study abroad;

Research activity not only bolsters positive graduate education outcomes, but positively impacts economic development within the state.

- improving skills in reading comprehension, written communication, critical thinking, and problem-solving;
- producing more students with graduate degrees; and
- addressing the needs of adult learners.

Research

Research activity not only bolsters positive graduate education outcomes, but positively impacts economic development within the state. Many of West Virginia's higher education institutions have increased research opportunities for undergraduate and graduate students in recent years, with academic research now constituting nearly a $200 million enterprise in the state. The state legislature has begun to examine policies to encourage and support research by creating programs such as the Council on Undergraduate Research in Engineering (CURE) and the Commission on Graduate STEM. Research Challenge, created by the legislature in 2004, funds original research projects and programs. Expenditures for funding faculty and student research lead to intellectual property creation and new business formation. Such businesses, in turn, often hire highly-skilled employees trained in our academic institutions.

Charting the Future recognizes such successful efforts to foster research while calling for increased research collaboration among students, faculty, institutions, public agencies, and private enterprises in order to meet the challenges of globalization as articulated, for example, by the National Academies' report *Rising Above the Gathering Storm,* which addresses the growing effects of globalization and the direct competition for jobs once based primarily in the U.S. The report's findings have led to academically challenging recommendations to bolster science and research. The Higher Education Policy Commission provides a state-level response to these challenges and further strengthens the state's research infrastructure as proposed by *Vision 2015*, the ten-year strategic plan for research.

Regional Economic Picture

The regional economic outlook shapes the ways that West Virginia's system of higher education can contribute to the state's economic growth. Although research predicts slow economic growth for West Virginia over the next five years, at rates below the national average, we will experience the fastest job growth in the service-providing sectors of health care, professional and business services, leisure and hospitality, transportation and utilities, government, and other services. There will be some growth in the goods-producing sector. Industries projected to have significant net employment growth include mining other than coal, construction, wood products, plastics and rubber, wholesale and retail trade, transportation and warehousing, and financial activities. We expect jobs in natural resources and coal mining to stabilize or decline; recent growth in these areas will slow. We expect continued but slow employment growth.

Collaboration with Economic Development Agencies

Higher education institutions must collaborate with state and regional economic development agencies to coordinate education with job development. Internships, externships, and work study opportunities will increase students' knowledge and skills through practical applications in a work environment. West Virginia's system of higher education plans to work closely with employers to ensure students' job-readiness by expanding programs that include practical experience in market analysis, business plan development, and operations. We intend to expand research infrastructure, particularly at West Virginia University and Marshall University, to link research and development to business growth and the economy.

Entrepreneurship

Entrepreneurship is a key to economic growth. A growing body of economic research argues that educational attainment constitutes a form of human capital innovation which, together with generation of new ideas, drives economic growth. Several of our institutions offer degrees and minors in entrepreneurship, and we will expand our programs and centers of entrepreneurship. We recognize that entrepreneurship develops out of all fields of research and business through problem-solving and critical thinking. It involves a set of principles that can be applied across a wide range of human endeavors. Interdisciplinary, graduate and undergraduate research, and innovative technology development programs all work toward facilitating entrepreneurship.

Program Development

We recognize that increasing STEM field graduates is important to the national economy and to making our graduates competitive in the international job economy. Graduating more students in STEM will require program expansion at our institutions. It is important to note that such programs are costly and that additional monetary resources are essential for this expansion. At the same time, the state economy indicates that we need to graduate citizens in a range of fields in order to support and enhance economic development in growth areas such as hospitality and other service-providing sectors. Therefore, we support a holistic approach to delivery of educational curricula and degree programs.

Population Demographics and Adult Education

West Virginia's population and age demographics, combined with the low percentage of adults with a college background, indicate that we need to focus on lifetime learning and workforce learning opportunities. Individuals who are a part of the West Virginia workforce will likely hold several and, we hope, increasingly better jobs throughout their lifetimes. They need continuing education to prepare for this progression, especially in light of rapidly changing national and global economies. Geographic and demographic conditions require that we make continuing education accessible for place-bound adults. This can be accomplished through enhanced distance education opportunities and use of new technologies for teaching and research. State commitment to increasing high-speed Internet access will be critical. We also have a large proportion of the adult population that is not currently employed. These citizens need access to training that will allow them to enter the workforce. Accordingly, we need to develop continuing education opportunities for adult citizens already in or entering the world of work.

Access and Participation Rates

The slow economic growth predicted for West Virginia means that it is unlikely the state will be able to provide enough high skill/wage jobs to retain all our graduates in-state. Nonetheless, given our low percentage of population with a higher education degree, it is the state's responsibility to increase the education level of West Virginia's citizens and to prepare our population for the highly competitive, global economy. Therefore, we need to increase the percentage of high school graduates who go on to get degrees in post-secondary education. Furthermore, though some of our graduates might leave the state for employment elsewhere, we need an educated citizenry to develop businesses and expand economic development within the state. Increasing the number of graduates might not automatically produce a corresponding increase in job creation, but having an educated citizenry is integral to economic development.

Educational attainment constitutes a form of human capital innovation which, together with generation of new ideas, drives economic growth.

Communication, Networking, and Job Creation

Though West Virginia's economic outlook presents a challenge, our institutions of higher education produce the sorts of skilled graduates that employers seek. We need to improve communication with businesses and other potential employers to get a better sense of their needs and to tell them about the talent West Virginia has to offer. We aim to expand our career placement system, to develop lifetime partnerships between graduates and academic departments, to work closely with West Virginia alumni associations located in other states with an eye toward in-migration, to set up a clearinghouse of information on our graduates, and to develop sites for alumni to advertise jobs. These efforts would work toward retaining graduates for in-state employment to strengthen the economic base supporting higher education and quality of life in the state. In fact, at least one recent study found that regions where more than 25 percent of adults had college degrees became magnets for population growth.

In sum, we want to develop an advocacy framework involving diverse sectors and stakeholders to connect current graduates to employment opportunities. Expanded research, more effective partnerships, and a strong commitment to entrepreneurship are crucial to higher education efforts to promote economic growth and job creation. Yet higher education is only part of the equation. State and local governments, businesses and the corporate sector, and citizen groups must come together with higher education to create the job growth that is essential to long-range economic opportunities for West Virginians.

We want to develop an advocacy framework involving diverse sectors and stakeholders to connect current graduates to employment opportunities.

Recommendations

Prepare students for a knowledge-intensive, global economy by developing and enhancing relevant programs, centers, and curricula

- Develop and enhance programs in international education, foreign languages, and study abroad in conjunction with K-12 education.
- Improve skills in reading comprehension, written communication, critical thinking, and problem-solving.
- Provide research opportunities in programmatic areas of emphasis.
- Expand programs and centers of entrepreneurship.
- Provide opportunities for internships, externships, and work study.

Graduate more students in high-demand fields and workforce shortage areas

- Graduate more students who are qualified to teach in STEM fields.
- Increase the number of students attaining graduate degrees in STEM and other high-demand fields to produce a work force qualified for today's knowledge-intensive economy.
- Expand programs to support the goal of increasing the number of STEM graduates in baccalaureate, graduate, and teacher preparation fields.
- Provide greater scholarship opportunities to attract students to STEM fields.
- Infuse additional financial resources through appropriations, grants, external funding, and research commitments to support growth in STEM enrollment and programs. Successful efforts will depend on increases in appropriations, grants, external funding, and research commitments.
- Address immigration issues for international students and faculty so that we can provide high-quality educational opportunities in STEM and other high-demand fields, given the global range of research, work, and knowledge-production.

Provide continuing education and lifetime learning opportunities for adult citizens in or entering the workforce

- Make education accessible for place-bound adults because West Virginia has a high percentage of adult students who are located in both urban and rural areas around the state.
- Provide working adults access to education throughout their lifetimes so they can develop skills and acquire degrees to qualify them for new job opportunities and keep abreast of developments in their fields.
- Develop continuing education opportunities that include fast-track programs for career changers with related degrees and/or experience.
- Focus our institutional missions to target the particular needs of our place-bound and working adults and our regional employers.

Develop partnerships with public and private employers for training and employment and to facilitate the transition from school to work.

- Create partnerships between educational institutions and employers.
- Communicate to businesses and other potential employers that we are already producing numerous qualified graduates ready to enter the workforce.
- Align program offerings with workforce needs.
- Partner with the business sector to develop an advocacy framework.
- Expand career placement systems and strengthen alumni networks to facilitate the transition from school to work.
- Develop lifetime partnerships between graduates and academic departments by, for example, developing relationships with out-of-state alumni association chapters to establish a clearinghouse of information on graduates and to develop sites for alumni to advertise jobs.

2. ACCESS

How can we make post-secondary education accessible for all West Virginians and give students the skills and information they need to succeed in college and other post-secondary education programs? How can we provide a range of educational opportunities for citizens located across the state and at various stages of their adult and working lives?

Equal Opportunity

West Virginia recognizes that increasing access to higher education for the state's citizens reflects a commitment to fulfilling democratic principles of equal opportunity. As the U.S. Department of Education's report on higher education states, "higher education has been a principal—some would say the principal—means of achieving social mobility. Much of our nation's inventiveness has been centered in colleges and universities, as has our commitment to a kind of democracy that only an educated and informed citizenry makes possible." By focusing on access, we intend to develop a state culture that values higher education as a means to individual and community development. West Virginia aims to make higher education accessible to citizens representing broad demographics of age, location, and educational background. We must work to ensure that students not only have the opportunity to attend institutions of higher education, but also are prepared to succeed. Studies have found that access to higher education depends on three central factors: adequate preparation, accessible information, and feasible cost. We address the three crucial factors of preparation, information, and cost to create a seamless pathway between high school and college that will increase access and graduation rates.

Preparation

In order to matriculate to higher education institutions and, once there, to complete degree programs, students need to be academically prepared. To ensure preparation, both students and secondary school educators need extensive information about academic expectations and opportunities. Institutions of higher education must provide such information and increase access by:

- enhancing awareness of opportunities provided by higher education,
- working with secondary schools to prepare students for college,
- meeting the needs of special populations, and
- providing financial support.

Increasing access to higher education for the state's citizens reflects a commitment to fulfilling democratic principles of equal opportunity.

College-going Rates

West Virginia must continue to increase the college-going rates of our high school graduates. An average of 54 percent of West Virginia's high school graduates enroll in college; this is in line with national and SREB percentages. West Virginia has increased the college-going rate between 2000 and 2005, but there are large disparities of college-going rates within the state. We need to improve access for students across the state and to increase participation rates overall. Accordingly, this plan specifies ways to facilitate the transition from secondary to post-secondary education for West Virginia's secondary school students.

Adult Learners

A large percentage of our higher education students (29.75 percent) are between 25-40 years of age, so efforts to increase access must also focus on West Virginia's adult population. Moreover, although West Virginia has improved its college-going rates, the state still ranks last nationally in the percent of population 25 or older with a bachelor's degree. The state's low

workforce participation rate, combined with working adults' need for lifelong learning to stay abreast of a changing economy, indicates the necessity of continuing education opportunities for citizens currently in the workforce and for adults not currently employed. To reach adult learners who are already working and who are located across the state, we need to provide a diverse range of certificate and degree opportunities that will allow them to retool for the current global economy and emerging employment options. To reach these students, who are bound by geographic and time constraints, we need to enhance distance learning opportunities.

To reach adult learners who are already working and who are located across the state, we need to provide a diverse range of certificate and degree opportunities that will allow them to retool for the current global economy and emerging employment options.

Cost and Financial Aid

For students of all ages, cost is a prohibitive factor. West Virginia has made great progress in making higher education affordable for a broad majority of the population through state financial aid programs and by keeping tuition and fees at a minimum. Nonetheless, we need to expand financial aid programs, disseminate information on available financial aid, and keep tuition costs manageable. Further, we must work to ensure that minority and low-income students have access to financial aid. The cost of higher education still comprises a large percent of the average family income in West Virginia, and student loan debt cuts into college completion rates. Addressing issues of cost and financial aid is integral to the plan's goals of increasing access, speeding time to degree completion, increasing graduation rates, and promoting graduate education. We will address issues of access related to cost and finances in section 3 of the master plan; we will focus primarily on readiness and varieties of educational delivery for our diverse student populations in this section.

Communicating Expectations

Adequate preparation in secondary school is a key not only to access but also to success at the post-secondary level. National studies have found, however, that a lack of curriculum alignment between high schools and colleges often creates an "expectations gap" between college requirements and high school preparation. Therefore, we must articulate expectations for college success by collaborating with K-12 educators. Specifically, we intend to strengthen contacts with teachers, administrators, and school counselors. Our goal is that everyone will come out of high school prepared for some type of post-secondary education, if not necessarily college.

Higher Education and K-12 Partnerships

We want to work toward aligning the high school curriculum with college requirements. To this end, we must expand programs that enable faculty from higher education institutions to work with K-12 educators. One such program, the National Writing Project, has been successful in encouraging secondary school teachers to focus on teaching writing. West Virginia has participated in this national program since 1987. It currently involves about 200 teachers of K-12 in a northern West Virginia network dedicated to improving the teaching of writing. Other initiatives involve sending math and English teachers from colleges and universities to the public schools to share syllabi. Some higher education institutions have also sent compilations of syllabi in bound books and CDs to area high schools in order to convey academic expectations of students entering college. A recent survey identified 42 projects involving higher education and K-12 collaborations. We want to capitalize on and expand such programs.

Academic Preparation

In order to smooth the transition from high school to college, we must encourage more West Virginia high school students to complete a rigorous high school curriculum (Professional Pathways), including completion of more college preparatory and college courses in the high school senior year. We advocate an increase in high school use of Advanced Placement, International Baccalaureate, and college courses. We recognize, however, that high quality

On-line courses contribute to developing a culture of lifelong learning by providing educational experiences that are engaging and challenging and that encourage self-motivation and self–direction.

must be maintained in all courses delivered in high schools for which college credit is given and that assessment will be crucial. West Virginia is making progress in student preparation for college as reflected in course-taking patterns and performance on standardized entrance exams (ACT and SAT I). Nevertheless, as the state's performance has improved, so has that of other states—with the result that West Virginia still lags behind.

Outreach

Outreach is important to educating high school students about college expectations and thereby encouraging more rigorous courses of study. We want to expand programs that send high school students to college campuses to see what the college environment is like. We can also make contact with students in schools, churches, and other community venues to introduce them to college curricula so they better understand what courses to take in high school. In general, students, families, teachers, and employers need easily accessible information on higher education opportunities and programs.

Distance Learning

Our working students are located throughout the state, so distance learning is key to making lifelong learning accessible. Accordingly, our institutions are developing distance-learning programs geared toward these widely-distributed adult and part-time students who can pursue, for example, a certificate in Professional Writing and Editing or in Childcare and Family Development. Non-traditional students can pursue these programs through on-line courses that allow schedule flexibility to accommodate job and family responsibilities. Programs such as these contribute to developing a culture of lifelong learning by providing educational experiences that are engaging and challenging and that encourage self-motivation and self–direction. This delivery method relies on high-speed Internet access, an essential need if the state's colleges and universities are to provide adequate numbers of on-line courses and programs. Accordingly, we rely on the state's commitment to expanding high-speed Internet access.

Enrollment Rates

We must increase adult participation in higher education in order to maintain and increase college enrollment rates generally. Population trends indicate that high school graduates in West Virginia will decrease by 2,836 from 2000 to 2014 (SREB). Moreover, West Virginia has the highest median age (35.3) of any state, and projections indicate that the state faces a continuing decline in school-age population combined with low population growth. Based on current participation rates, we will see a decline of approximately 1,500 freshmen entering college over the planning period of 2007-2012. This projection is bolstered by a review of census data projections which indicate that, during the master plan period, population growth will be minimal, increasing by only 0.1 percent per year, compared to a U.S. growth rate of 0.9 percent per year. West Virginia's population in the 0-17 and 18-44 age groups will actually decline during this period. Given these age demographics, it makes sense to focus on adult participation rates.

Transfer Students

Facilitating the transfer of credits for transfer students is key to controlling cost of higher education and decreasing time to degree completion. We will improve transfer opportunities for students who complete Associate in Applied Science (AAS) programs. We will also expand the College Core Transfer Agreement and encourage expansion of other agreements articulating transfer credit between two-year and four-year institutions.

Recommendations

Strengthen student preparation for postsecondary education

- Articulate expectations for college success by collaborating with K-12 educators to improve preparation of college-bound students.
- Align the high school curriculum with college requirements through collaboration with the K-12 sector.
- Encourage high school students to complete rigorous curricula including college preparatory and college courses in the senior year.
- Increase participation in Advanced Placement, International Baccalaureate, and college courses for high school students.
- Strengthen curricular alignment, particularly in the target areas of science and math, foreign languages, and written communication.

Facilitate the transition from secondary to post-secondary education for high school graduates

- Promote the importance of higher education for West Virginians so that our secondary-school students are prepared to continue their education.
- Enhance communication by making contact between representatives of higher education and students in schools, churches, and other community venues to introduce students to college curricula, post-secondary opportunities, and financial aid options.

Enhance outreach to all residents to participate in higher education

- Facilitate the transition into post-secondary education not only for secondary school students but for all West Virginians.
- Promote public awareness of the value of a college education, the preparation required for such an education, and the financial aid available.
- Provide easily accessible information on higher education opportunities to traditional and non-traditional students, families, teachers, and employers.

Provide continuing education and lifelong learning opportunities for working adults and those entering the workforce

- Provide opportunities for adults in the workforce to continue their education and acquire additional degrees, credentials, and training.
- Develop a culture of lifelong learning by providing educational experiences that are engaging and challenging and that encourage self-motivation and self-direction.
- Increase distance learning opportunities in order to reach our rural populations, serve working individuals, and provide access for non-traditional students.
- Improve the infrastructure for and access to high-speed Internet for West Virginians across the state in conjunction with state technology initiatives.
- Serve students more effectively through course redesign, alternative methods of program delivery, and better coordination of distance education.

Facilitate advising, course delivery, and transfer of college credit to improve access, reduce cost, and speed time to degree completion

- Improve access to higher education for students by reducing both cost and time to degree completion.
- Facilitate the transition between institutions for transfer students, especially those who have completed AAS degree programs.
- Increase the number of articulation agreements between community colleges and baccalaureate institutions to enhance credit transfer.
- Improve advising, counseling, and job placement services to speed progress to degree completion.

3. COST AND AFFORDABILITY

In an era of tight budgets and skyrocketing costs, how can we ensure that higher education is affordable for West Virginians?

Cost Climate

One of the most crucial policy principles backing this master plan is the need to make higher education affordable for West Virginians. Increasingly, Americans realize that post-secondary education is the key to a successful future, but they fear that cost may prevent access for many qualified students. State and federal policy bodies share this concern and have called on state systems of higher education to make tuition protection a priority. Yet West Virginia's state appropriations as a percentage of funding of higher education have dropped steadily since 2000. Consequently, higher education institutions have become increasingly dependent on tuition revenues, and tuitions have increased. Within this budget landscape, keeping the cost to students and families down will require institutional innovation to secure alternative funding sources and to control delivery costs. At the same time, the value of higher education to the state's economic health and to the well-being of our citizens merits the public expenditures needed to meet the goals of this plan.

Funding Trends

Like other states, West Virginia has experienced a decline in state budget allocations for higher education as a percentage of overall funding, though West Virginia's decline has been sharper than that of the other SREB states. In the 2000-01 academic year, state support for higher education covered 58.47 percent of educational and general (E&G) costs. By 2004-05, that percentage had dropped to 41.74, a loss of 16.73 percentage points. During that time, the percent of costs covered by tuition revenues increased proportionally. By 2004-05, tuition revenues covered 58.26 percent of costs (SREB *Factbook 2005*). Although tuitions increased during this period, some of the increased revenue came from higher total enrollments rather than from tuition hikes. Institutions have increased enrollments as one strategy to meet funding shortfalls, yet extensive enrollment increases bring additional costs of facilities, equipment, and personnel and are not a long-range solution. Even though enrollments have gone up, tuition costs have also increased substantially in the last five years as institutions have struggled to close the funding gap. West Virginia now receives the least state support for higher education of the sixteen SREB states (as a percentage of total E&G funding). Students and families necessarily pay more.

Keeping the cost to students and families down will require institutional innovation to secure alternative funding sources and to control delivery costs .

Financial Aid and Cost to Students and Families

On a positive note, the state's investment in financial aid programs has significantly defrayed costs of higher education for many West Virginians and, in fact, the state ranks sixth nationally with respect to grant aid per FTE (National Association of State Student Grant and Aid Programs). Furthermore, the total cost of attendance at a West Virginia institution is, on average, lower than that of ten other SREB states. Nevertheless, the cost of higher education to students and families is comparatively substantial. On average, the cost of a year's attendance at one of the state's four-year institutions comprises 10.9 percent of West Virginia's median household income.

Coordinating Finance Structure

Bodies such as the National Conference of State Legislators (NCSL) have called on states to rethink funding of higher education comprehensively. They stress that public policy should consider tuition, financial aid, and appropriations together as part of a coordinated planning process. The NCSL and the Commission on the Future of Higher Education have

also called on states to rethink entirely their student financial aid systems. Though West Virginia reaches a wide number of traditional students through existing aid programs, these programs do not increase access for adult or part-time students to the extent desired. Additionally, we need to seek an appropriate balance between merit- and need-based aid programs. This will help reduce student debt, as will loan incentives or loan forgiveness programs, incentives for students who complete their degrees in four to five years, and alignment of federal and state financial aid programs. We need to attend to the financial aid needs of transfer students. State and federal bodies exhort states to ensure that financial aid reaches the neediest families and students.

Public policy should consider tuition, financial aid, and appropriations together as part of a coordinated planning process.

Containing Costs

Containing tuition costs is integral to several master plan goals. It is important that higher education be affordable for West Virginians in order to increase the state's population percentage holding a higher education degree. In addition, tuition cost containment facilitates master plan goals of increasing retention rates and speeding time to degree completion because students can work fewer hours at outside jobs and focus on their studies. Overall, cost containment is crucial to increasing access, learning, and accountability.

Although all five areas of the master plan are interdependent, many of the recommendations for access relate to cost and affordability. Curriculum alignment between K-12 and higher education will ensure that students come to college prepared to succeed in their courses of study, speeding their time to completion. Outreach regarding financial aid and financing options will be critical in keeping costs to students and families down. Facilitating transfer credit will also allow students to get the maximum benefit from their tuition. Other plan recommendations that contribute to cost containment include expansion of on-line and other innovative course delivery methods. Students will spend less money on travel and housing and non-traditional students will lose fewer work hours if courses are available nearby. We can surmount geographic challenges to cost not only by providing on-line courses, but also by expanding the availability of existing degree programs to serve students in more regions of the state. Even as we expand existing programs with relatively little cost, concentrating on designated programs of excellence will also allow institutions and the state system to economize through refining and diversifying missions.

External Funding

Institutions will need to seek funding from non-state sources such as private industry, local business, and federal research and education programs. Partnerships, entrepreneurship, and research are keywords. In order to win more federal and private research grants, West Virginia's schools will need to focus on growth areas of the new economy, including STEM fields, interdisciplinary research, foreign languages and international studies, communication skills, and business entrepreneurship. We must emphasize graduate and professional education in order to expand research programs and increase research revenue. A primary goal of the *Vision 2015* strategic plan for research is to enhance the state's competitiveness and to increase access to research funding. We will strive to create collaborative partnerships with state and non-governmental agencies as well as with private enterprise to move learning opportunities out of the classroom and make use of resources beyond our campuses. Many of these strategies of partnership and entrepreneurship are developed further in the final section on innovation.

Faculty Salaries

In order to attract research funding, we must acknowledge the real cost of attracting and retaining top graduate students and faculty. Salaries for faculty at West Virginia's higher education institutions are the lowest among the SREB states (*SREB State Data Exchange 2006*). In the

long run, bringing salaries in line with those of institutions in SREB states and with approved institutional peers can improve economic efficiency by reducing faculty turnover; improving educational and administrative continuity; cutting the costs associated with recruiting and hiring new faculty; and—most crucially—by facilitating recruitment of field leaders which, in turn, increases research productivity, graduate student recruitment, and program development.

Institutional Efficiency

Institutions of higher education must also address costs from the side of institutional efficiency, productivity, transparency, and accountability. Institutional compact reporting will play a crucial role in assessing institutional performance and efficiency by requiring institutions to set goals for enrollments, retention rates, graduation rates, degree production, and assessment of student learning (among other goals). The state's major research institutions will also be required to report on their success in seeking research and external funding.

We will strive to create collaborative partnerships with state and non-governmental agencies as well as with private enterprise to move learning opportunities out of the classroom and make use of resources beyond our campuses.

Recommendations

Invest in higher education as a public good

- Work to increase public investment in higher education and financial aid for the greater economic and social good of West Virginia.

Coordinate finance policies

- Align policies governing financial aid, tuition, and state appropriations aimed at reducing financial barriers for students and increasing institutional capacity to meet the educational needs of the state.

Contain costs

- Contain costs to students and families and minimize loan debt by aligning K-12 and college curricula, improving delivery of financial aid information, facilitating transfer credit, developing multiple modes of access to courses and programs, and speeding time to degree completion.

Deliver financial aid and education cost information effectively

- Improve communication with prospective students and families about financial aid opportunities and net college costs.

Address financial aid needs of adult, part-time, and transfer students

- Expand grant programs for students with financial need and for underserved populations, including GED graduates, part-time students, adult students, and transfer students.

Reward students for high academic performance

- Re-examine current state aid programs to ensure students are rewarded appropriately for academic performance.
- Balance merit- and need-based financial aid programs.

Seek more external funding

- Seek funding from non-state sources such as private industry, local business, and federal research and education programs.
- Focus on growth areas of the new economy, including STEM fields, foreign languages and international studies, communication, and business entrepreneurship.
- Emphasize graduate and professional education.
- Bring faculty salaries and graduate student stipends in line with peer SREB institutions to develop and maintain the research programs that attract external funding.

Maximize institutional efficiency

- Increase institutional productivity and efficiency to contain tuition and costs.
- Partner with state and non-governmental agencies and with private enterprise to make use of resources beyond our campuses.
- Re-examine institutional missions to develop a state-wide system geared toward expanding opportunities for all West Virginians.

4. LEARNING AND ACCOUNTABILITY

How can we ensure that West Virginians are getting a high quality education that will prepare them for successful working lives with the minimum cost? How can our higher education institutions maximize the benefit of limited resources?

Public Perception

Public support is crucial to the success of our higher education system. We need West Virginians to see it as the pathway to individual social mobility as well as to the economic and social well-being of the state. The public also needs to have confidence that our colleges and universities continue to operate within a culture of accountability and take responsibility for institutional standards and students' academic success. To this end, we must ensure that West Virginia's system of higher education:

- maintains academic standards,
- meets national and international levels of performance,
- facilitates student retention and degree completion, and
- leads to employment.

Our higher education institutions currently strive to meet these goals, and we need to provide additional evidence of educational results and success to demonstrate the return on investment of state funds.

Competitiveness

Federal, national, and state education policy bodies find that the American system of post-secondary education is falling behind in international standards and competitiveness. To regain international preeminence, we must address demographic shifts in our population, changes brought about by globalization, needs of low-income students, and the quality of education through long-term planning at the state level.

To compete in a global economy, we need to raise learning standards in STEM fields, international programs and foreign languages, and writing and critical thinking.

STEM Fields, International Programs, Written Communication

To compete in a global economy and address concerns voiced by employers, we need to raise learning standards in three main areas: STEM fields, international programs and foreign languages, and writing and critical thinking. At the national level, proficiency in reading comprehension and writing has declined significantly in the last decade. Employers report that new graduates lack the critical thinking, writing, and problem-solving skills needed in the workplace. We need to encourage and reward curriculum development related to reading comprehension, written expression, critical thinking, and international programs and study abroad.

Critical Thinking and Problem Solving

There is, further, a relationship among these focus areas of STEM fields, international programs, and communication. A recent *Chronicle of Higher Education* article, co-authored by West Virginia University engineering professor Domenico Grasso, makes the case for integrated learning: "In this evolving world, a new kind of engineer is needed, one who can think broadly across disciplines and consider the human dimensions that are at the heart of every design challenge. . . . The crucial question facing academe is whether we are adequately preparing our future engineers and designers to practice in an era that requires integrated and holistic thinking, or are needlessly limiting their solution spaces to those that contain only technological answers, with scant or passing consideration of the myriad other influencing and dependent factors. . . . Pursuing the holistic concept of the 'unity of knowledge'

will yield a definition of engineering more fitting for the times ahead." The "unity of knowledge" concept "is fundamentally about integrating knowledge across disciplines to deal with complex problems and better serve humanity." The need for "holistic engineering" suggests that we must reaffirm our commitment to interdisciplinary research and curricula.

Research

Enhancing research opportunities is key to advancing the quality and quantity of work in the three areas of STEM fields, international programs, and critical thinking/literacy. Accordingly, West Virginia is advancing research through EPSCoR (Experimental Program to Stimulate Competitive Research) and Research Challenge, with the goal of stimulating economic development. We recognize the importance and encourage expansion of such broad-based state research efforts.

EPSCoR's strategic plan for science and technology, *Vision 2015*, lays out a framework for promoting economic development through research in science and technology. The plan calls for increasing STEM faculty and student degrees and developing new facilities to attract and retain cutting edge researchers and grants. It also urges a number of collaborative activities and programs to stimulate science and research.

The International Innovation Grants from EPSCoR, the recent "Internationalizing Higher Education" conference, and the current Internationalization Grants Program are three good steps in the plan to advance international research efforts in the state. We suggest an increase in state-level programs similar to Research Challenge to stimulate international activity in teaching, research, student and faculty exchange, and service, as well as continued support to grow the STEM research infrastructure.

We are also fortunate to have FACDIS, the statewide international education consortium which has effectively supported faculty and curriculum development in international studies for the last 25 years. Increasing state support for FACDIS and other international education initiatives is a positive way to promote international education and also strengthen the connection between K-12 and higher education.

We can expand research programs by supporting research grant-seeking activities and interdisciplinary research. Research can also be enhanced by partnering with business and public and private agencies. We plan to champion our current student research success and make visible its benefit to the state.

Assessment

Following national trends and the requirements of higher education accreditation bodies, West Virginia's institutions of higher education have been paying increased attention in the last five years to assessing student learning outcomes. We need to continue to develop meaningful assessment measures and to disseminate assessment information in order to develop a system of accountability for the quality and success of higher education.

We aim to create a campus culture of assessment that utilizes results for continuous improvement. We will implement national student learning assessments such as Collegiate Learning Assessment and assess general education through the ETS Measure of Academic Proficiency and Progress or through ACT CAAP. We will also explore the assessment of capstone courses. Even as we incorporate national assessment measures, we must empower faculty to define educational objectives and develop measures of progress. Assessment measures need to be more clearly defined and streamlined while still allowing for institutional flexibility and differentials. Learning gains should be emphasized.

It is important that we measure our success from the perspective of students and parents in addition to those of educators and the state. We can gauge student satisfaction through

West Virginia is advancing research through EPSCoR (Experimental Program to Stimulate Competitive Research) and the Research Challenge program, with the goal of stimulating economic development.

We intend to increase student retention and graduation rates by raising baccalaureate admission requirements, reducing barriers for transfer students, improving student advising systems, and developing academic support services.

measures such as the National Survey of Student Engagement. Students also measure the success of their education by whether they get a good job or get into graduate school after graduation. Therefore, we can increase positive assessment by enhancing professional partnerships with agencies and private enterprise, aligning curricula with accreditation requirements and disciplinary expectations, and improving placement programs.

Persistence and Completion

We intend to increase student retention and graduation rates by raising baccalaureate admission requirements, reducing barriers for transfer students, improving student advising systems, and developing academic support services. We need to address various needs of racial and ethnic minorities and to address the financial needs of all students. The six-year graduation rate for students entering in fall 2000 was 47.7 percent. Our goal for the six-year period of this plan is to increase freshman to sophomore retention rates and graduation rates at each institution to at least the average of its national peers. We need to enhance and develop academic support centers as well as to study retention issues systematically and implement the findings.

Graduate and Professional Education

The West Virginia legislature has established as a priority the expansion of our graduate and professional degree programs, especially at the master's level. We recognize the need for high quality graduate education programs to be available throughout the state. Since West Virginia ranks below its competitor states in graduate degree production, particularly in the areas that are important to the state's competitive position in the new economy of the twenty-first century, there is a considerable need for greater access to graduate education, especially at the master's degree level. Because there is a disparity in access to part-time graduate degree programs among the state's different regions, improving regional access is directly linked to the revitalization of the state's regional economies.

In order to meet the need for graduate education, the legislature has requested our major universities to coordinate programs with the baccalaureate colleges and community and technical colleges in each region. Furthermore, all institutions providing master's degree programs must provide meaningful and coherent programs that allow students, including place-bound adults, to complete a degree in a reasonable period of time. Institutions need to offer programs in the most cost-effective manner to expand access throughout the region and the state, in accordance with the particular graduate program needs of each region.

Teacher Education

With respect to graduate education, we want to emphasize the particular need for improved quality and accessibility of pre-service and in-service programs for teachers in subject matter fields. Accordingly, the legislature has called on our colleges and universities to focus on providing courses that enhance the professional skills of teachers in their subject areas. More specifically, there is an urgent need for master's degree programs for teachers in the disciplines or subject areas of mathematics, science, history, literature, foreign languages, and the arts. Currently, master's-level courses in education offered in some state regions focus primarily in areas such as guidance and counseling, administration, special education, and other areas of education unrelated to teaching subjects. Therefore, these regions need to expand master's degree programs in education that focus on subject area fields in which the demand is not being met.

Faculty

Educational quality is directly related to the strength of our faculty in higher education institutions. Faculty need support and incentives to reach our goals of intensifying research, developing curricula, and focusing assessment measures. We plan to develop incentives for faculty to incorporate new technologies and knowledge in the development of innovative curricula and pedagogies. In order to retain and reward the best faculty, we need to bring faculty salaries in line with comparable institutions in other states. On average, faculty salaries at West Virginia's four-year colleges and universities are the lowest of all states in the SREB region. (The SREB average in 2004-05 was $63,769; the average West Virginia salary was $54,702.) We need to make a commitment to investing in the human capital of our faculty. With the approaching retirement of baby boomers, we will face a particular challenge to replace faculty, and salary levels are crucial in recruiting top-level candidates and retaining quality faculty.

All faculty members undergo a yearly evaluation of performance. Where appropriate and consistent with expectations of teaching, research, and service, such evaluation should credit faculty members for their contributions to achieving the goals of this master plan.

There is an urgent need for master's degree programs for teachers in the disciplines or subject areas of mathematics, science, history, literature, foreign languages, and the arts.

Recommendations

Increase number of degrees awarded

- Increase the number of baccalaureate degrees awarded so that increased educational attainment levels can lead to state-wide economic improvement and expanded civic engagement.

Increase the number of degrees awarded in STEM fields

- Increase coursework offerings and academic programs in science, math, and technology fields to the extent consistent with institutional missions.
- Increase student involvement in STEM research experiences.

Expand educational opportunities in international studies and foreign languages

- Expand study abroad programs.
- Develop course and program offerings in international studies and foreign languages.
- Improve preparation for advanced study of foreign languages by working with secondary education.

Expand graduate and professional education

- Expand graduate programs, especially at the master's level, and make them responsive to state regional needs and accessible to students across the state.

Expand and strengthen teacher education programs

- Expand and strengthen teacher education programs in particular subject areas to meet regional needs across the state.

Expand research commitments

- Expand commitments to research, particularly at West Virginia University and Marshall University.
- Enhance funding for programs such as Research Challenge and EPSCoR.

Refine and strengthen assessment of student learning

- Develop a culture of academic accountability by strengthening assessment programs on all campuses.
- Assess value-added learning and general education through multifaceted assessment programs.
- Ensure that our institutions meet the standards set by the Higher Learning Commission of the North Central Association.
- Implement national student learning assessment measures such as Collegiate Learning Assessment.
- Assess capstone courses and evaluate whether curricula are aligned with national and international goals and standards.
- Empower faculty to define educational objectives and develop measures of progress.

Improve student retention

- Protect the state's investment in human capital and our students' investment of personal capital by increasing our retention rates.
- Strengthen academic support services and student advising systems.
- Study retention issues systematically and implement the findings.
- Address retention issues for specific populations such as minority students.

Recommendations

Increase six-year graduation rates

- Increase six-year graduation rates to at least the level of institutional peers, taking into account the academic profile of the entering class.
- Develop a system for tracking graduation rates for non-traditional students, including those not entering as freshman, those pursuing degrees on a part-time or non-continuous basis, and those who have transferred between in-state higher education institutions.

Improve the quality of K-12 teachers in West Virginia

- Strengthen teacher preparation.
- Increase collaborative efforts with K-12 school systems in areas of professional development, education of pre-service teachers, and mentoring of new teachers.

Strengthen the quality of faculty at institutions of higher education

- Invest in faculty salaries in order to recruit and retain high-quality faculty, while also fostering increased research advancement, curriculum development, and service to the state.
- Work with state government to secure additional funding that will bring faculty salaries in line with comparable institutions in other states and with SREB averages to enable recruitment of high-quality faculty to offset anticipated wide-scale retirements of baby boomer generation faculty.

Our institutions must innovate in terms of finance structure, education methods and delivery, and partnerships with private enterprise to meet West Virginia's demographic challenges.

5. INNOVATION

How can we devise innovative programs, partnerships, research initiatives, curricula, and pedagogy to best achieve goals related to access, quality, target fields, cost efficiency, and economic development? How do we encourage higher levels of knowledge creation and put entrepreneurship, research, and partnerships at the service of our overarching goals?

Innovation is necessary to accommodate changing population demographics, address the pressures of globalization, maximize use of existing resources and infrastructure, utilize new technologies, and communicate more effectively with our constituents.

Innovation as Keyword

Although we devote this section of the master plan to innovation, we recognize that reaching the goals of all sections of the master plan will require innovative strategies. Innovation is required to make higher education accessible for West Virginians of various ages and geographical locations, to develop and enhance competitive and cutting edge curricula and research agendas, and to generate revenue to help make up the difference between state appropriations and operating expenses for our higher education system. Innovation is also key to business creation as research ideas are brought to the marketplace. Therefore, innovation covers such areas as curricula and content, pedagogies and delivery methods, communication, cost management, workforce training, and job creation. Innovation in all these areas is necessary to accommodate changing population demographics, address the pressures of globalization, maximize use of existing resources and infrastructure, utilize new technologies, and communicate more effectively with our constituents.

Institutional Missions and Collaboration

We can maximize the benefit of existing resources and focus our efforts to generate new resources by refining institutional missions within West Virginia's higher education system. Accordingly, we can designate and maintain programs of distinction in targeted areas and tailor programs to serve the state's needs.

We advocate the designation and maintenance of select programs of distinction at institutions across the state. These include undergraduate and graduate programs. They must provide evidence of outstanding achievement, including accomplishments of faculty, students, and graduates. By focusing on select programs of distinction, institutions can maximize the benefit of existing resources to ensure delivery of high quality and accessible programs.

Although refining institutional missions is one goal of this plan, we also recognize the importance of collaboration among institutions to develop and expand collaborative academic programs and to articulate relationships among baccalaureate institutions, community colleges, and private providers to meet workforce and educational needs. In addition to increased collaboration among institutions, such a plan fosters collaboration between institutions of higher education and public and private partners.

Entrepreneurship

We envision entrepreneurial partnerships among higher education institutions, state and non-governmental agencies, corporate groups, and venture capitalists. These partnerships will generate job and educational opportunities related to areas of economic growth such as tourism, health care, services related to state needs, and the emerging technology-based economic development (TBED) workforce.

In addition, we must look to entrepreneurial ventures in order to make up discrepancies between state funding levels and delivery costs for higher education. West Virginia receives the least support from state appropriations per FTE of any state in the SREB. In fact, state appropriations for operating expenses have decreased 11.9 percent since 1999, and West Virginia ranks 49th in the nation.

Research

Research leads to innovation, and we will expand student research opportunities that encourage critical thinking and problem solving. We recognize the importance and encourage expansion of broad-based research efforts in STEM, enhanced competitiveness, and infrastructure development such as EPSCoR and Research Challenge. We suggest an additional state-level program that provides significant funding to institutions on a competitive basis to stimulate research and service.

Curriculum, Technology, and Pedagogy

Innovation comes into play in developing and delivering curricula. Technology is key to innovation in delivery methods and instructional techniques. Accordingly, we will make fuller and more effective use of instructional technologies. We envision these new technologies operating both in the traditional classroom setting and in distance education. On both counts, our institutions need to share technological resources and strategies. We will create incentives to promote the development and dissemination of information technology-based collaborative tools.

Curriculum innovation will help us strengthen programs that focus on reading comprehension, writing, critical thinking, and problem solving; develop international studies and foreign language programs; and intensify course-related STEM research opportunities. We will create incentives for linking recent research in pedagogy to actual classroom practice.

Curriculum revision and development should consider the educational needs of West Virginia's citizens, the state's economic projections, and global trends in education and economics. Our institutions must strive to achieve best practices of higher education by focusing on advanced-level skills of reading, writing, and critical thinking and by linking pedagogical research to classroom practice.

Civic Engagement

Legislative mandate requires West Virginia's system of higher education to foster civic engagement, and it is part of our mission to serve the state's citizens. We will continue to develop and expand service learning programs that help train students through internships and entrepreneurial partnerships and that also serve local needs of our citizens. In this way, civic engagement programs are tailored to a long-range plan for West Virginia's economic future, which necessarily must include health, environment, and quality-of-life issues. Beyond service learning, our colleges and universities will continue to develop a culture of civic engagement by encouraging students and graduates to participate in volunteerism, community service, and public advocacy. Many of our programs and curricula involve outreach components and outcomes in areas of health, education, business enterprise, and more. In addition, we educate students to serve as informed and engaged citizens in a participatory democracy.

Institutional Compacts

West Virginia Code (§18B-1-1a) indicates the legislature's intent to engage higher education in a statewide compact for the future of West Virginia. With the implementation of *Charting the Future* 2007-2012, the West Virginia Higher Education Policy Commission calls on the state's public colleges and universities to renew institutional compacts that indicate progress toward meeting the goals articulated here. The compacts, with annual updates and revisions of institutional performance, are the basis for assessing success in carrying out the institutional mission and in attaining institutional and state goals. Through the establishment of new institutional compacts, mandated by legislative action, and an annual review of institutional progress, we challenge institutions to provide exemplary service.

Research leads to innovation, and we will expand student research opportunities that encourage critical thinking and problem solving.

Recommendations

Refine institutional missions and designate and maintain programs of distinction

- Refine institutional missions to maximize the benefits of our resources and focus resource enhancement.
- Concentrate efforts in areas supported by adequate resources to assure the high quality of our academic programs.
- Provide accessible courses and programs by considering regional needs while encouraging collaboration among higher education institutions to meet workforce and educational needs.
- Designate and maintain programs of distinction in targeted areas as part of institutional mission focus.

Implement new technologies and promote innovative and technology-adaptive curricula for target areas

- Innovate teaching techniques to advance programs in the target areas of global awareness, science and technology and of communication and critical thinking.
- Enhance the international dimensions of campuses through innovative curriculum development related to foreign language programs, study abroad, and other activities.
- Enhance STEM field opportunities for research and application through innovative curricula and pedagogies.
- Improve skills of reading comprehension, writing, and critical thinking and problem solving through innovative uses of technology and development of applied curricula.
- Expand educational outreach through appropriate use of instructional technologies.

Foster civic engagement

- Serve the public-at-large and foster civic engagement as part of our state mission.
- Promote service learning programs to enhance the undergraduate academic experience and to improve cognitive performance.
- Enhance programs such as Campus Compact to implement service learning initiatives.

Promote initiatives that support and enhance academic research and development efforts

- Allocate research funds to allow individual institutions the flexibility to retain faculty, respond to economic trends, and anticipate long-term goals.
- Expand our research infrastructure, particularly at West Virginia University and Marshall University, to link research and development to business growth and the economy.
- Enhance the *application* of research and technology to economic growth, job creation, and improved quality of life.
- Communicate to our various stakeholders the crucial benefits for the state that derive from academic research and development and technology transfer.

Develop entrepreneurial partnerships

- Collaborate with public and private partners to meet workforce and educational needs.
- Work with state agencies and the corporate sector to establish entrepreneurial partnerships to address a broad range of economic development areas, including tourism, health care, and other needed services.
- Expand research opportunities through entrepreneurial partnerships.
- Develop entrepreneurial opportunities specifically related to the focus areas of STEM fields, international education, and critical communication.

III. CONCLUSION

Charting the Future envisions a strategic network of partnerships among higher education and West Virginia's stakeholders to improve the quality of life for our citizens and foster economic opportunity. Stakeholders in West Virginia's system of higher education include not only students and their families, but also governmental bodies that husband state resources, state and local agencies that deliver services and oversee civic infrastructure, and private enterprises that drive the state's economy. By developing partnerships with these stakeholders, West Virginia's system of higher education intends to enhance the learning, research, and entrepreneurship that is essential for economic growth.

We see the relationship between higher education and economic growth as reciprocal. Higher education must contribute to the state's economic growth in order to provide job opportunities for our graduates and to stimulate the private sectors that, in turn, will contribute to higher education by offering learning and research opportunities for students and enabling program development and expansion. Thus, while higher education must help grow the economy, economic growth will, in turn, contribute to a more robust system of higher education, allowing us to widen access and manage costs for students. This reciprocal relationship highlights the interplay of research, partnerships, and entrepreneurship that is essential for both economic growth and for higher education goals of student access, affordability, learning and accountability, and innovation.

Higher education in West Virginia will need to concentrate on innovation to adapt to the demands of the new global economy and the current financial realities of public education. Our institutions must innovate in terms of finance structure, education methods and delivery, and partnerships with private enterprise to meet West Virginia's demographic challenges. In particular, we consider the differing regional demands across the state in terms of geographic and financial access to programs and courses.

The planning period of 2007-2012 thus provides an opportunity to redirect strategy for how higher education can best serve the state and to revitalize public education in a climate of increased fiscal constraints. Because higher education enables upward mobility and equal opportunity is crucial to the ideals of American democracy, we must minimize cost increases to students and families. Although we rely on the state's continued support for higher education, this plan calls on our colleges and universities to embrace research, innovation, and entrepreneurship in charting the way for future success.

While higher education must help grow the economy, economic growth will, in turn, contribute to a more robust system of higher education, allowing us to widen access and manage costs for students.

IV. REFERENCES

ACT (2007). *Rigor at Risk: Reaffirming Quality in the High School Core Curriculum*. Iowa City, IA.

Blanco, C., et. al. (2007). *Thinking Outside the Box: Policy Strategies for Readiness, Access, and Success*. Western Interstate Commission for Higher Education. Boulder, CO.

Carey, Kevin (2006). *College Rankings Reformed: The Case for a New Order in Higher Education*. Education Sector. Washington, DC.

Educational Testing Service (2006). *Culture of Evidence: Postsecondary Assessment and Learning Outcomes*. Princeton, NJ.

Educational Testing Service (2007). *Culture of Evidence II: Critical Features of Assessments for Postsecondary Student Learning*. Princeton, NJ.

Grasso, D., Marinelli D. (2007). "Holistic Engineering." The Chronicle of Higher Education, 53.28, B8.

Hadley, E., et al. (2007). *Higher Education: Soaring Out of Reach for West Virginia Families*. Campaign for America's Future. www.ourfuture.org. Retrieved September 15, 2006 from http://home. ourfuture.org/education/soaring-out-of-reach.html.

Hechinger Institute (2006). *Beyond the Rankings: Measuring Learning in Higher Education*. New York, NY.

Kelly, Patrick. "Selected Data for West Virginia Higher Education." Paper presented to the Leadership Group for The National Collaborative for Postsecondary Education Policy. June 4, 2003. Charleston, WV.

Lingenfelter, P.E. (2007). "How Should States Respond to A Test of Leadership?" Change, January/February 2007, 13-19.

Miller, M. A., Ewell, P.T. (2005). *Measuring Up on College-Level Learning*. National Center for Higher Education Management Systems. Boulder, CO.

National Academies (2006). *Rising Above the Gathering Storm: Energizing and Employing America for a Brighter Economic Future*. National Academies Press. Washington, DC.

National Association of State Student Grant and Aid Programs (2007). *37th Annual Survey Report on State Sponsored Student Financial Aid, 2005-2006*.

National Center for Public Policy and Higher Education (2006). *Measuring Up 2006: The State Report Card on Higher Education*. San Jose, CA.

National Center for Public Policy and Higher Education (2007). *Squeeze Play: How Parents and the Public Look at Higher Education Today*. San Jose, CA.

National Commission on Accountability in Higher Education (2005). *Accountability for Better Results: A National Imperative for Higher Education*. State Higher Education Executive Officers. Boulder, CO.

National Conference of State Legislatures (2006). *Transforming Higher Education*. Washington, DC.

National Governor's Association and the Pew Center on the States (2007). *Investing in Innovation*. Washington, DC.

Secretary of Education's Commission on the Future of Higher Education (2006). *A Test of Leadership*. U.S. Dept. of Education. Washington, D.C.

Southern Regional Education Board (2006). *Holding Colleges and Universities Accountable for Meeting State Needs*. Atlanta, GA.

Southern Regional Education Board (2006), *Factbook 2005-2006*. Atlanta, GA.

Southern Regional Education Board (2006). *SREB—State Data Exchange 2005-2006 Highlights*. Atlanta, GA.

West Virginia Code (2006). Sections 18B-1-1a, 18B-1B-9, 18B-1A-2. West Virginia Legislature. Charleston, WV. Retrieved October 15, 2007 from http://www.legis.state.wv.us/WVCODE/18B/masterfrmFrm.htm.

West Virginia EPSCoR Advisory Council (2005). *Vision 2015: West Virginia Science and Technology Strategic Plan*. Charleston, WV.

West Virginia Higher Education Policy Commission (2000). *It All Adds Up: Compact for the Future of West Virginia*. Charleston, WV.

West Virginia Vision Shared (2005). *West Virginia: A Vision Shared, Work Plan 2005*. Charleston, WV.

West Virginia University Bureau of Business and Economic Research (2006). *West Virginia Economic Outlook 2007*. Morgantown, WV.

West Virginia Higher Education Policy Commission
1018 Kanawha Blvd. East
Charleston, West Virginia 25301-2025

West Virginia Higher Education Policy Commission
1018 Kanawha Blvd. East
Charleston, West Virginia 25301-2025