

WORKING DRAFT
Master Plan for West Virginia Higher Education
West Virginia Higher Education Policy Commission
2007-2012

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I. INTRODUCTION

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 (HEPC) 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 less state funding while embracing public accountability and access for lower-income students.

Post-secondary education is critical not only to the economic futures of our individual citizens, but also to 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 and foster economic growth. Our higher education system must educate a capable workforce and work toward developing job opportunities that will employ our graduates within the state. This plan challenges institutions of higher education across the state to meet the goals of this public agenda by re-examining their institutional missions and working together to develop a state-wide system geared toward expanding opportunities for all West Virginians.

The current economic climate requires that we make higher education a partner in prosperity for West Virginia, but higher education contributes to the state in myriad ways beyond the economic. Higher education creates a network of public service and civic engagement initiatives, improving the quality of life for all West Virginians through outreach by students, faculty, staff, and graduates to local communities. By focusing on communication, accountability, and engagement, this plan aims to enhance the shared sense of the value of higher education to the state and for the people of West Virginia. Fundamentally, this plan sees higher education as a public good and seeks to enhance its contributions by setting challenging and measurable goals for access and learning combined with a pragmatic approach to funding and economic engagement. West Virginia's Higher Education Policy Commission and the state's colleges and universities embrace a long-term vision for the state as economically sound, culturally vibrant, and environmentally healthy—with opportunity for all citizens.

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 such policy 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 state higher education to make up this difference by preparing all students for post-secondary education; providing better information on higher education opportunities; containing costs; improving retention and graduation rates; and strengthening the reading, writing, and thinking skills expected of college graduates. It also indicates the need to graduate more students with degrees in science, technology, engineering, and math (STEM fields) and to focus on international programs and foreign languages.

On a regional level, the Southern Regional Education Board (SREB), a sixteen-member consortium including West Virginia, makes 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.

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 West Virginia's system of education and economy competitive on regional, national, and international levels. State policy documents build on national and regional recommendations to set goals of 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. We plan to strengthen knowledge-intensive fields in science, health, and technology; in international programs and foreign languages; and in 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, healthcare, and other services. All these recommendations work toward larger economic, social, and cultural transformations effected by a vital system of higher education.

This master plan 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. 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 dollars brought in from external sources has also increased—from about \$98.5 million to \$171.6 million between 2001 and 2005. Research activity not only bolsters positive graduate education outcomes, but positively impacts economic development within the state. 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.

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 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 the HEPC reports that West Virginia has improved its college-going rates for high school graduates, the state still ranks last nationally in the percent 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.

Given West Virginia's low rates of workforce participation and adults with higher education degrees, we plan to increase adult (aged 25 and older) participation in higher education. From 2001 to 2006, enrollment in baccalaureate institutions in West Virginia increased by 11.3 percent, and adult students comprised 17 percent of that growth. Nevertheless, a 2007 study of the Western Interstate Commission on Higher Education reports that West Virginia ranks 47th in serving adult students. This ranking is based on the number of adults with high school diplomas who have no higher education experience. West Virginia colleges served only 8.6 of this population as compared to the U.S. average of 14.3 percent. It is crucial that we increase adult participation in higher education in order to increase workforce participation rates.

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.

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. Institutions have worked hard to keep higher education affordable. 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. Despite funding cutbacks, West Virginia's colleges and universities remain relatively affordable. Tuition and fees have increased in recent years, but 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 expanding assessment and accountability programs.

In order to foster economic development, maximize use of resources, and make our graduates competitive in a knowledge-intensive global economy, this plan focuses throughout on the importance of partnerships, entrepreneurship, and research. West Virginia's colleges and universities have been and will continue to cultivate 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 of these keywords—research, partnerships, and entrepreneurship—throughout the plan is strategic.

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. The Master Plan's major 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 can we make post-secondary education accessible for all West Virginians? How can we 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 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?

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 can we 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?

West Virginia's system of higher education is tied to the economic health of the state and to the nation as a whole. Recent policy reports from the national, regional, and state levels call on state systems of higher education to prepare citizens to compete in the current knowledge-intensive, global economy. The National Conference of State Legislatures and the U.S. Department of Education, for example, emphasize that providing access to a quality post-secondary education for all citizens is key to regional and national economic vitality. They further call for higher education systems to respond to the globalized economy's demand for new priorities, skills, and knowledge.

West Virginia's system of higher education must respond to the demands of the new global economy while also addressing local needs. We must prepare students to compete in this knowledge-intensive, global economy, while also providing a range of post-secondary education options to facilitate state economic growth. We are aiming for an economy that is private sector-driven, globally competitive, and founded on high skill/wage jobs. Our goal is to provide a skilled workforce by increasing access to post-secondary education for all West Virginians. We also plan to work closely with public and private groups to develop more high skill/wage jobs to employ our graduates. Accordingly, the section of the master plan 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.

Higher education contributes to the state's economic vitality in several ways. It is integral to raising 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. In addition, 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.

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, and policy reports from other national groups such as the Campaign for America's Future. 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; 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.

Providing research opportunities for students is crucial to developing these areas of emphasis. Many of West Virginia's higher education institutions have increased research opportunities for undergraduate and graduate students in recent years. The state legislature has supported such opportunities by creating programs such as CURE, the Council on Undergraduate Research in Engineering. This master plan recognizes such successful efforts to foster research while also providing for increased research collaboration among students, faculty, institutions, public agencies, and private enterprises.

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. West Virginia University's Bureau of Business and Economic Research predicts slow economic growth for West Virginia over the next five years at rates well 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.

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 level of education 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.

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.

State economic predictions are most consistent with national recommendations for higher education in pointing to the need to enhance adult education opportunities. We recognize that 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. We also have a large proportion of the adult population that is not currently employed. They 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.

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.

Population Demographics

Because of West Virginia's population demographics and low percentage of adults with a college background, we need to focus on lifetime learning and workforce learning opportunities. Rapidly changing national and global economies require that workers continue training and education throughout their lifetimes. 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 by creating incentives for use of new technologies for teaching and research. We must also prepare traditional-age students to enter the workforce for the first time so that they can compete in a rapidly changing and knowledge-based economy.

Communication, Networking, and Job Creation

Though West Virginia's economic outlook presents a challenge, our institutions of higher education do 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 the state 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 clearing house 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 employment opportunities, out-of-state alumni, and current graduates. 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, public education, 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.

Recommendations

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

We intend to prepare students for a knowledge intensive global economy by developing and enhancing programs in international education, foreign languages, and study abroad; improving skills in reading comprehension, written communication, critical thinking, and problem-solving; providing research opportunities in programmatic areas of

emphasis; expanding programs and centers of entrepreneurship; and providing opportunities for internships, externships, and work study.

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

National recommendations stipulate that American universities need to graduate more students in STEM fields (science, technology, engineering, and math). To support this goal and ensure that our students are prepared for rigorous college and post-graduate curricula, West Virginia will also need to graduate more students who are qualified to *teach* in STEM fields. Overall, we need to increase the number of students attaining graduate degrees, in STEM and other high-demand fields, in order to produce a qualified workforce for today's knowledge-intensive economy. Increasing the number of STEM graduates in baccalaureate, graduate, and teacher preparation fields is a significant challenge and will necessitate program expansion. Institutions will also need to provide greater scholarship opportunities to attract students to these fields. Furthermore, growth in STEM enrollment and programs will require the infusion of additional financial resources. Successful efforts will depend on increases in appropriations, grants, external funding, and research commitments. Given the global range of research, work, and knowledge-production, we will also need to address immigration issues for international students and faculty so that we can provide high-quality educational opportunities in STEM and other high-demand fields.

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

Because West Virginia has a high percentage of adult students who are located in both urban and rural areas around the state, it is imperative that we make education accessible for place-bound adults. Furthermore, our working population needs to develop skills and acquire degrees throughout their working lifetimes to qualify for new job opportunities and keep abreast of developments in their fields, so West Virginia must provide working adults access to education throughout their lifetimes. Such continuing education opportunities might include fast-track programs for career changers with related degrees and/or experience. To provide opportunities for place-bound and working adults, we will need to focus our institutional missions to target the particular needs of our population demographics and our regional employers.

Develop partnerships with public and private employers for training and employment

We want to create partnerships between educational institutions and employers in order to facilitate the transition from school to work. We are already producing numerous qualified graduates ready to enter the

workforce, and we must communicate this success to businesses and other potential employers. Better communication will also enable us to align workforce needs with program offerings. We imagine a partnership with the business sector to develop an advocacy framework.

Key to facilitating this transition from school to work will be expanding career placement systems and strengthening alumni networks. We plan to 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? How can we 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?

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. Access is a two-pronged issue: we must work to ensure that students have the opportunity to attend institutions of higher education and are prepared to succeed. Studies have found that access to higher education depends on three central factors: adequate preparation, accessible information, and feasible cost. More specifically, the keys to access for our two main target populations of secondary school and adult students are preparation, communication, diversification, and financing.

In order not only to matriculate but also to succeed in higher education, 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. Specifically, we can increase access by: a) an enhanced awareness of

opportunities provided by higher education, b) working with secondary schools to prepare students for college, c) meeting the needs of special populations, and d) providing financial support. By addressing the three crucial factors of preparation, information, and cost, we envision creating a seamless pathway between high school and college that will increase access and graduation 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 (Southern Regional Education Board) percentages. While West Virginia has increased the college going rate between 2000 and 2005, 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 postsecondary education for West Virginia's secondary school students.

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.

A large percentage of our higher education students (29.75 percent) are between 25-40 years of age, and 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 indicate the necessity for post-secondary adult education. Accordingly, this plan addresses issues of access to continuing educational opportunities for citizens currently in the workforce and for adults not currently employed in order to increase employment participation rates. We recognize that, as a rural state, students need access to institutions located close to them. But distance education is also crucial both for reaching our rural populations and for serving individuals currently employed.

For students of all ages, cost is a prohibitive factor. We need to expand financial aid programs, disseminate information on available financial aid, and to keep tuition costs manageable. 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.

Student Preparation and Outreach

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 to convey an awareness of academic expectations and to improve preparation of college-bound students. 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.

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 or simply to send compilations of syllabi from General Education classes in bound books and CDs for distribution to area high schools in order to convey academic expectations of students entering college. We want to expand such programs.

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 recognize, however, that high quality must be maintained in all courses delivered in high schools for which college credit is given and that assessment will be crucial. We advocate an increase in use of Advanced Placement, International Baccalaureate, and the college courses for high school programs. West Virginia is making progress in preparation for college as reflected in course-taking patterns and performances 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 is important to educating high school students about college expectations and thereby encouraging more rigorous courses of study. We want to expand programs which 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 have a better understanding of what courses to take in high school. In general, students, families, teachers, and employers need easily accessible information on higher education opportunities and programs.

Adult and Transfer Students

West Virginia has an existing workforce that must remain competitive in a changing economy. We will provide opportunities for workers to continue their education and acquire additional degrees, credentials, and training. Educational opportunities need to be relevant, affordable, and responsive to learners and community needs.

Because our working students are located throughout the state, distance learning is key to making lifelong learning accessible. Our institutions are developing distance-learning programs geared toward adult and part-time students located across the state. Part-time and working students 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.

Given past college-going rates for West Virginia, we must target an adult population to create access to higher education. In fact, almost 30 percent of West Virginia's higher education students are between 25-49 years of age. We reiterate that to address geographic and age-related barriers to access, we will need to provide non-traditional student education through on-line courses. 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.

It is also important to 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 fewer 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.

Facilitating the transfer of credits for transfer students is key to controlling cost of higher education and decreasing time to completion of degree. We will improve transfer opportunities for students who complete Associate and Applied Science programs. We will also expand the College Core Transfer Agreement. We intend to

encourage expansion of articulation agreements between two-year and four-year institutions regarding transfer credit.

Cost and Financial Aid

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 must continue to 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.

Recommendations

Strengthen student preparation for postsecondary education

Student preparation is key to success at the post-secondary level. We want to articulate expectations for college success by collaborating with K-12 educators to convey an awareness of academic expectations and to improve preparation of college-bound students. We further plan to work toward aligning the high school curriculum with college requirements through collaboration with the K-12 sector. We can also encourage more high school students to complete rigorous curricula including more college preparatory and college courses in the high school senior year. Similarly, we encourage increased participation in Advanced Placement, International Baccalaureate, and college courses for high school students programs.

Facilitate the transition from secondary to postsecondary education for high school graduates

We believe that outreach is important for promoting the importance of higher education for West Virginians and for ensuring that our secondary-school students are prepared to continue their education. We can 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, postsecondary opportunities, and financial aid options.

Enhance outreach to all residents to participate in higher education

We intend to facilitate the transition into post-secondary education not only for secondary school students but for all West Virginians. We must convey the value of higher education and make accessible information on available opportunities. We will promote an enhanced public awareness of the value of a college education, the preparation required for such an education, and the financial aid available. In sum, and in accordance with

national recommendations, we will provide easily accessible information on higher education opportunities to traditional and non-traditional students, families, teachers and employers.

Provide Opportunities for Continuing Education and Lifelong Learning for Working Adults and those Entering the Workforce

National, regional, and state educational policy groups agree that we must provide opportunities for adults in the workforce to continue their education and acquire additional degrees, credentials and training. We must develop, as well, a culture of lifelong learning by providing educational experiences that are engaging and challenging and that encourage self-motivation and self-direction.

To reach our rural populations, serve working individuals, and provide access for non-traditional students, we must increase the use of distance education. But distance education will work only if we can improve the infrastructure for and access to high-speed Internet for West Virginians across the state.

In sum, we plan to 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

We can also improve access to higher education for students by reducing both cost and the time to degree completion. And we can reduce costs and time involved by facilitating the transition between institutions for transfer students, especially those who have completed AAS degree programs. To this end, we want to increase the number of articulation agreements between community colleges and baccalaureate institutions to enhance credit transfer. We can also 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?

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 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 did increase 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.

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 (full-time equivalent student) (NASSGAP 2005-2006). 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 institution 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 does reach a wide number of traditional students through existing aid programs, these programs do not help adult or part-time

students to the extent desired to create greater access. 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.

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, since students can work fewer hours at outside jobs and focus on their studies. Overall, cost containment is crucial to increasing both access and learning and accountability.

Although all five areas of the master plan are interdependent, many of the recommendations related to access bear closely on 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 and speed 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 course 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. But even as we expand existing programs with relatively little cost, concentrating on designated programs of excellence will also allow institutions to contain cost by refining missions and allow the state system to economize through diversification of 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, 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. 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.

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 Data Exchange 2006). In the long run, bringing salaries in line with peer SREB states 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.

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 address workforce demands and the needs of 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 skills, 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, non-governmental agencies, and private enterprise to make use of resources beyond our campuses.

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 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. One key to garnering public support, is developing a culture of accountability and responsibility for learning success among institutions and students. In order to develop this culture of accountability 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. We need to provide evidence of educational results and success to demonstrate the return on the investment of state funds into higher education and develop a culture that values higher education among West Virginians.

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, the needs of low-income students, and the quality of education through long-term planning at the state level. 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 written communication and critical thinking.

STEM Fields, International Programs, Critical Thinking

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.

There is, further, a relationship among these focus areas of STEM fields, international programs, and critical analysis and communication. A recent *Chronicle of Higher Education* article, co-authored by a West Virginia University engineering professor, 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 that 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. Furthermore, West Virginia has begun initiatives to advance research with the goal of stimulating economic development. We recognize the importance and encourage expansion of such broad-based state research efforts as EPSCoR (Experimental Program to Stimulate Competitive Research) and Research Challenge. EPSCoR’s strategic plan, Vision 2015, lays out a framework for promoting economic development through research in science and technology. 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 research efforts in the state. We suggest an increase in state-level Research Challenge-type programs to stimulate international activity in teaching, research, student and faculty exchange, and service. We are also fortunate to have FACDIS, the statewide international education consortium which has effectively supported faculty and curriculum development 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. Another successful research-supporting program, set up by the legislature, is the Council on Undergraduate Research in Engineering (CURE).

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 also plan to champion and make visible to the public our current student research success and 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 plan to implement national student learning assessments such as Collegiate Learning Assessment. Even as we incorporate national assessment measures, we must empower faculty to define educational objectives and develop measures of progress. Other assessment areas include general education through means such as the ETS Measure of Academic Proficiency and Progress or ACT CAAP. We will explore the assessment of capstone courses. 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 that of educators and the state. We can gauge student satisfaction through 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. Six-year graduation rate for students entering in fall 2000 was 47.7 percent. Our goal for the five-year period of this plan is to increase freshman to sophomore retention rates and graduation rates at each institution to at least the national average of its institutional 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 different regions of the state, 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 collaborate with the baccalaureate colleges and community and technical colleges in each region to coordinate programs. 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. Teachers need support and incentives to reach our goals of intensifying research, developing curricula, and focusing assessment measures. We also plan to develop incentives for teachers 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 district. (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 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.

Recommendations

Increase number of degrees awarded

West Virginia has the lowest percentage of baccalaureate degree-holders in the nation, so it is paramount that state colleges and universities increase the number of baccalaureate degrees awarded. Only by increasing educational attainment levels can the state see economic improvement and expanded civic engagement.

Increase the number of degrees awarded in STEM fields

To the extent that it is consistent with institutional missions, each institution should increase coursework offerings and academic programs in science, math, and technology fields. Increasing the number of graduates in these fields is vital to economic development and job placement.

Expand graduate and professional education

Institutions offering graduate programs, especially at the master's level, should expand such opportunities and work to make them responsive to state regional needs and accessible to students across the state.

Expand and strengthen teacher education programs

Institutions should expand and strengthen teacher education programs in particular subject areas to meet regional needs across the state.

Expand research commitments

Commitments to research in West Virginia higher education must be greatly expanded, particularly at West Virginia University and Marshall University. We must undertake concerted efforts to enhance funding for programs such as the legislative initiative Research Challenge and EPSCoR.

Refine and strengthen assessment of student learning

We must take steps to develop a culture of academic accountability by strengthening assessment programs on all campuses. Assessment programs should be multifaceted to assess value-added learning and general education. We must also ensure that our institutions meet the standards set by the Higher Learning Commission of the North Central Association. Other assessment measures include implementing national student learning assessments such as Collegiate Learning Assessment, assessing capstone courses, assessing curricula for alignment with national and international goals and standards. Any assessment model should empower faculty to define educational objectives and develop measures of progress.

Improve student retention

Each undergraduate student enrolled represents an investment in the state's future. We must protect the state's investment in this human capital and our students' investment of personal capital by increasing our retention rates. Strengthened academic support services and student advising systems will help improve retention rates. We also advocate studying retention issues systematically and implementing the findings, as well as addressing retention issues for specific populations such as minority students.

Increase six-year graduation rates

We aim to increase the six-year graduation rates to at least the level of institutional peers, taking into account the academic profile of the entering class. We plan to develop a system for tracking graduation rates for non-traditional students who are not entering as freshman and pursuing degrees on a full-time, continuous basis and for in-state transfer students

Improve the quality of K-12 teachers in West Virginia

Continued improvement of teacher preparation programs is necessary for West Virginia colleges and universities to serve the state's public education systems. We must 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

If we are to recruit and retain high-quality faculty, while also fostering increased research advancement, curriculum development, and service to the state, we need to invest in faculty salaries. Faculty salaries in West Virginia are well below regional and peer-institution averages. At the same time, expectations of faculty performance continue to increase. We must protect our investment in the human capital represented by faculty by bringing higher education faculty salaries in line with comparable institutions in other states and with SREB averages.

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 can we put entrepreneurship, research, and partnerships at the service of our overarching goals?

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. 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. Furthermore, legislative mandate requires that higher education contribute to the social and cultural well-being of the state generally.

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 excellence in targeted areas and tailor programs to serve best the state's needs.

We advocate the designation and maintenance of select programs of excellence 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 excellence, 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 collaboration among higher education institutions, state and non-governmental agencies, and corporate groups as entrepreneurial partnerships. These partnerships will generate job and educational opportunities related to areas of economic growth such as tourism, health care, and services and to related state needs.

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 (full time equivalent) of any state in the SREB district. In fact, state appropriations for operating expenses has 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. We recognize the importance and encourage expansion of broad-based research efforts such as EPSCoR and Research Challenge. We also plan to champion and make visible to the public our current student research success and its benefit to the state. The International Innovation Grants from EPSCoR, the "Internationalizing Higher Education" conference in April 2006, and the current Internationalization Grants Program are three good steps in the right direction on this issue. To build on these steps, we suggest a state-level Research Challenge-type program that provides larger grants (\$50K and up) to institutions on a competitive basis to stimulate international activity in teaching, research, student and faculty exchange, and service.

Curriculum, Technology, and Pedagogy

Innovation comes into play both 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 for use in distance education. On both counts, our institutions need to share technological resources and strategies. And we will develop incentives to

promote the development and dissemination of information technology-based collaborative tools.

Curriculum innovation will help us strengthen programs focusing 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 development might also take into account projected growth areas for West Virginia's economy.

Institutions should reassess curricula in terms educational needs of West Virginia's citizens. Curricular revision and development should consider West Virginia's economic needs, global trends in education and economics, and 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

Our 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 our 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) provides that it is the intent of the Legislature to engage higher education in a statewide compact for the future of West Virginia. With the implementation of the Master Plan, 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 of the Master Plan. The compacts, with annual updates and revisions of institutional performance, are the basis for assessment of success in carrying out the institutional mission and in attainment of 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.

Recommendations

Refine institutional missions and designate and maintain programs of excellence

West Virginia higher education continues to face tight funding constraints. Accordingly, we must maximize the benefits of our resources and focus resource enhancement by reassessing and refining institutional missions. By concentrating our efforts in areas supported by adequate resources, we can assure the high quality of our academic programs. We can also provide accessible courses and programs by considering regional needs while encouraging collaboration among higher education institutions to meet workforce and educational needs. As institutions focus their missions, they will designate and maintain programs of excellence in targeted areas.

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

Innovative teaching techniques will help advance programs in the target areas of global awareness, science and technology, and communication and critical thinking. We plan to enhance the international dimensions on the campuses through innovative curriculum development related to foreign language programs, study abroad, and other activities that involve international experiences. Similarly, we can enhance STEM field opportunities for research and application through innovative curricula and pedagogies. Finally, we can improve skills of reading comprehension, writing, and critical thinking and problem solving through innovative uses of technology and development of applied curricula. We can also expand educational outreach through appropriate use of instructional technologies.

Foster civic engagement

Part of our mission as state institutions of higher education is to serve the public at large and to foster civic engagement. We want to promote service learning programs to enhance the undergraduate academic experience and to improve cognitive performance. Programs such as Campus Compact can be used to implement service learning initiatives.

Promote initiatives that support and enhance academic research and development efforts

Academic research is seen as key to job development and economic growth. Allocation of research funds will be critical in allowing individual institutions the flexibility to retain faculty, respond to economic trends, and anticipate long-term goals. We will support efforts to expand our research infrastructure, particularly at West Virginia University and Marshall University, to link research and development to business growth

and the economy. Specifically, we need to enhance the *application* of research and technology to economic growth, job creation, and improved quality of life. We want to communicate to our various stakeholders the crucial benefits for the State that derive from academic research and development and technology transfer.

Develop entrepreneurial partnerships

Higher education institutions will collaborate with public and private partners to meet workforce and educational needs. We will work with state agencies and the corporate sector to establish entrepreneurial partnerships to address a broad range of economic development areas, including tourism, healthcare, and other needed services. We can use these entrepreneurial partnerships to expand research opportunities. We also plan to develop entrepreneurial opportunities specifically related to the focus areas of STEM fields, international education, and critical communication.

III. CONCLUSION

This master plan envisions a strategic network of partnerships between higher education and West Virginia's stakeholders to improve the quality of life for our citizens and to 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 particular 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 is crucial to upward mobility and equal opportunity is crucial to America's democratic system, we must minimize cost increases to students and families. Although the state's continued support of higher education is crucial, this plan calls on our colleges and universities to embrace research, innovation, and entrepreneurship in charting the way for future success.

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