

Economic Development through Higher Education

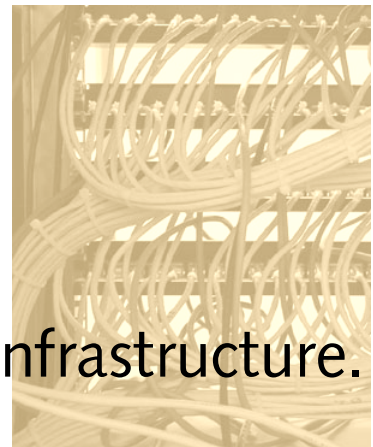
Individuals.



Ideas.



Infrastructure.



A report from the McCoy Working Group

EXECUTIVE SUMMARY

As we enter the 21st century, Mississippi finds itself in a new economic climate with a new set of rules and a critical new need for well-guided investment in higher education. We now compete in a global economy that is driven by knowledge, information, ideas and technology. Mississippi realizes the value of capitalizing on our existing strengths. However, as we look to the future of our state's economy, we must explore opportunities and ideas to become competitive in this new economic world. More than ever before, higher education holds the key to Mississippi's long-term economic success.

Mississippi has made great strides in higher education over the past several years. However, even greater strides must be taken in the future if Mississippi is to succeed in today's highly competitive environment. Specifically, higher education must make powerful contributions in four key areas: (1) workforce development, (2) forming strategic partnerships between higher education and industry, (3) the transfer of ideas and technologies from research laboratories to commercial applications, and (4) building communities and enhancing overall quality of life.

The McCoy Working Group was organized to develop a strategy for investment in higher education over the next twenty years that will lead to accelerated economic development in Mississippi. To summarize, this report contains the Group's recommendations in three areas that are vital to building Mississippi's economy where higher education has a clear, specific, and measurable role.

- **Development of Ideas**
- **Development of Individuals**
- **Development of Infrastructure**

The Group's recommendations focus on educational investments that hold great promise for yielding high rates of return. The ideas and recommendations should be viewed as a broad, visionary look into what Mississippi can achieve in the future if sound investments are made today.

BACKGROUND & ANALYSIS

A goal that must be achieved

As we enter the age of what has been coined the New Economy, even the most astute businesspeople and scholars can't help but wonder what lies ahead. After all, change always brings uncertainty. However, at least three things are for certain: yesterday is gone, tomorrow is here and Mississippi is playing a high-stakes game of catch-up.

The changing face of economic development

To a great extent, Mississippi has yet to reach its potential in the new knowledge-based economy. However, we must continue to recognize the importance of building upon existing industries that offer potential for future economic growth. Tourism, for example, holds tremendous promise. But if we are to succeed in the new economic climate, Mississippi must achieve a balance between a manufacturing-based economy and one driven by knowledge, ideas, information and technology. The importance of this pivotal change cannot be overstated. As compared to other states, our current level of competitiveness is relatively low. But the opportunities before us are limited only by our imagination and our willingness to transform imagination into reality.

The task at hand for higher education

Much of the burden of transforming Mississippi's economy will fall squarely upon the capable shoulders of the state's economic developers and our higher education system. This transformation will require Mississippi's colleges and universities to provide expertise, experience and leadership in at least four key areas:

1. **Workforce development**, arming graduates with the knowledge necessary for today's knowledge-driven economy
2. **Strategic partnerships** between higher education and industry that will lead to economic development
3. **Generation and transfer of ideas and technologies** from research to commercial applications
4. **Building communities and enhancing quality of life** to attract and retain business and industry

Mississippi's colleges and universities have the talent, creativity and expertise necessary to make a profound difference in all of these areas. Now, it is the state's responsibility to make sure they have the resources they need to make it all happen.

A new sense of urgency

Mississippi is fortunate to have leaders who recognize the importance of higher education in economic development. But Mississippi isn't the only state to realize that investment in higher

education holds the key to economic development. Throughout the country, other states are committing powerful financial and political resources to higher education, working toward the singular goal of gaining a competitive edge in today's increasingly competitive economy. Clearly, Mississippi must quickly take bold steps to strengthen its position. Making sure that these steps lead to lasting economic success is the overriding objective of the recommendations offered by the McCoy Working Group in this report.

Today's Assets	Tomorrow's Assets
Proximity to industrial centers	Proximity to colleges and universities
Low-cost labor	Educated workforce
Abundant natural resources	Resources for research
Transportation infrastructure	Information infrastructure

Mission of the McCoy Working Group

The McCoy Working Group was organized to develop a strategy for 20-year investment in higher education that will lead to accelerating economic development. Under the leadership of representatives Billy McCoy, Steve Holland and Charles Young, the McCoy Group was initiated by the Mississippi legislature in 2003. Chaired by Robert Khayat, Clyde Muse and Lester Spell, the Group is comprised of a variety of leaders representing Mississippi's colleges, universities, state agencies and the private sector.

This report contains the group's recommendations for funding public universities and community colleges with the ultimate goal of driving economic development. Their recommendations are designed to direct Mississippi's educational firepower toward the programs and projects that offer the greatest potential for economic impact, eliminating key weaknesses, identifying new opportunities, and building upon existing strengths.

Methodology

The McCoy Working Group began its work in the spring of 2003. Shortly after the formation of the Group, interested parties gathered together to assign focus area groups in targeted areas of expertise:

- Community Colleges
- Undergraduate Education
- Graduate Education and Research
- State Agencies
- Social and Cultural Issues
- Business and Industry

Each focus area, coordinated by a volunteer, was provided a standardized template (attached). The participants then researched the data, met with the appropriate constituencies and developed ideas. On August 1, their recommendations were submitted.

At this point, representatives from Mississippi community colleges and universities and state agencies were invited to a working group meeting in Jackson where recommendations were explored and discussed. Upon conclusion of that meeting, it was the recommendation of the collective group to combine ideas with similar goals and outcomes to ensure that the recommendations submitted would have statewide impact, not just emphasis in particular areas of the state.

A draft of the report was submitted to the chairs for review in October. Based on their input and guidance, the final draft was completed in November 2003.

The current economic situation

For much of the 20th century, Mississippi worked to make the transition from an economy rooted in agriculture to an economy driven by manufacturing. As a result, Mississippi now boasts a relatively strong manufacturing base.

Today, the state has 3,875 manufacturing firms employing more than 200,000 employees.

While this represents a major victory for previous economic development efforts, it also represents potential for economic decline in the New Economy. Consider these trends:

Trend 1: The nation as a whole is shifting away from manufacturing toward knowledge- and technology-based industries

Trend 2: There is an increasing movement of manufacturing jobs out of the country

Trend 3: Leading-edge manufacturers, such as those represented in the automotive industry, are employing advanced technologies that require higher skill levels

Mississippi, which has a high percentage of its work force in manufacturing, is already feeling the effects of these changes. According to the U.S. Bureau of Labor Statistics, Mississippi has lost approximately 44,000 manufacturing jobs since 2000. In 2002 alone, more than 100 manufacturing plants closed the doors in Mississippi.

Through programs such as *Advantage Mississippi*, the state has already taken steps to enhance Mississippi's competitiveness. However, much more must be done in order to make Mississippi truly competitive on a global scale.

Where we stand in the new economy

Although Mississippi has carved out a notable niche in high-technology fields such as telecommunications and remote sensing, Mississippi and West Virginia continue to rank as the two states most reliant on the "old economy." The 2002 New Economy Index ranked Mississippi 49th of the 50 states: up from 50th in 1999. This ranking was based on key factors that indicate a state's ability to compete in a global knowledge-driven economy.

NEW ECONOMY INDEX (Selected statistics)	Mississippi rank
OVERALL RATING AMONG 50 STATES	49
AGGREGATED KNOWLEDGE JOBS	44
Information Technology Jobs Employment in IT occupations in non-IT industries as a share of total jobs	48
Managerial, professional and tech jobs Managers, professionals and technicians as share of total workforce	46
Workforce Education Weighted measure of the educational attainment of the workforce	36
Education Level of the Manufacturing Workforce Weighted measure of the educational attainment of the manufacturing workforce	27
AGGREGATED DIGITAL ECONOMY SCORES	50
Online Population Percentage of adults with Internet access in each state	50
Commercial Internet Domain Names Number of commercial Internet domain names per firm	48
Technology in Schools Weighted measure of five factors measuring computer and Internet use in schools	41
Digital Government Measure of the utilization of digital technologies in state government	42
Online Agriculture Measure of the percentage of farmers with Internet access and who use computers for business	49
Online Manufacturers Percentage of manufacturing establishments with Internet access	37
Broadband Telecommunications Measure of the use and deployment of broadband telecommunications infrastructure over telephone lines	47
AGGREGATED INNOVATION CAPACITY	50
High-tech Jobs Jobs in electronic manufacturing, software and computer-related services, telecommunications and biomedical as a share of total employment	47
Scientists and Engineers Civilian scientists and engineers as a percentage of the workforce	45
Patents The number of patents issued to companies or individuals per 1,000 workers	48
Industry Investment in R&D Industry investment in research and development as a percentage of Gross State Product	45
Venture Capital Venture capital invested as a percentage of GSP	43
<i>Source: 2002 New Economy Index</i>	

Education: a brief overview

There is a positive story unfolding on the campuses of Mississippi's colleges and universities. This story can best be illustrated by the following:

- Since 1994, enrollment at Mississippi's universities has grown by 21 percent while enrollment in our community and junior colleges has grown by 25 percent.
- Preliminary enrollment data for fall 2003 shows an eighth year of record enrollment increases for Mississippi's public universities.
- In the period from 1989 to 1999, the proportion of the population with a bachelor's degree increased from 15 percent to 22 percent. This is the second highest increase of any state during this period.
- Mississippi's Community College system is recognized nationally as one of the strongest in the country

Although Mississippi is making great strides in education, we still suffer from the lingering effects of inadequate educational investment prior to the Education Reform Act of 1982. Mississippi continues to lag behind the rest of the nation in a number of key areas:

- Adult degree attainment remains below national averages at every level.
- Mississippi ranks highest in the nation in the percentage of adults with no high school degree.
- Mississippi has the nation's highest illiteracy rate: 30 percent of Mississippians cannot function at a 7th or 8th grade level.

Each of these statistics outlines a challenge to economic development. Attacking these weaknesses and building upon our growing strengths are goals that will be addressed by the Group's recommendations.

Stories from other states

Other states have already had measurable and important success in confronting these issues. Oregon and Oklahoma's stories point us towards the kinds of solutions that Mississippi needs to change its economic future.

Innovative Ideas in Oregon

In 2002, the Oregon Council on Knowledge and Economic Development (OCKED) developed a set of strategies designed to make the state more competitive in today's knowledge-based economy. According to the 2002 New Economy Index, Oregon ranks in the middle of all states on most measures that indicate a state's competitiveness in the new economic environment. OCKED has recommended that Oregon adopt the goal of achieving a top 10 rating.

Guided by the notion that ideas and innovation are the keys to Oregon's economic success, the Council made recommendations in areas critical to economic development. Emphasis was placed on programs that promise to generate high rates of return on investment. Following is a summary of Council recommendations relevant to the role of higher education in the economic development process.

Research and technology transfer. Oregon's goal in this area is to "dramatically increase high-quality research and development efforts that will create new products, services and businesses leading to high-paying jobs and sustained economic growth for Oregon." Toward this goal, the plan calls for the establishment of Signature Research Centers (similar to the Centers of Excellence in Mississippi). These centers would translate research into commercial applications and promote technology transfer between universities and industry. Oregon plans to establish at least three Signature Research Centers by 2010.

Knowledge-based workforce development. Oregon employs an innovative strategy that approaches the issues of incumbent workers, higher education and K-12 as an integrated system. In keeping with their integrated approach, Oregon emphasizes promoting knowledge-based skills from the earliest stages in the K-12 system. The Council's priorities, in order, are to:

1. Immediately enhance the skill level of the current workforce.
2. Support higher education programs that will lead to more graduates with degrees in technology, engineering, sciences and business programs.
3. Increase the number of students prepared to enter science and technology fields, as well as the number of teachers who are proficient in the application of technology in the classroom.

Capital and business formation. The Council recommended increasing the amount of pre-seed, seed and institutional venture capital available to emerging businesses, particularly those in the technology and bioscience sectors. They also recommended developing programs and incentives to increase the depth of management expertise and attract and retain top management talent.

The Council concluded their report with a general recommendation that the work of the Oregon Council for Knowledge and Economic Development continue until 2008-- a recommendation that underscores its commitment to generating sustained economic growth and enhanced global competitiveness.

Oklahoma: Investing in Intellectual Capital

Due to a heavy reliance on oil and agriculture, Oklahoma has suffered in recent decades from patterns of uneven economic growth. Today, Oklahoma is seeking to diversify its economy, partially through development in the high-technology sector.

In 1997, Oklahoma began making coordinated efforts to improve its performance in the knowledge-based economy. Since then, it has implemented recommendations made by the *Citizens' Commission on the Future of Oklahoma Higher Education and Technology 2000*. The

New Economy Index rated Oklahoma 34th among all states in 2002, up significantly from 40th in 1999. This would indicate that Oklahoma's efforts are already showing signs of progress.

In a work plan from January 2001 – December 2002, the State Regents outlined a number of priorities for implementation. The work plan items defined by the Regents as their top three priorities are as follows:

1. *Brain Gain 2010*. In recent years, a program called *Brain Gain 2010* has been a primary focus of Oklahoma's higher education agenda. Announced by the State Regents in 1999, *Brain Gain 2010* is a strategy to increase the state's economic standing by enhancing the state's intellectual capital. The program focuses on better preparation of both traditional and adult students and seeks to increase the number of Oklahomans with a college degree to above the national average. *Brain Gain 2010* priorities include:

- Increase academic support for K-12 students and teachers through the use of mentors, tutors and enhanced professional development for teachers.
- Focus on K-12 math curriculum to improve low performance.
- Expand concurrent enrollment opportunities for high school students who can benefit from early college attendance.
- Review and strengthen system policies and work with institutions to enhance student services, academic practices and curriculum. Emphasis on web-based learning.
- Certify select Oklahoma institutions as Adult Learner Friendly Institutions (ALFI).

2. *Economic development*. The work plan identified several items that the Regents considered priority projects within the realm of economic development:

- Improve response time to business and industry and provide higher education courses and services in a format that will meet industry and adult learner needs.
- Develop courses and training geared toward specific industry needs.
- Identify high-growth occupational areas and create policy and incentives designed to increase graduates in these targeted areas.
- Establish a business and industry advisory council.
- Make competitive economic development grants of one-time funds to institutions for quick program and service start-up.

3. *Tuition / Financial Aid*. The Regents recommended restructuring Oklahoma tuition and financial aid with a primary objective of increasing the number of college graduates in the state. Enhancing higher education revenue and quality were also listed as objectives.

Oklahoma's EDGE: Economic Development Generating Excellence.

In 2003, Oklahoma took another major step forward when Governor Brad Henry charged the State System of Higher Education to work with the Department of Commerce and Tourism in leading the creation of "Oklahoma's EDGE: Economic Development Generating Excellence." This partnership of higher education and the Department of Commerce unites key leaders in government, business and labor / civic groups to analyze Oklahoma's economy, develop recommendations for creative economic strategies and build widespread consensus for action.

RECOMMENDATIONS

Mississippi's economy relies upon a strong partnership between higher education, the Legislature and state agencies. Each entity has its own unique role in supporting the state's economy. Essentially, higher education performs two critical roles in this arena—developing ideas and developing individuals—while state funding and agencies provide the infrastructure on which these roles rely.

The partnership between higher education and the state has proven successful in building strong community colleges and universities, bringing expertise that helped increase Mississippi's capacity for manufacturing and utility of our natural resources. For example, Mississippi ranks 27th in the nation in educational level of the manufacturing workforce, a direct result of efforts involving teamwork among higher education, the legislature and state agencies.

Without a doubt, this partnership has had a powerful impact in the areas upon which we have focused our efforts in the past. But as economic conditions have changed, so must our focus. Just as this partnership helped establish Mississippi as a viable force in manufacturing, we must now work together to lead the state into a competitive role in the New Economy. With this in mind, the recommendations that follow are intended to maximize our improvement according to such important measures as the New Economy Index.

The McCoy Working Group has investigated the means to most effectively orient this partnership towards the challenges of our changing future. The recommendations for the allocation and direction of our resources are organized into three categories: *Ideas*, *Individuals*, and *Infrastructure*. The expansion of our innovation capacity must be fostered by a culture of ideas, the creation of knowledge jobs requires an emphasis on individuals, and the advancement of a digital economy depends upon a progressive and flexible infrastructure.

Individuals.

Our greatest assets are our people. If we are to compete in today's economy, these assets must be developed to their full potential. Mississippi's commitment to building a knowledge-based workforce must focus on lifelong learning, beginning in early childhood and continuing throughout the adult years. The overriding goals of the group's recommendations in this area are to keep students in school through college graduation, to successfully recruit faculty and students in areas of critical need, and to provide real-life career options in high-paying fields for traditional and non-traditional students.

Fund Strategic Scholarships to Recruit Students to Critical Areas (subject and geography)

The goal of this recommendation is to use scholarships to increase the number and quality of teachers, nurses and social workers, then place them in areas of critical need and retain them. These strategic scholarships would serve a dual purpose. First, they would provide educational opportunities for students. Second, they would address critical issues facing the state, including the teacher shortage, the nursing shortage and the high school dropout rate.

Teacher shortages could be addressed through the recruitment of non-traditional adult students to careers in education by providing scholarships and rewards for teachers in high-impact subject areas and who go to critical geographic areas of the state. Using nursing education scholarships to attract and retain high-quality nursing students would alleviate nursing shortages. High school graduation and college entry rates could be improved by providing scholarships to social workers who would work in Mississippi public schools in key areas. Recipients of all such scholarships would be required to work in the state for a specified period time after graduation.

Offer Incentives for Professionals to Remain in Mississippi Communities

The group recommends that Mississippi offer loan and scholarship incentives for professionals to remain in Mississippi, especially in underserved rural communities. A key goal of this recommendation is to eliminate shortages of professionals – particularly healthcare professionals – in underserved areas of the state over a ten-year period. In addition to keeping many of Mississippi's brightest young minds in the state, providing an increased professional presence in these rural communities would lead to increased success in the recruitment of out-of-state business and industry. Examples include tax incentives for doctors in rural/underserved communities and loan forgiveness for nurses.

Recommendations

- Fund Strategic Scholarships to Recruit Students to Critical Areas (subject and geography)
- Offer Incentives for Professionals to Remain in Mississippi Communities
- Provide Stable Funding and Structure for Enhancing the Incumbent Workforce Basic Employability and Advanced Skills
- Develop and Fund Creative Programs to Combat Adult Illiteracy
- Provide Opportunities for Career Changes and Career Experiences for Traditional and Non-Traditional Students
- Develop a Five-Year Plan to Bring Salaries for Higher Education (IHL And CC) Faculty and Professional Staff to Nationally Competitive Levels

Provide Stable Funding and Structure for Enhancing Incumbent Workforce Skills Development (Improve Basic Employability and Advanced Skills of the Incumbent Workforce; Consolidate Workforce Development Entities)

With the goal of improving the employment skills of the incumbent workforce, the group recommends stable funding for Mississippi's universities and community colleges in programs that provide essential workforce development services and training to upgrade the basic employability skills of Mississippi's workforce. This includes providing advanced skills training, as well as upgrading and maintaining contemporary equipment and skilled instructors for this purpose. Additionally, funding should be provided for innovative approaches to increasing access to on-line and community-based training programs. For example, providing 'on-line scholarships' of hardware, software, and Internet access to those interested in improving their skills would be an invaluable beginning. Such training would give the state's incumbent workforce a convenient, accessible source for improving their employment skills, resulting in better employment opportunities and higher earning potential.

Develop and Fund Creative Programs to Combat Adult Illiteracy

Adult illiteracy is one of the greatest barriers to economic development in Mississippi. The group recommends that Mississippi address the workforce literacy problem in two primary ways: through workforce literacy skills programs offered at community colleges and through the establishment of Regional Centers for Literacy & Learning. These comprehensive programs would increase the literacy rate statewide, creating a workforce better prepared to enter higher-paying jobs, and reducing dollars lost due to low productivity, as well as errors and accidents in the workplace.

Provide Opportunities for Career Changes and Career Experiences for Traditional and Non-Traditional Students

The recommendation is to develop internship programs for areas of critical need in which students can work in a workplace environment that assimilates career goals and allows students to gain real experience in their chosen careers. In addition to better preparing students to enter the workforce, these programs would strengthen the bond between higher education and business, leading to higher in-state placement rates of graduating seniors.

Develop A 5-Year Plan to Bring Salaries for Higher Education (IHL and CC) Faculty and Professional Staff to Nationally Competitive Levels

Mississippi needs high-quality faculty who can teach professionals, educate educators, help create entrepreneurs and attract and challenge high-quality students on the graduate and undergraduate levels.

To attract and keep such faculty, Mississippi must make a commitment to pay competitive salaries and providing stable funding for institutional infrastructure. With this goal in mind, the group recommends that the legislature provide funding to increase salaries for professional schools within the IHLs, IHLs, and community colleges. This may include providing matching funds for institutional resources for endowed professorships and stable funding for professional schools, universities, and community colleges.

In the years ahead, Mississippi's community colleges will play an increasingly important role in workforce development. For this reason, it is vital that community colleges be able to attract and retain qualified teachers and instructors. To achieve this goal, the group recommends that the legislature appropriate funds sufficient to achieve the "mid-point" salary range for all community colleges. This places community college salaries directly between salaries of K-12 schools and universities. This salary increase will encourage more educational professionals to pursue careers in community colleges, resulting in a stronger community system – and a stronger workforce – throughout the state.

Ideas.

Ideas become research. Research leads to knowledge, technologies, products and services that can lead to high-tech companies and job opportunities for Mississippians. Thus, Mississippi's success in the New Economy depends greatly on its capacity for research.

The goal of the following recommendations is to stimulate research, creating more research outcomes that can ultimately form the foundation for future high-tech, high-paying job opportunities, either through research centers of excellence in academic institutions or via development of new companies based on research outcomes or via the increased competitiveness of existing industries. These research and development efforts can be expected to lead to sustained economic growth as a result of increases in new products, services, business and jobs.

Research, which does not have economic development as a primary goal, will not be eligible for using the state resources.

Provide Competitive Graduate Stipends & Fellowship Programs to Attract Diverse and High-Quality Graduate Student Researchers

Outstanding graduate students are at the core of a university's intellectual assets. To ensure that Mississippi is able to recruit outstanding graduate students, the group recommends providing competitive graduate stipends. This should include efforts to increase the number of doctoral degrees attained by Mississippi college graduates who are low income, first generation students and from groups underrepresented in graduate education. This would result in an increased ability to recruit faculty members, greater potential for developing data sets required for competitive funding, better ability to train exemplary educators, increased placement of graduate students in Mississippi and greater diversity in higher education. Additionally, more graduates in the state could translate into industry clusters developed by graduating students. Another important outcome is the powerful potential for developing innovation, which would lead to increased licensing of technology.

Recommendations

- Provide Competitive Graduate Stipends & Fellowship Programs to Attract Diverse and High-Quality Graduate Student Researchers
- Provide Funds to Facilitate the Development of Innovative Ways of Capitalizing on our Unique Strengths and Natural Resources
- Provide Capital for Encouraging Entrepreneurship via New MURA Companies and Create Regional Research Parks
- Provide Matching Funds for Endowed Professorships to Attract Creative Faculty in Areas of Need or Anticipated Economic Growth
- Identify and Implement Legislative & Policy Changes to Promote the Development of International Collaborations and Enhance International Competitiveness
- Implement Stable Funds to Stimulate Research and Enable Effective Technology Transfer

Provide Funds to Facilitate Development of Innovative Ways to Capitalize on Unique Strengths and Natural Resources (e.g., land, water, timber)

Mississippi has much unique strength that has yet to be fully developed and marketed to its full potential. Currently, agriculture is the state's largest industry. Increased emphasis on research and development leading to new products and giving added value to current products offers vast opportunities for expanding jobs and creating economic growth. Both universities and community colleges can be vital participants in developing these assets through relevant strategies and innovative objectives. State agencies dealing directly with the state's agricultural and natural resources should be given continued and expanded funding to further support and develop these identified opportunities. Present programs authorized by the legislature such as the Make Mine Mississippi marketing promotional program and the Land, Water and Timber Resources Board are meaningful and innovative means for developing these resources and support the development of Mississippi products. In addition, our state's wildlife and fisheries resources, as well as our tourism industry, offer increasing opportunities to capitalize on personal income spent on recreation and entertainment.

Provide Capital for Encouraging Entrepreneurship Via New MURA Companies and Create Regional Research Parks

Mississippi should allocate investment capital to support new product development and business start-ups for MURA (Mississippi University Research Authority) companies. For some time, MURA has provided a procedural and ethical framework to allow researchers to extend their work into the private sector. This program would increase MURA company development and build a significant funding stream to universities through royalties and licensing fees. In addition to attracting entrepreneurial faculty to state universities, it would provide employment opportunities to students and graduates, keeping Mississippi's intellectual capital in Mississippi.

To take advantage of its regional economic diversity, Mississippi should develop regional research parks that would be decisively oriented toward economic development. These research parks would be collaborative efforts among universities, community colleges and county and municipal governments, and should provide opportunities to set up incubators and think tanks and to focus the intellectual capacity of scientists and entrepreneurs on product development.

Provide Matching Funds for Endowed Professorships to Attract Creative Faculty in Areas of Need or Anticipated Growth

The presence of nationally recognized leaders in key areas of professional education can do more than enhance a university's image. It can also lead to the development of new technologies and industry for the state.

For this reason, Mississippi should provide funding for endowed positions for key faculty members specializing in areas that could lead to economic development results for Mississippi. By employing a program based on matching funds, Mississippi could gain valuable support and partnership from the private sector. Mississippi should seek to reach a goal of fifty endowed professorships over a 10-year period, adding five such positions per year.

Identify and Implement Legislative and Policy Changes to Promote the Development of International Collaborations and Enhance International Competitiveness

This is a recommendation that can improve higher education at no cost to the state.

Currently, no Mississippi law authorizes the use of arbitration to resolve disputes. This severely limits Mississippi universities' abilities to enter into contracts with international agencies and organizations, as this method of conflicts is commonly required in contract language. The group recommends new legislation allowing international arbitration to resolve contract disputes instead of in Mississippi courts. This would result in increased resources for researchers and universities, potentially leading to an increase in the number and dollar value of contracts for research, as well as the number and dollar value of licensing agreements for products of research.

Policy change is also needed in the area of international travel. Current policy requires that all travel outside of the 48 contiguous states be approved by the IHL board. This policy was developed in a time when such travel was considered extraordinary. In today's academic environment, such travel is often a necessary component of developing international collaborations and enhancing competitiveness.

Implement Stable Funds to Stimulate Research and Enable Effective Technology Transfer

Stable funding is critical to Mississippi's research capacity. The group strongly recommends implementing stable, annual funds for research that could be used to stimulate research and enhance capacity at Mississippi's universities.

These funds would be allocated according to the strengths, needs, and opportunities at each institution and how they relate to the state's economic development focus. For example, each of the research universities already has intellectual properties in various stages of development. A portion of the funds could be used to support immediate, aggressive value-added research and development of those technologies. Also, funds could be used to support centers of excellence in areas of existing strength at all of the institutions of higher learning in the state, such as *biotechnology, composites, bioenergy, automated identification technology, childhood education* and others. For more long-term benefit, the funds could also be used to recruit and retain outstanding researchers, support graduate research assistants and invest in new instrumentation, major equipment needs and facility upgrades. Funding would be equally important in areas of emerging unique strengths or growth opportunities such as *nanotechnology, information technology, cultural tourism, governmental training, hospitality management, culinary arts, and historic preservation*.

In addition to the obvious benefit of increasing the capacity of developing innovation and entrepreneurial growth, stimulating research would impact the Mississippi economy through increased employment (especially high-tech, knowledge-based jobs), more high-technology companies locating in Mississippi, more spin-off companies formed directly from research and increased funding for research from federal and industry sources (new money into the state). Mississippi could expect to see an increase in the number of license agreements executed and actively maintained, as well as an increase in the number of patents and patent applications. This would lead to an increase in revenue from the licensing of patents and other intellectual property. Above all, Mississippi could expect to see real economic growth in the form of new technology companies and production industries resulting from effective technology transfer.

Infrastructure.

To compete in the New Economy, it is imperative that we have an information infrastructure that is not merely adequate, but truly competitive with the rest of the nation and the world. Our future success depends on it. Mississippi must be prepared to keep pace with the accelerated rate of change that technology will bring in the years to come. This begins by laying a solid foundation today, with a firm commitment to infrastructure at every level.

Develop and Implement a Program to Upgrade and Maintain Contemporary Equipment and Infrastructure for Post-secondary Career and Technical Education

The ever-expanding demands on educational technology require constant infrastructure maintenance and upgrades. These demands will certainly increase in the years to come.

Mississippi's community colleges must receive adequate annual funding to support necessary hardware and software upgrades, as well as to employ the personnel needed to maintain viable educational technology. This will help Mississippi's community colleges remain competitive and better prepare students for a technology driven job market. Also, it will provide educational access to members of the community who are unable to access other educational modes.

Expand and Upgrade Connectivity Infrastructure for Community Colleges, Institutions of Higher Learning (IHL) and Rural Communities

In order to keep pace with technology, Mississippi must fund ongoing technology infrastructure expansions and upgrades at its IHLs. In the immediate future, Mississippi should make a commitment to fund a statewide technology infrastructure upgrade to accommodate Internet 2 and its upcoming developments. This would give Mississippi greater potential for securing research work requiring technology and would help the state maintain a competitive position for external funding opportunities.

Recommendations

- Develop and Implement a Program to Upgrade and Maintain Contemporary Equipment and Infrastructure for Post-secondary Career & Technical Education
- Expand and Upgrade Connectivity Infrastructure for Community Colleges, IHLs and Rural Communities
- Develop and Implement a Program to Expand and Upgrade Connectivity to Rural Communities
- Develop and Implement a Program for Enhancing Research Facilities and Major Equipment
- Develop and Implement Innovative Programs to Enhance Success and Competitiveness of Mississippi Businesses

Develop and Implement a Program to Expand and Upgrade Connectivity to Rural Communities

Designed to eliminate the “digital divide,” this proposed program would provide affordable high-speed (broadband) Internet services to underserved rural communities throughout Mississippi. It would be a collaborative effort of local government, institutions of higher learning and the private sector.

The program would give disadvantaged rural residents the tools necessary to utilize Web-based e-learning technologies, including an Internet Training Center that would provide an introduction to computer hardware and software. This would bring powerful learning opportunities that would soon translate into economic opportunities. These include the creation of a more skilled workforce with increased employment options, increased marketing potential of rural communities to prospective businesses, support for entrepreneurial start-ups and a stronger, more diversified economic base.

Develop and Implement a Program for Enhancing Research Facilities and Major Equipment

As research plays a greater role in the state's economy, the need to maintain and upgrade research facilities and equipment will take on increased importance. For this reason, the group recommends a program centered around a stable annual fund for which any institution in the state could submit proposals for buildings and major instrumentation needs.

This would result in greater ability to secure competitive funding, higher success rates for proposals, increased licensing of technology and more total research dollars. Additionally, it would strengthen the state's business and industry as increased research capacity leads to the transfer of technology, information, innovation and ideas.

Develop and Implement Innovative Programs to Enhance Success and Competitiveness of Mississippi Businesses

Mississippi's universities and community colleges offer immeasurable resources, such as the Small Business Development Center, that could be of benefit to firms in the private sector, as well as to communities and municipalities. The recommendation is to support innovative programs in higher education institutions that will direct institutional resources and expertise toward improving success and competitiveness.

Several key areas have been identified. For communities, Mississippi should provide support and expertise to increase the presence of community and economic development professionals in communities throughout the state. Additionally, Mississippi should create "learning communities" that link communities and schools to improve learning in rural areas.

In the private sector, the group recommends developing programs to promote women's entrepreneurship, assist with corporate education and business research, provide back office support, enhance industrial extension services and apply innovation to increase the competitiveness of key existing industries, such as the furniture industry.

CONCLUSION

While the expectations that society has for our post-secondary education system are quite broad, this report has sought to answer how investment in higher education in Mississippi can support the continued development of a *healthy state economy* in the future. As such, these recommendations must be evaluated based on the economic value returned to the state.

In order to achieve the goal of economic development throughout the state, this report suggests there are four strategic areas where higher education can and must have a lasting impact. Specifically, higher education must make powerful contributions in: (1) workforce development, (2) partnerships between higher education and industry, (3) the transfer of ideas and technologies from research laboratories to commercial applications, and (4) building communities and enhancing overall quality of life.

A successful and healthy state economy will depend on a robust workforce. In order to develop a workforce to meet anticipated employer needs in the future, Mississippi must be able to train and transition its current workforce while cultivating a bright, skilled and flexible future workforce. The state of Mississippi could accomplish this through actions designed to enhance the incumbent workforce's skills and through funding scholarships to recruit students to critical subject and geographic areas.

Creating an environment that is conducive to the generation and transfer of ideas and technologies from research to commercial applications will attract entrepreneurs who will, in turn, facilitate the creation of net new jobs. In order to concentrate research on areas where there are clear and present opportunities for the creation of future Mississippi entrepreneurs, the state of Mississippi should focus on attracting diverse and high-quality graduate student researchers, providing capital for new companies and regional research parks, stimulating research, and enabling effective technology transfer.

More than ever before, quality of life issues are taken into consideration when businesses evaluate potential locations. With less reliance on physical infrastructure, businesses are increasingly seeking locations that can attract the best and brightest employees. Building stronger and more self-sufficient communities throughout the state will offer opportunities and quality of life improvements necessary to attract and keep our finest citizens. This can be achieved through efforts such as offering incentives for professionals to remain in Mississippi communities, expanding and upgrading connectivity to rural communities, and developing innovative ways to capitalize on our unique strengths and natural resources.

Above all, this report recognizes that a strong partnership between industry and higher education is essential to "focus" scarce resources on specific clusters or industries that lend themselves to the greatest promise for economic growth in the years ahead.

APPENDIX

McCoy Working Group Submission Template

Focus Area: List one of the six (6) focus areas to which the recommendation applies.

Recommendation: Describe in detail the recommended initiative.

Required Funding / Investment: List the desired amount of funding, including any supporting information or rationale.

Goals: Identify the goal for the recommendation.

Implementation: Describe how the recommendation would be implemented, including public policy changes and/or legislative or regulatory action.

Anticipated Outcomes: List anticipated outcomes as a direct or indirect result of implementation of the recommendation. Be sure to include support statements for why you believe this to be true.

For example:

- Attract new companies to operate in Mississippi, or
- Improve retention of graduating students from Mississippi colleges and universities

Metrics: For each recommendation, identify what metrics could be used to measure success if the recommendation is implemented. This should include a baseline statistic, where possible.

For example:

- Survey of new companies to identify reason for locating in the state of Mississippi, or
- Measure total number and percentage of graduating students who remain in Mississippi for X years (currently 50,000 or 37 percent).

Sponsors, agents and targets: Identify the groups or individuals you believe can legitimize the change, implement the change and react to the change.

Constituencies consulted: List the key constituencies you consulted throughout the development of the recommendation.

Acknowledgements: List the working group members who developed the recommendation.

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