

MISSISSIPPI SCIENCE AND TECHNOLOGY PLAN



MISSISSIPPI STATE
UNIVERSITY



THE UNIVERSITY OF
MISSISSIPPI



THE UNIVERSITY OF
SOUTHERN
MISSISSIPPI



Mississippi Research Consortium



<http://www.mississippiresearch.org/>

Jackson State University | Mississippi State University
University of Mississippi | University of Southern Mississippi

MISSISSIPPI SCIENCE AND TECHNOLOGY PLAN

The Mississippi Science and Technology Plan will improve quality of life, create opportunities for economic development, and advance education by building a stronger foundation for research, innovation, and Science, Technology, Engineering, and Mathematics (STEM) education in the state. The Mississippi Science and Technology Plan will build on Mississippi's competitive advantages, leverage resources, create jobs, and diversify the economy. Intended to provide a shared framework for discussions about how to move Mississippi forward, the plan focuses on infrastructure, workforce, and economic development. This plan works from the fundamental tenet that foundational, enabling, and translational research by higher education institutions must play a critical role in moving Mississippi forward economically and socially. The plan also establishes priorities from which the state can leverage its existing resources into strategic investments that improve quality-of-life for all Mississippians.

This plan positions Mississippi and its research universities and industries to compete nationally and internationally through science and technology development, particularly in core priority areas such as energy, computational sciences, health, agriculture and natural resources, our Gulf Coast resources, and advanced manufacturing. It lays the foundation for development of new industries and enhances the competitiveness of existing industries in the state.



GOAL 1 | ENHANCE MISSISSIPPI'S SCIENCE AND TECHNOLOGY INFRASTRUCTURE



Fundamental to all other science and technology efforts is our investment in infrastructure. This includes investment in laboratories and analytical facilities, high-speed networks and computational assets, and human capital that can enhance current research efforts and grow Mississippi's national research capacity and reputation. Concomitant with these investments is the need to leverage them for economic development and industrial partnerships. The need for a strong S&T infrastructure is imperative at every level, and is critical to both state and national economic growth and security. This infrastructure should and will support every area of science and engineering within Mississippi universities and community colleges.

STRATEGIES ASSOCIATED WITH THIS GOAL ARE:



- Invest in university research, development and commercialization*
- Develop tools to stimulate private sector R&D spending*
- Develop a program to attract world-class researchers to Mississippi in key clusters based on state S&T priority areas
- Develop programs to foster stronger university -industry partnerships

- Develop an online science and technology directory through the Mississippi Research Consortium
- Support relevant Mississippi organizations that promote science and technology
- Enhance Mississippi's communications, transportation, and distribution/logistics infrastructures
- Increase access to and use of broadband infrastructure to promote high-tech job growth and to enable more Mississippians to participate as first-class citizens in an increasingly knowledge-based global economy
- Develop coordinated policies at the state level to enhance the State's energy infrastructure and to support an environmentally responsible and reliable energy portfolio
- Support and implement the goals of previous statewide strategic studies
- Support program development and invest in infrastructure at community colleges
- Identify, invest in, and encourage the use of new technologies that enhance efficiencies and provide cost savings*

GOAL 2 | DEVELOP AND MAINTAIN A MORE ROBUST SCIENCE AND TECHNOLOGY WORKFORCE

Excellence in providing educational opportunity to the citizens of Mississippi is a cornerstone to attracting and retaining high-tech jobs and improving economic status of our citizens. Encouraging and supporting STEM programs is essential to growing and retaining a STEM-educated workforce attractive to employers considering Mississippi-based operations and high-wage job creations. Longitudinal data systems that develop, implement, and make available educational information from pre-kindergarten through the current workforce are needed. Specifically, systems designed to align the efforts of universities, community colleges, K-12 schools, and early childhood education in terms of academic standards and career expectations are supportive of this objective. Investment in education is not enough to satisfy this objective - investment coupled with baseline studies, outcome assessments, metrics that gauge progress, and retention of a science and technology workforce are necessary.



STRATEGIES FOR THIS GOAL INCLUDE:

- Support the Education Achievement Council in its efforts to increase the number of Associate and Bachelor degree holders*
- Develop incentives to attract and retain highly educated workers, with particular emphasis on STEM fields*
- Increase the STEM workforce long-term through investment in K-20 education
- Train, mentor and retain better teachers with appropriate science and technology skills
- Promote academic entrepreneurship programs
- Promote collaboration between community colleges and 4-year institutions
- Provide career awareness and assistance for STEM vocations important to Mississippi's technology-based industries
- Prepare Mississippi students to transition to a high-technology workforce
- Focus lifelong learning programs around relevant and projected workforce needs related to science and technology
- Increase digital and scientific literacy among the general public
- Ensure that post-secondary institutions prepare



graduates to be successful in a range of possible careers, including those with high value for the labor market and those that will positively impact society in Mississippi and the world

- Increase the number of Mississippians contributing to the S&T economy by creating programs to tap underdeveloped human capital among diverse groups (especially women and minorities) currently underrepresented in STEM degree completions and the STEM workforce.

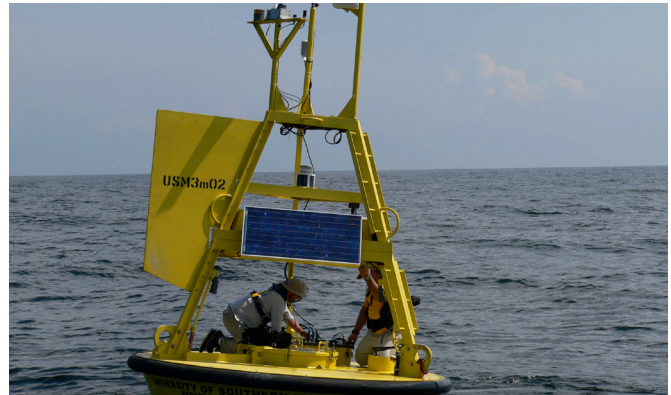
GOAL 3 | DIVERSIFY AND IMPROVE MISSISSIPPI'S SCIENCE- AND TECHNOLOGY-BASED ECONOMY

Investing and building capacity in technology development, translational research, and transfer of technology into business opportunities will give Mississippi a strategic competitive advantage when attracting industry to our state and in supporting existing high-technology companies already located within Mississippi. Working partnerships between state agencies, academic institutions, and industry partners must be supported and encouraged to promote the growth of high-technology programs.

STRATEGIES SUPPORTING THIS GOAL INCLUDE:

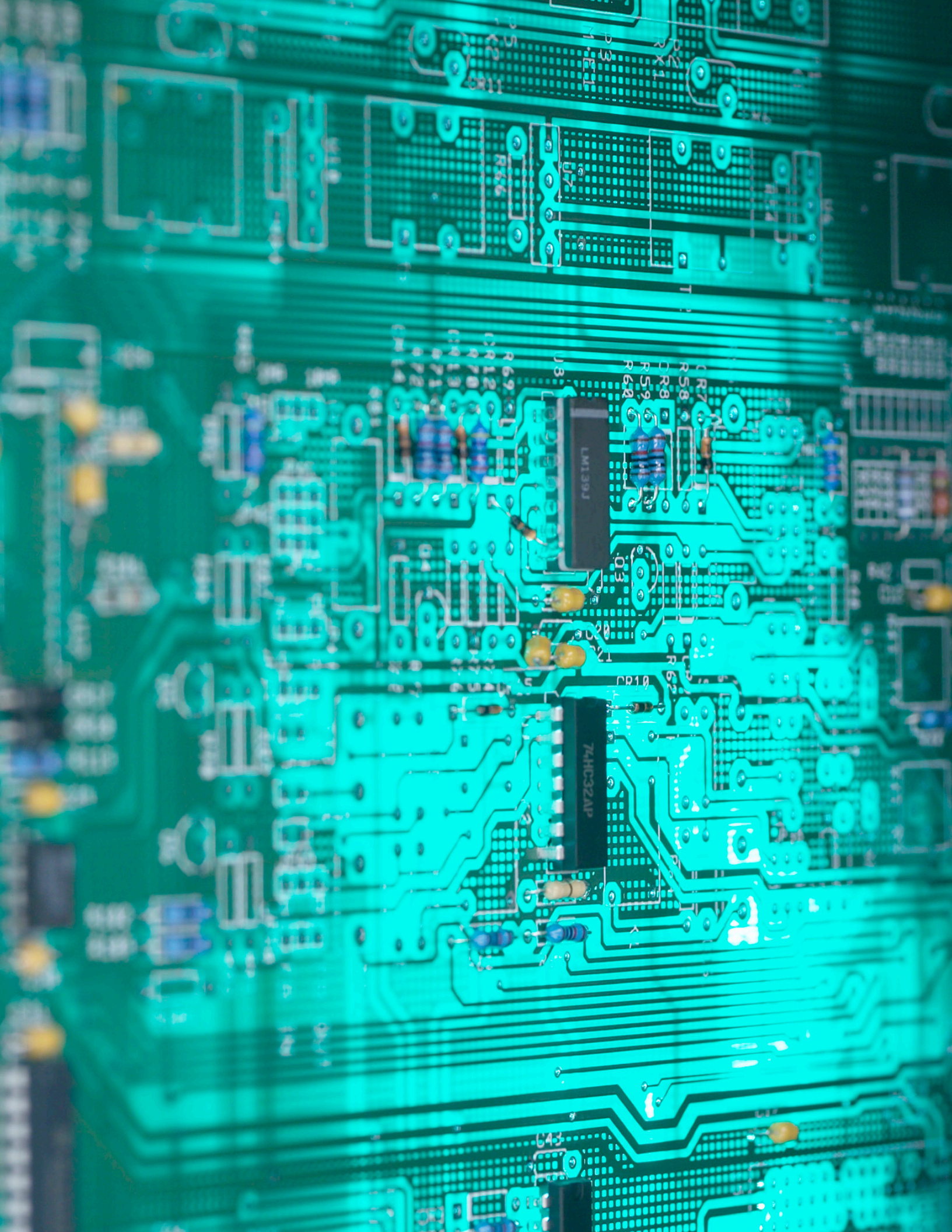


- Target and attract high-technology companies to the state
- Capitalize on the science and technology expertise at Mississippi research institutions to develop industry growth opportunities with potential focus on areas such as biomedical/health care, energy, environmental sciences, high-performance computing, marine sciences, and materials science
- Support research and development that aligns with targeted industries identified by the Mississippi Development Authority
- Support effective technology transfer and capital accessibility programs to help commercialize innovations and expand university-industry partnerships
- Enhance business incubators affiliated with research universities
- Promote innovation-based economic development
- Nurture strong alliances between development and technology business associations and regional economic development organizations



- Support partnerships and alignment with the science and technology-related goals of states within the southern and southeastern regions
- Promote the health care industry as an economic driver*
- Capitalize upon the unique strengths in Mississippi, including energy, computational sciences, health, agriculture and natural resources, our Gulf Coast resources, and advanced manufacturing
- Recognize and promote opportunities that result from the growth and expansion of the technology-driven economy, engaging all available resources to assist in focusing these efforts*

*Also a recommendation of the 2011 Blueprint Mississippi



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