Michigan State University
2015–16 Appropriation Request

As the nation’s pioneer land-grant university, Michigan State University embraces its special mission of world-class instruction, research, and public service, aimed at growing the value of an MSU degree for our students.

Today’s higher education marketplace focuses ever more tightly on value, an effect demonstrated every year by MSU’s increasing applications for admissions and by post-graduation outcomes and employer validation. MSU is poised to maintain and expand on its land-grant tradition, bringing the latest in science into practice across the state and around the world as it moves from land-grant to world-grant in its posture. Consistently ranked as a top 100 global university, MSU is a leading edge, world-class university committed to Michigan with exemplary undergraduate and graduate education programs.

Having confronted economic challenges without compromising its values and standards, MSU now is poised to seize opportunities presented by the evolving operating environment. President Lou Anna K. Simon’s Boldness by Design initiative, framed in 2005, aligned MSU’s collective work toward five imperatives, each founded on the institution’s core values of quality, inclusiveness and connectivity.

Today, university leaders are building the framework to be Bolder by Design, challenging all of MSU to once again lead the transformation of higher education and, as part of the process, adding a sixth imperative: becoming a model high-performance organization. Bolder by Design establishes the foundation for MSU to continue its role as the world’s preeminent land-grant university.

MSU is a vital engine of Michigan’s prosperity, leaving an annual $5.0 billion economic footprint that includes spending nearly $470 million each year with state businesses. MSU has a presence in every Michigan County, training physicians at over 35 partner hospitals, operating 14 AgBio research centers from Benton Harbor to Saginaw to Escanaba. After graduation, Spartans become leaders, entrepreneurs, volunteers, and contributors to their communities, fulfilling the intent of our 19th-century founders. Currently, over 230,000 alumni reside in the state of Michigan. Additionally, Michigan State University has positioned itself to provide the state with the type of graduates’ employers demand and are necessary to drive economic growth in the 21st century. In fact, over the last ten years STEM-based student credit hours have increased by approximately 29 percent, while non-STEM credit hours have decreased by 2.3 percent over the same period.
It is an institution founded on a dynamic balance between the theoretical and the practical, the discovery and the dissemination, the knowing and the being. Standing among the 60 great research institutions comprising the Association of American Universities, Michigan State is yet differentiated in its fidelity to each of its core land-grant values: quality, inclusiveness and connectivity. They are tightly linked and demonstrated in myriad ways, from the university’s roster of top scholars and programs to its diverse campus community to its many forms of local, regional and international engagement.

The world’s greatest challenges lie where MSU always has been a research and practice leader, and these are where we will increasingly focus our vast capabilities:

- food systems, safety and plant science;
- water quality, security and management;
- energy and matter, including nuclear physics, advanced materials and bioenergy;
- sustainability, whether environmental, economic or societal;
- health, from zoonotic disease to family medicine and translational research; and
- renewable resources, including agricultural products, biomass and energy.

With MSU’s broad and interdisciplinary capabilities, these areas involve not just the science and discovery necessary to advance cutting-edge knowledge, but innovative application through our expertise in outreach and engagement, communications, value chains, social and political sciences and other competencies.

### Strategic commitment

Within the context of Bolder By Design, planning includes both reinforcement of long term principles and testing selected innovations.

- Sustain MSU’s value proposition of programmatic excellence and opportunity for Michigan residents
- Expand economic impact through both undergraduate and graduate programming including significant economic multipliers, spurring future state growth
- Advance the common global good as one of the world’s top research universities continuing to build on MSU’s pioneer land-grant commitment to find solutions to the most critical challenges facing individuals and troubled communities in Michigan and beyond
Further education and research across STEM disciplines including science, technology, mathematics and engineering, sustaining broad academic excellence at both the undergraduate and graduate levels

- Within academic programs, integrate technology and teaching/learning, support interdisciplinary study, close graduation gap, and foster a healthy campus

- Target MSU first time undergraduate enrollment at 7,700 for Fall 2015 to optimize instructional faculty and facility usage

- Strengthen University initiatives including plant sciences, engineering disciplines including biomedical engineering, computational sciences emphasizing existing strengths in biology, food and food chain security, population and community health, the environment including food, water, and

- Keep MSU faculty at the leading edge of teaching and research while working with businesses and communities across the state to innovate and develop entrepreneurial environments that bolster the Michigan economy and help create sustainable prosperity

- Partner with numerous state and regional universities and community colleges

- Respond to changing financial circumstances with ongoing improvements in efficiency and effectiveness throughout the institution, including constraining personnel costs

- Assess performance across the institution against relevant benchmarks and metrics

**MSU funding**

MSU requests recurring FY15 appropriations support for the general fund, MSU AgBioResearch (MABR), and MSU Extension (MSUE) sufficient to sustain FY15 programming levels and invest in Michigan’s economic future. The University operates within the context of long-term underfunding and growing enrollment demand, particularly within high-cost disciplines. It is essential that stable, predictable funding be provided to maintain higher quality academic programs and opportunity for Michigan students and to enhance the strategic strengths of MABR and MSUE.

State reductions in higher education appropriations through FY15 resulted in reductions to MSU appropriations of approximately 19 percent since FY02, representing a cumulative loss of over $600 million in operational resources over 13 years. Over the last ten years through FY14, Michigan ranked 50th among the states in changes to appropriations. For FY15, about 22 percent of general fund revenues are budgeted from appropriations, approximately 70 percent from tuition and fees, and the remainder composed primarily of investment income and indirect cost recovery. This compares to
FY05 when about 40 percent was budgeted from appropriations and approximately 50 percent from tuition and fees.

MSU is accountable to Michigan citizens. It has the highest number of in-state students among Michigan public universities. Michigan is always the first beneficiary of MSU’s graduates as it delivers high-quality academic programs and global networks with Michigan applications.

MSU continues to be a leader in creating knowledge for the 21st century and as such is recognized as one of the world’s top 100 universities. MSU received $528 million in external funding during FY14 of which about 53 percent was research related. The federal share of research funding was approximately 87 percent. Research and scholarly work of this magnitude has a significant impact on the Michigan economy, both in expenditures and jobs. MSU actively pursues economic growth through programs across the university. Examples include the MSU Center for Community and Economic Development, which provides training and consulting services to Michigan communities.

The university is also a key player in the development of Michigan’s health care and life science sector including educating both nurses and physicians. MSU is involved in partnerships with dozens of hospitals to train physicians, while bringing federal graduate medical education funding into those communities. The College of Human Medicine has campuses in seven communities including Grand Rapids and Traverse City; the College of Osteopathic Medicine has campus locations in East Lansing, Detroit, and Macomb County.

MSU has localized the diverse resources for business outreach, technology commercialization, and new business formation under one roof: the MSU Innovation Center. The Innovation Center is MSU’s single site for economic value creations from MSU innovations. Entrepreneurs and established businesses work with Business-CONNECT, MSU’s portal for engagement with the business community; they access patented technologies at MSU Technologies (the university’s technology transfer office); and they engage in company creation and investment at Spartan Innovations L3C, which focuses on creating sustainable MSU start-ups.

Additionally, the Product Center at MSU helps Michigan entrepreneurs develop and commercialize high-value, consumer-responsive products and businesses in the agriculture, natural resources, and bioeconomy sectors. Since it began in 2004, the Product Center has provided a wide range of venture development services to more than 2,999 clients. It has assisted in the formation of more than 1,583 ventures for new
and existing firms, leading to the realized launch or expansion of 396 businesses across Michigan that generated more than $322 million in annual sales, and the creation/retention of approximately 1,791 jobs.

Funding directly impacts the students MSU is able to attract and retain. Entering student ACT scores are up over the last ten years. MSU has 25 academic programs in the top 20 nationally. Four graduate programs and one undergraduate program rank number 1. At MSU, 92 percent of graduating seniors who responded last year to the National Survey of Student Engagement rated MSU’s academic quality as good or excellent, and 86 percent said they would attend MSU if they had to do it over again.

MSU’s six-year graduation rate for the class of 2012 was 78 percent, which is 8 percentage points higher than the rate predicted by U.S. News & World Report based on incoming student characteristics. MSU’s plus-8 rate is the second-highest in the Big Ten, exemplifying MSU’s willingness to take risks when investing in a student’s potential. Moreover, it is a measure of quality that demonstrates how well MSU is using its educational resources to graduate students, even in difficult budgetary times.

**Financial aid: assuring opportunity**

MSU is committed to assuring opportunity to higher education for Michigan students. Over 76 percent of undergraduate students and over 70 percent of all students come from Michigan’s 83 counties. For FY15, MSU continued to increase financial aid at a rate greater than increases to tuition with approximately $112.2 million budgeted in financial aid programs, representing a total increase of approximately 4.0 percent for one year and 45% over five years.

In FY14, 65 percent of all MSU students received some form of financial aid and 22 percent of undergraduate students received a Pell Grant. In addition to high-need students, MSU carefully monitors the distribution of student-family income and focuses significant aid resources at the students with family income just above Pell levels.

**MSU AgBioResearch and MSU Extension**

As the nation’s pioneer land-grant university, MSU is especially committed to working with Michigan stakeholders to meet the needs of our agriculture and natural resources industries through a variety of means including a programmatic presence in communities across the state. The annual economic impact of the food and agribusiness sector exceeds $91 billion and is a leading force for economic stability in Michigan. With agribusiness also
among the fastest growing sectors in the state, MSU AgBioResearch and MSU Extension contribute to Michigan’s economy with significant research, educational programs, and a community presence to boost economic development and growth related to agriculture and natural resources, community vitality, entrepreneurship, and career preparation for young people. Therefore, it is essential that full recurring support be provided to both MSU AgBioResearch and MSU Extension, including inflationary increases.

MSU AgBioResearch is focusing on the following key research areas:
- Food and health
- Environmental stewardship and natural resource policy and management
- Enhanced profitability in agriculture and natural resources
- Secure food and fiber systems
- Families and community vitality

MSU Extension is focusing on:
- Assisting the agricultural sector with production issues, risk management, and reducing environmental risks
- Preparing Michigan youth for their future as leaders and citizens
- Providing programs on obesity prevention, food safety, and chronic disease management
- Helping develop a robust community food system across Michigan
- Assisting Michigan’s citizens with foreclosure prevention and financial education
- Helping to ensure the appropriate use of Michigan’s natural resources

In an era of significantly reduced state funding and increasing expenses, MSU continues to build upon its partnerships with local, state and federal government agencies and with the private sector while maintaining its core values and commitments. Leadership continues to balance increasing value of our work while ensuring it matches the high quality expected of MSU. We engage our partners, our students, our faculty and the stakeholders and communities we serve, both locally and globally, to shape a shared future of sustainable prosperity.

MSU is also working with stakeholders and the Michigan Department of Agriculture and Rural Development (MDARD) to pursue the agriculture Strategic Growth Initiative to secure a pool of flexible funding above inflationary support for MSU AgBioResearch and MSU Extension core activities, directed toward solving impediments to strategic growth and emerging threats with significant stakeholder input. This is particularly valuable to
Michigan, the second most diverse agriculture production state in the nation, and home to 90 commodity organizations.

**Facility for Rare Isotope Beams**

MSU continues to work with the U.S. Department of Energy Office of Science (DOE-SC) in developing the Facility for Rare Isotope Beams (FRIB) and continues to manage against the annual plan prepared by MSU and approved by DOE. On August 1st, 2013 the DOE-SC approved critical decisions CD-2 and CD-3A. CD-2 baselines the scope, cost ($730M of which the community shares $94.5M) and schedule (completion by June 2022) and is managing towards completion in December 2020. The project received CD-3b approval in August of 2014 with project progress well in advance of DOE targets, a necessary approval for assuring December 2020 completion.

The centerpiece of the new user facility will be a superconducting linear accelerator that will increase dramatically the reach of rare isotope research in the United States. The accelerator will produce isotopes that normally exist only in the most extreme environments in the universe and will expand the usefulness of isotopes in a broad range of applications from modeling stars to understanding the workings of nanoscale electronic devices.

FRIB is a critical project for American science and the State that not only will keep MSU on the cutting edge of nuclear science, but will ensure the training of the nuclear scientists of tomorrow while bolstering the economies of mid-Michigan and the entire State. FRIB will cost $730 million to design and build. In FY14, the State made a commitment to bond and service the community cost share of $94.5 million. Construction began in 2012 and will be completed by 2022, with current forecasts anticipating completion in December 2020. It is projected to create hundreds of jobs in mid-Michigan while bringing in more than $1 billion of economic activity to Michigan in the next 20 years. MSU looks forward to continuing its partnership with the State of Michigan to assure the successful completion of this project.

**Capital outlay**

In July of 2013 the State passed an amended construction authorization for the Bio Engineering Facility with a total authorized cost of $57.7 million. The State share is $30.0 million and the Michigan State University share is $27.7 million. Due to a variety of factors it is expected that there will be cost savings on this project and a request is before the State
to apply those savings to build out as much of the shelled 3rd and 4th floors as possible. Michigan State University is extremely grateful for the continued State support of this key research facility that supports our continued commitment to biomedical and engineering research. The capital outlay requests support programs that have strong national reputations, expanding research bases, and high enrollment demand that will sustain the university and its contributions to Michigan. Funding of these requests will provide economic development in the state, now and in the long term. Our capital outlay top priority remains the Interdisciplinary Science and Technology Building.

New construction

New construction is needed to support high-priority programs ranging from the sciences to academic/administrative technology. The facilities are needed to support current and future programmatic initiatives in the STEM disciplines with an emphasis on support for the biomedical, biological and engineering sciences, computation and data sciences, water and energy; and economic development of Michigan, now and in the long term.

Renovations and additions

Requests for renovations and/or additions address extensive programmatic and maintenance improvements required by buildings previously funded by the State. Renovations may be needed to reconfigure space in order to support the work of the programs housed in those facilities, upgrades to building systems, and provisions for barrier-free access. In other cases, due to program requirements, condition, age, and long-term value, entire renovation of a building is warranted.

Requests for major renovations and/or additions include the Plant Sciences-Bioeconomy, Biological Sciences, and Music facilities.

Major systems replacement

Current forecasts anticipate general fund facility and infrastructure needs of approximately $173.1 million over the next five years. In view of the extensive facility needs it faces, MSU has had to draw upon an increasing amount of internal university resources to address the most critical facility maintenance and programmatic requirements. The ability to continue the trend of self-funding these capital improvements is not sustainable without impact on other programs.

The university seeks funding for more targeted and specific building systems maintenance and instructional space facility upgrades. Examples of systems in need of repair or replacement include roofing, windows, electrical, mechanical, chiller, refrigeration, steam,
fire, security, and barrier-free access. Instructional space upgrades may include furniture, ceilings, lighting, painting, power, data and technology support, and lab benches and fume hoods.

**Potential State Initiatives**

MSU’s continued emphasis and investment in Engineering programs mirrors the state’s interest and support for increasing the number of Engineering majors and graduates. Facility investments will provide for infrastructure capacity and support necessary to increase the number of students in Engineering majors, and to provide innovative learning environments and opportunities for research based experiences.